



7100 NORTH BROADWAY
SUITE 2-L
DENVER, COLORADO 80221
(303) 426-1086

◉ COAL ◉ OIL SHALE ◉ URANIUM ◉ OIL & GAS ◉ MINERALS ◉ RECLAMATION ◉
RELATED SERVICES

May 27, 1986

RECEIVED
JUN 19 1986

DIVISION OF
OIL, GAS & MINING

BUREAU OF LAND MANAGEMENT
Utah State Office
324 S. State, Suite 301
Salt Lake City, UT 84111-2303

RE: NORTH VIRGIN IMPERIAL FEDERAL #19-1
1315' FSL and 1225' FWL
Section 19, T40S-R11W
Washington County, Utah

Gentlemen:

This letter is to inform you that Permitco Inc. is authorized to act as Agent and to sign documents on behalf of Berge Exploration, Inc. when necessary for filing county, state and federal permits including Onshore Order No. 1, Right-Of Way applications, etc., for the above mentioned well.

It should be understood that Permitco Inc. is acting as Agent only in those matters stated above and is not responsible for drilling, completion, production or compliance with regulations.

Berge Exploration, Inc. agrees to accept full responsibility for operations conducted in order to drill, complete and produce the above-mentioned well.

Sincerely,

BERGE EXPLORATION, INC.

W. Carl Spreng
W. Carl Spreng

WCS:rg

Permitco inc.

A Petroleum Permitting Company

RECEIVED
JUN 19 1986

DIVISION OF
OIL, GAS & MINING

June 16, 1986

State of Utah
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Re: Berge Exploration, Inc.
N. Virgin Imperial Federal 19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah

Gentlemen:

Berge Exploration, Inc. proposes to drill a well at the above mentioned location.

We realize that this location is a non-standard location in accordance with the spacing rules of the State of Utah. This location was chosen based on topography.

Berge Exploration, Inc. is the lease holder of all of Section 19, T40S - R11W, Washington County, Utah. Therefore, no other lease holders will be affected by the drilling of the above proposed well.

We, therefore, request your permission to drill this well at a non-standard location.

Sincerely,

PERMITCO INC.



Lisa L. Green
Consultant for
Berge Exploration, Inc.

cc: Berge Exploration, Inc.

PERMITCO INC.
NEW ADDRESS:
P. O. BOX 44065
DENVER, CO 80201-4065

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK. 1a. TYPE OF WORK: DRILL [X], DEEPEN [], PLUG BACK []. 2. NAME OF OPERATOR: N 7660 Berge Exploration, Inc. 5. LEASE DESIGNATION AND SERIAL NO.: U-29259. 19. PROPOSED DEPTH: 4400'.

Table with 5 columns: SIZE OF HOLE, SIZE OF CASING, WEIGHT PER FOOT, SETTING DEPTH, QUANTITY OF CEMENT. Includes rows for 14-3/4" and 8-3/4" hole sizes.

Berge Exploration, Inc. proposes to drill a well to 4400' to test the Timpoweap, Kaibab Coconio, & Callville formations. If productive, casing will be run and the well completed.

See Onshore Order No. 1 attached.

RECEIVED JUN 19 1986

DIVISION OF OIL, GAS & MINING

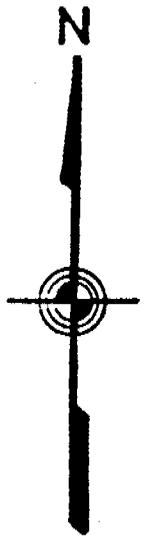
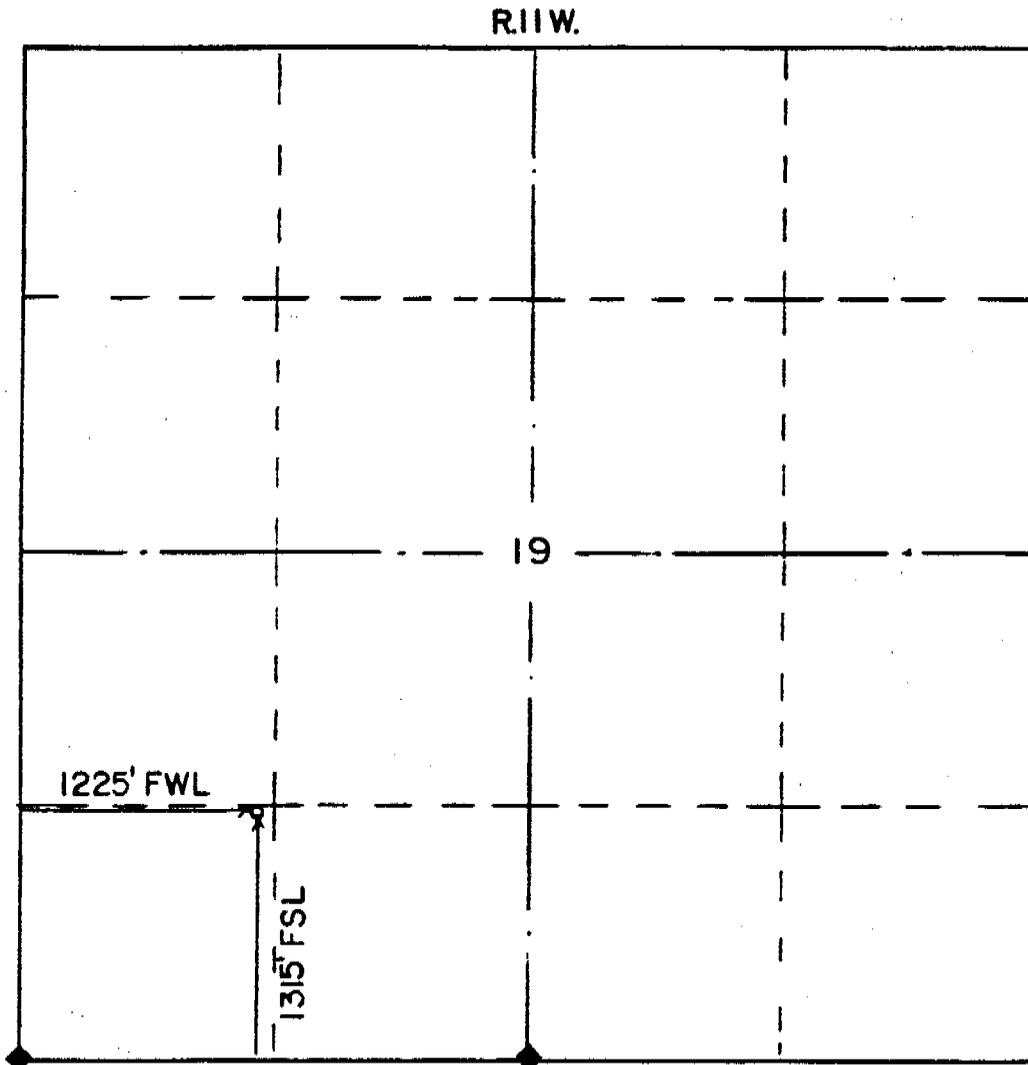
IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone.

24. SIGNED: [Signature] TITLE: Consultant for Berge Exploration, Inc. DATE: 6/16/86

PERMIT NO. 43-053-30041 APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING

DATE: 7-8-86 BY: John R. Bija WELL SPACING: 302.1

WELL LOCATION AND ACREAGE DEDICATION PLAT



1"=1000'

Operator BERGE EXPORATION		Well name NORTH VIRGIN FEDERAL "I	
Section 19	Township 40 SOUTH	Range 11 WEST	Meridian SLM
Footages 1225' FWL - 1315' FSL		County/State WASHINGTON, UTAH	Elevation 4546'
Formation	Dedicated Acreage	Requested by LISA GREEN	
<p>The above plat is true and correct to the best of my knowledge and belief.</p> <div style="text-align: center;"> <p>Gerald G. MIDDLEBROOK, L.S.</p> </div>			

ONSHORE OIL & GAS ORDER NO. 1

Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

RECEIVED
JUN 19 1986

DIVISION OF
OIL, GAS & MINING

North Virgin Imperial Federal #19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah

Prepared For:

BERGE EXPLORATION, INC.

By:

PERMITCO INC.
P.O. Box 44065
Denver, Colorado 80201-4065

Copies Sent To:

- 4 - BLM - Cedar City, Utah
- 1 - BLM - St. George, Utah
- 1 - Division of Oil Gas & Mining - SLC, Utah
- 1 - Zion National Park Service - Springdale, Utah
- 4 - Berge Exploration, Inc. - Denver, CO

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A Petroleum Permitting Company

ONSHORE ORDER NO. 1
Berge Exploration Inc.
North Virgin Imperial Federal 19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah

DRILLING PROGRAM

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

1. The surface formation and estimated formation tops to be encountered are as follows:

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>
Timpoweap	910'	+3450'
Kaibab	1120'	+3240'
Coconion	2800'	+1560'
Pacoon	3510'	+ 850'
Calville	3965'	+ 395'
T.D.	4400'	

2. The estimated depths at which oil, gas, water or other mineral bearing zones are expected to be encountered are as follows:

<u>Substance</u>	<u>Formation</u>	<u>Anticipated Depth</u>
Oil	Timpoweap	910'
Oil	Kaibab	1120'
Oil	Coconino	2800'
Oil	Callville	3695'

All fresh water and prospectively valuable minerals encountered during drilling, will be recorded by depth cased and cemented. All oil and gas shows will be tested to determine commercial potential.

3. Pressure control equipment will consist of a 10", 3000# BOP. (See BOP Diagram attached.)

Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

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 Washington County, Utah

DRILLING PROGRAM

4. a. Casing

The proposed casing program is as follows:

<u>Purpose</u>	<u>Depth</u>	<u>Hole Size</u>	<u>O.D.</u>	<u>Wt.</u>	<u>Grade</u>	<u>Type</u>	<u>New or Used</u>
Surface	0- 900'	14-3/4"	9-5/8"	36#	J-55	ST&C	New
Produc.	0-4400'	8-3/4"	5-1/2"	15.5#	J-55	ST&C	New

b. Cement

The cementing program will be as follows:

<u>Surface</u>	<u>Type and Amount</u>
0-900'	650 sx Lite, Tail in with 200 sx Class H, 2% CaCl ₂ , 1/2#/sk flocele or sufficient to circulate to surface.
<u>Production</u>	<u>Type and Amount</u>
	150 sx Class "H", 3/4% turbulence inducer, 1/4#/sk flocele placed over each prospective pay zones. Stage collars to be used if necessary.

c. Auxillary equipment will be as follows:

1. Kelly cock.
2. Float above the bit.
3. A sub with a full opening valve will be on the floor when the kelly is not in use.
4. Monitoring of the system will be done visually.

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DRILLING PROGRAM

5. Drilling fluid will be as follows:

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>F/L</u>	<u>PH</u>
0-900'	Gel/Lime	8.7-9.2	35-45	N/C	9.5
900-4400'	Areated Mud, LSND	6.0-8.0	35-45	10-15	9.5

6. Coring, logging and testing programs are as follows:

- a. No cores are anticipated.
- b. The logging program will consist of a DIL SFL, GR SP and a CNL/FDC/GR-Caliper.
- c. A maximum of four (4) drill stem tests will be run or as necessary to adequately test any shows.

Whether the well is completed as a dry hole or as a producer, "Well Completion or Recompletion Report and Log" (Form 3160-4) will be submitted not later than 15 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the District Manager.

7. Abnormal conditions, bottom hole pressures and potential hazards.

- a. The maximum bottom hole pressure to be expected is 1650 psi.
- b. Berge Exploration, Inc. plans to spud the North Virgin Imperial Federal #19-1 immediately upon approval of this application, or prior to August 31, 1986, due to a lease expiration. Berge Exploration, Inc. intends to complete the well within approximately one month after the well has reached T.D.

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Washington County, Utah

DRILLING PROGRAM

8. Other Information

- a. The operator will contact the Dixie Resource Area at 801/673-4654 and the Zion National Park Service 801/772-3256, 48 hours prior to beginning any dirt work on this location.
- b. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the District Manager. If operations are to be suspended, prior approval of the District Manager will be obtained and notification given before resumption of operations.
- c. The spud date will be reported orally to the Dixie Resource Area Manager, a minimum of 24 hours before spudding. A Sundry Notice (Form 3160-5) will be sent within 24 hours of spudding, reporting the spud date and time. The Sundry will be sent to the District Manager.
- d. In accordance with Onshore Oil and Gas Order No. 1, this well will be reported on Form 9-329 "Monthly Report of Operations", starting with the month in which operations begin and continue each month until the well is physically plugged and abandoned.
- e. If a replacement rig is contemplated for completion operations, a "Sundry Notice" (Form 3160-5) to that effect will be filed, for prior approval of the District Manager. All conditions of this approved plan are applicable during all operations conducted with the replacement rig.
- f. If the well is successfully completed for production, then the District Manager will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communication, no later than the first business day following the date on which the well is placed on production.
- g. No well abandonment operations will begin without the prior approval of the District Manager. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the District Manager. A "Subsequent Report of Abandonment" (Form 3160-5), will be filed with the District Manager, within 30 days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration.

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Washington County, Utah

DRILLING PROGRAM

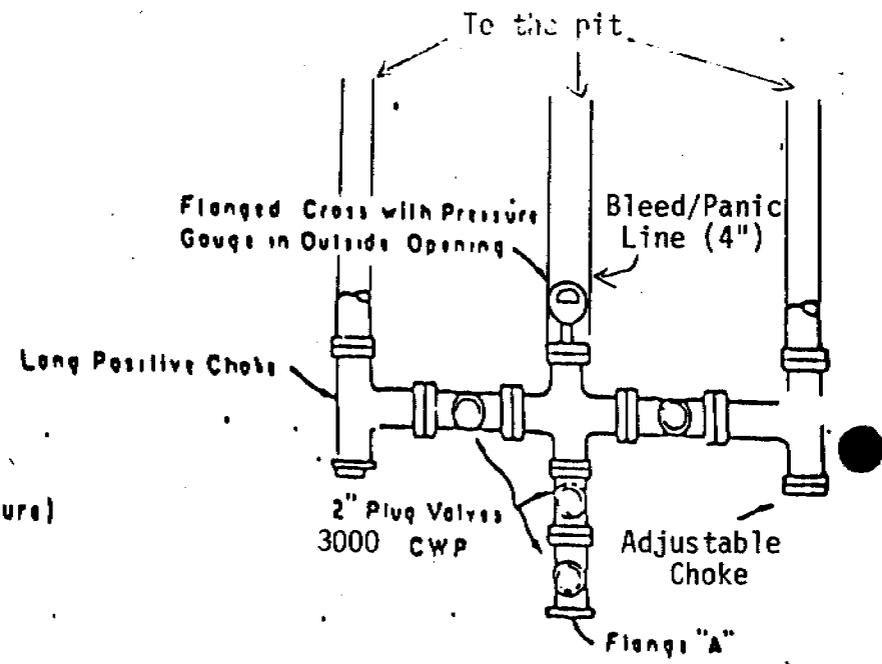
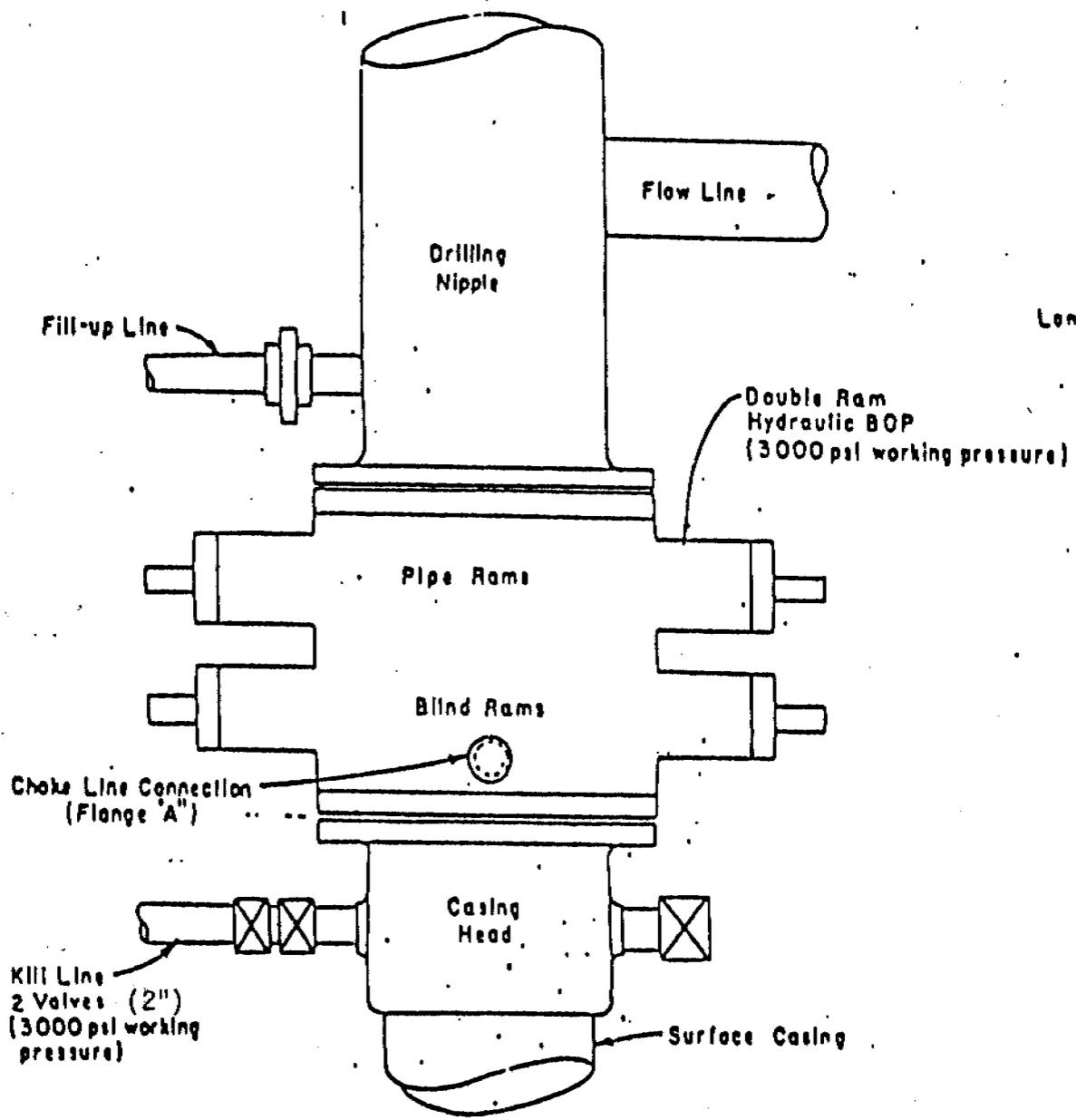
- h. Final abandonment will not be approved until surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the Dixie Resource Area Manager or his representative, or the appropriate Surface Managing Agency.
- i. Section 102(b)(3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the Operating regulations at Title 43 CFR 3163.4-1(c), requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, or the date on which such production has begun or resumed."

The date on which production is commenced or resumed will be construed for oil wells as the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever first occurs; and, for gas wells as the date on which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which gas is first measured through permanent metering facility, whichever first occurs.

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to \$10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109 (c) (3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3163.4-1(b)(5) (ii).

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PLAN VIEW - CHOKE MANIFOLD

ONSHORE OIL & GAS ORDER NO. 1
Berge Exploration, Inc.
North Virgin Imperial Federal 19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah

SURFACE USE PLAN

ONSHORE OIL & GAS ORDER NO. 1

Thirteen Point Surface Use Plan

1. Existing Roads

- a. The proposed well site is located 8 miles from Virgin, Utah.
- b. Directions to the location from Virgin are as follows:
Go North and East on the Kolob Road (100 E) for approximately 6.2 miles. Turn left and proceed north and west on an existing two-track road for approximately 4.2 miles. Turn left onto new access (flagged) for approximately 700 feet to the location.
- c. For location of access roads within a 2-Mile radius, see Map #1.
- d. Improvement to the existing access will be necessary. It has been estimated that three juniper trees and one scrub oak would be removed to facilitate widening of the road for rig entry on Park Service lands. Some pruning of various trees would also be required.
- e. The Zion National Park representative, Roger Rudolph or other appropriate designatee, at 801/772-3256 will be notified prior to any surface disturbance activities associated with old or new access roads or drill pad location(s). The Zion National Park representative(s) will be present before construction or disturbance activities begin to observe, review, and explain surface protection stipulations with the operator and/or dirt work contractor within the exterior boundaries of Zion National Park.
- f. No road work for the initial preparation of the 300 yards of dirt road within the park will be done except in the presence of the Superintendent or his designated representatives. Any needed fill material to repair ruts/washouts will be hauled in from outside the park boundary.
- g. All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.

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ONSHORE OIL & GAS ORDER NO. 1
Berge Explorations, Inc.
North Virgin Imperial Federal 19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah

SURFACE USE PLAN

2. Planned Access Roads

- a. The road will initially be flatbladed during drilling operations and will be approximately 18 feet wide. The maximum total disturbed width will be 30 feet.
- b. The maximum grade will be 10%.
- c. Turnouts will be installed where deemed necessary by the dirt contractor.
- d. The new access road was centerline flagged at the time of staking.
- e. Drainage will be installed as deemed necessary by the dirt contractor. The road will be sloped inward along the hillsides and ditched on the inside. Drainage across the road shall be provided for at such intervals as to prevent gulying on the downslope side of the road. Road berms shall be pulled in. The road grade should be rolled with the surface of the ground as much as possible to provide natural drainage.
- f. No gates, cattleguards or fence cuts will be necessary.
- g. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
- h. If production is established the access road will be water barred or brought to Class III Road Standards.
- i. Approximately 12 culverts will be required along the access road as discussed at the onsite inspection. Culverts will be a minimum of 18" in diameter. Low water crossings will be installed in place of culverts if deemed appropriate.
- j. Surfacing material will not be placed on the access road or location unless weather conditions dictate.
- k. The access road will be constructed in accordance with these stipulations and the BLM/FS/GS Surface Operating Standards. Additional specific construction procedures may be provided by the BLM representative during construction.

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SURFACE USE PLAN

3. Location of Existing Wells Within a 1-Mile Radius of the Proposed Location.
 - a. Water Wells - none
 - b. Injection or disposal wells - none
 - c. Producing Wells - none
 - d. Drilling Wells - none

4. Location of Tank Batteries and Production Facilities.
 - a. All permanent structures (onsite for six months or longer) constructed or installed (including oil well pump jacks) will be painted a flat, nonreflective, earthtone color to match the environment. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The color will be approved by the Bureau of Land Management.
 - b. If a tank battery is constructed on this lease, it will be surrounded by a dike of sufficient capacity to contain 1-1/2 times the storage capacity of the battery.
 - c. If production is established all facilities will be constructed on the wellpad. A Sundry notice will be submitted showing the proposed location of such facilities.
 - d. All loading lines will be placed inside the berm surrounding the tank battery.
 - e. Any necessary pits will be properly fenced to prevent any wildlife entry. The production pit will be flagged overhead.
 - f. All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to.
 - g. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the District Manager.

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SURFACE USE PLAN

4. Production Facilities (cont.)

- h. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.

5. Location and Type of Water Supply

- a. All water needed for drilling purposes will be obtained from from the town of Virgin, Utah. The exact source is located in the NE NW Sec. 21, T41S - R12W.
- b. Water will be trucked to location over the approved access roads.
- c. No water well is to be drilled on this lease.
- d. Use of water for this operation will approved by obtaining a temporary use permit from the Utah State Engineer, 801/637-1303.

6. Source of Construction Material

- a. Road surfacing and pad construction material will be native or obtained from a commercial source.

7. Methods of Handling Waste Disposal

- a. The reserve pit will not be lined unless porous material is encountered. The reserve pit will be constructed with an 8' wide dike on the downhill side and will be a minimum of 2/3 in cut.
- b. Three sides of the reserve pit will be fenced with four strands of barbed wire before drilling starts. The fourth side will be fenced as soon as the drilling is completed. The fence will be kept in good repair while the pit is drying.
- c. A trash pit will be constructed near the mud tanks and dug at least six feet into solid, undisturbed material. It will be totally enclosed with a fine wire mesh before the rig moves in. The road and pad will be kept litter free.

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SURFACE USE PLAN

7. Methods for Handling Waste Disposal (cont.)

- d. No burning of trash will be allowed.
- e. Produced waste water will be confined to a unlined pit for a period not to exceed 90 days after initial production. During the 90-day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the District Manager's approval. Failure to file an application within the time allowed will be considered an incident of noncompliance, and will be grounds for issuing a shut-in order.

8. Ancillary Facilities

- a. There are no airstrips, camps, or other facilities planned during the drilling of the proposed well.

9. Well Site Layout

- a. See Diagram #1 for rig layout. See Diagram #2 for cross section of drill pad. See Diagram #3 for cuts and fills.
- b. The location of mud tanks; reserve, burn and trash pits; pipe racks; living facilities and soil stockpiles will be shown on Diagrams #1 & #3. The location will be laid out and constructed as discussed during the predrill conference.
- c. The top 12 inches of soil material will be removed from the location and used as fill material on the south edge of the wellpad.
- d. Vegetative clearing of the access route and pad location should be kept to a minimum to maintain vegetative screening of the road and/or pad. Trees cleared from the pad, will be piled off the northeast corner of the drillpad and north of the pad access road.
- e. Access to the well pad will be from the east.

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SURFACE USE PLAN

10. Reclamation

- a. Immediately upon completion of drilling, all trash and debris will be collected from the location and surrounding area and hauled to the county dump site.
- b. The operator or his contractor will contact the Dixie Resource Area office in St. George, Utah (801/673-4654) 48 hours before starting reclamation work that involves earthmoving equipment and upon completion of restoration measures.
- c. Before any dirt work to restore the location takes place, the reserve pit must be completely dry.
- d. All disturbed areas will be recontoured to blend as nearly as possible with the natural topography. This includes removing all berms and refilling all cuts.
- e. The stockpiled topsoil will be spread evenly over the disturbed area. All disturbed areas will be ripped with the contour.
- f. Seed will be broadcast between mid-October and mid-February with the following prescription.

7 lbs/acre Indian Ricegrass
1 lb/acre Yellow Sweetclover
- g. After seeding is complete, the stockpiled trees will be scattered evenly over the disturbed areas. To prevent vehicular access all culverts will be removed and the access will be blocked at a point approximately three miles from the blacktop. A specific point will be determined at a later date.
- h. If the well is productive, the reserve pit and that portion of the location and access road not needed for production and production facilities will be reclaimed as described in the reclamation section. Enough topsoil will be kept to reclaim the remainder of the location at a future date. This remaining stockpile of topsoil will be seeded in place using the prescribed seed mixture.

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Washington County, Utah

SURFACE USE PLAN

10. Reclamation of Surface (cont.)

- i. Upon completion of drilling operations, the Cedar City District Office shall be notified of production and/or reclamation plans so that an inspection may be conducted to determine if mitigating measures, in addition to those included in the surface use plan are necessary.

11. a. Surface Ownership

The wellpad and the majority of access road are located on lands managed by the Bureau of Land Management. Portions of access road do cross the Zion National Park Service, Larry O'Neil, Bud Lee and the State of Utah.

b. Mineral Ownership

Federal

12. Other Information

- a. Berge Exploration, Inc. shall designate a representative from the company who will be available on site to insure complete compliance with all stipulations. Zion National Park personnel and the Bureau of Land Management shall be given the name of the responsible individual.
- b. The Berge Exploration, Inc. representative shall insure that all individuals working at or near the location are aware of and comply with all applicable stipulations.
- c. There will be no change from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be used. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFR 3162.2.
- b. "Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3164.
- c. The dirt contractor will be provided with an approved copy of the surface use plan.

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SURFACE USE PLAN

12. Other Information (cont.)

- d. If subsurface cultural materials are exposed during construction, work in that spot will stop immediately and the Dixie Resource Area Office will be contacted. All people who are in the area will be informed by the operator that they are subject to prosecution for disturbing archeological sites or picking up artifacts. Salvage or excavation of identified archeological sites will be done by a BLM approved archeologist only if damage occurs.
- e. This permit will be valid for a period of one year from the date of approval.
- f. An archeological study was performed by LaPlata Archaeological Consultants. No significant cultural resources were found and clearance is recommended. A copy of this report is attached.
- g. A Right-of-Way application will be filed on all BLM lands to be crossed outside of Lease No.: U-29259.

13. Lessee's or Operator's Representative and Certification

Permit Matters

PERMITCO INC.
Lisa L. Green
P.O. Box 44065
Denver, CO 80201-4065
303/322-7878

Drilling & Completion Matters

BERGE EXPLORATION, INC.
7100 North Broadway
Suite 2-L
Denver, CO 80221
Carl Spreng - 303/426-1086 (W)

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SURFACE USE PLAN

13. Lessee's/Operator's Certification

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite 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 Berge Exploration, Inc. and its contractors and subcontractors in conformity with the plan and the terms and conditions under which it is approved.

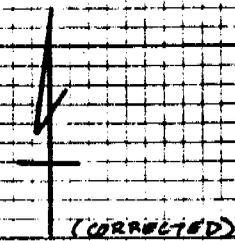
June 16, 1986
Date:


Lisa L. Green - PERMITCO INC.
Authorized Agent for:
BERGE EXPLORATION, INC.

Permitco

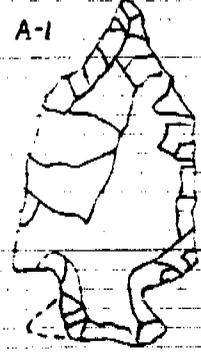
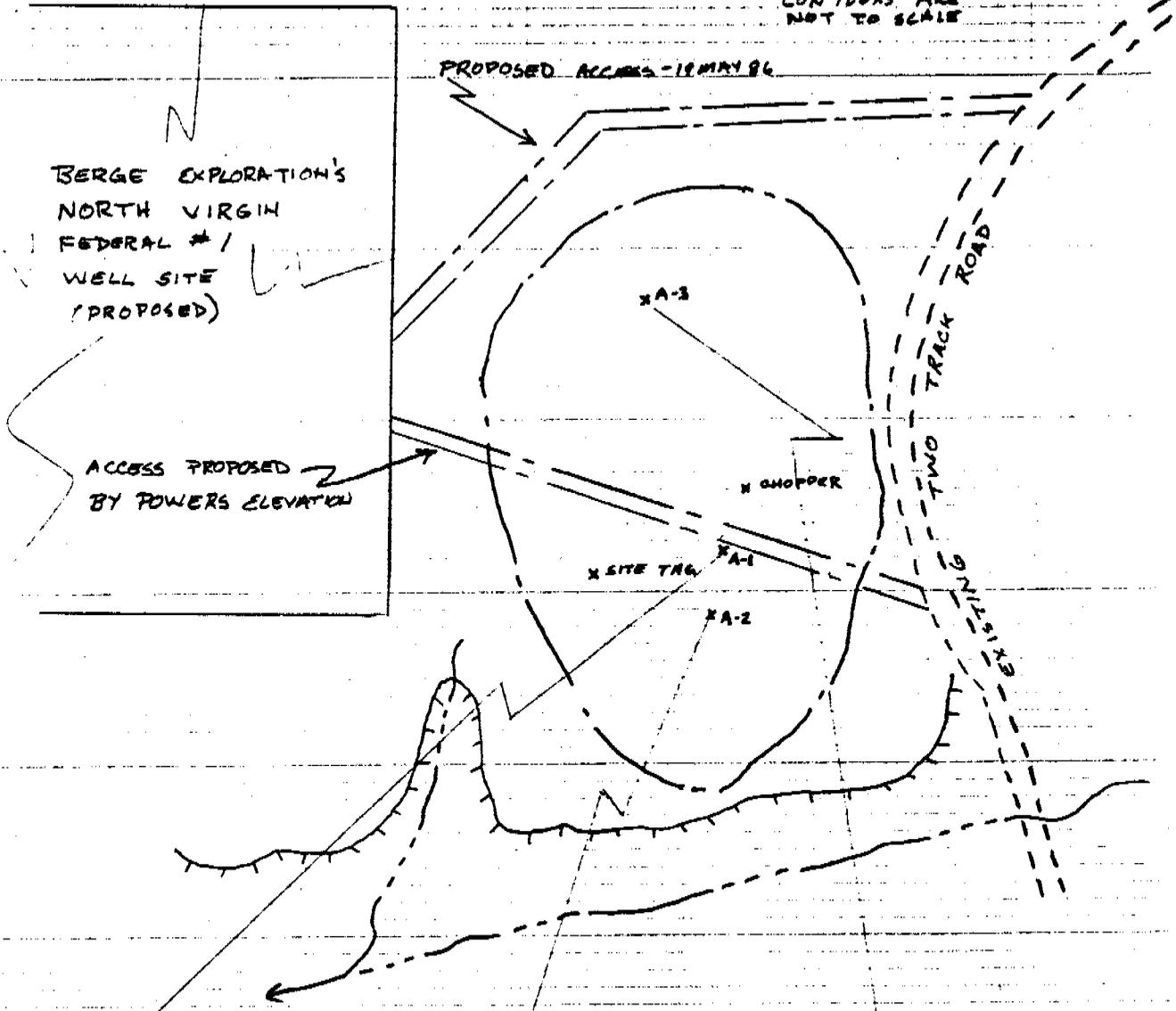
Permitco Incorporated
A Petroleum Permitting Company

SITE 42WS 2191
 TEMP NO. LAC 8638-1
 19 MAY 86
 B.N. HIBBETS



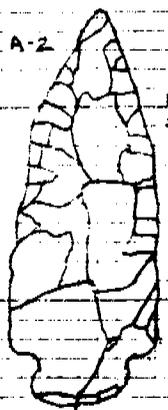
0 25
 METERS

CONTOURS ARE
 NOT TO SCALE



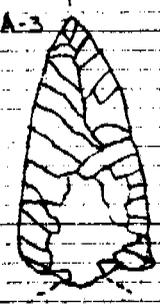
A-1
 E. KO. SIDE
 NOTCHED
 w/ DRILL
 TIP
 CHERT
 LENTICULAR
 X-SECTION

1:1



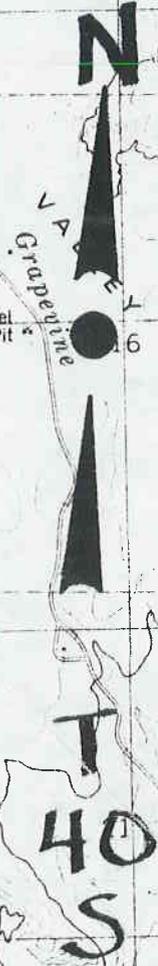
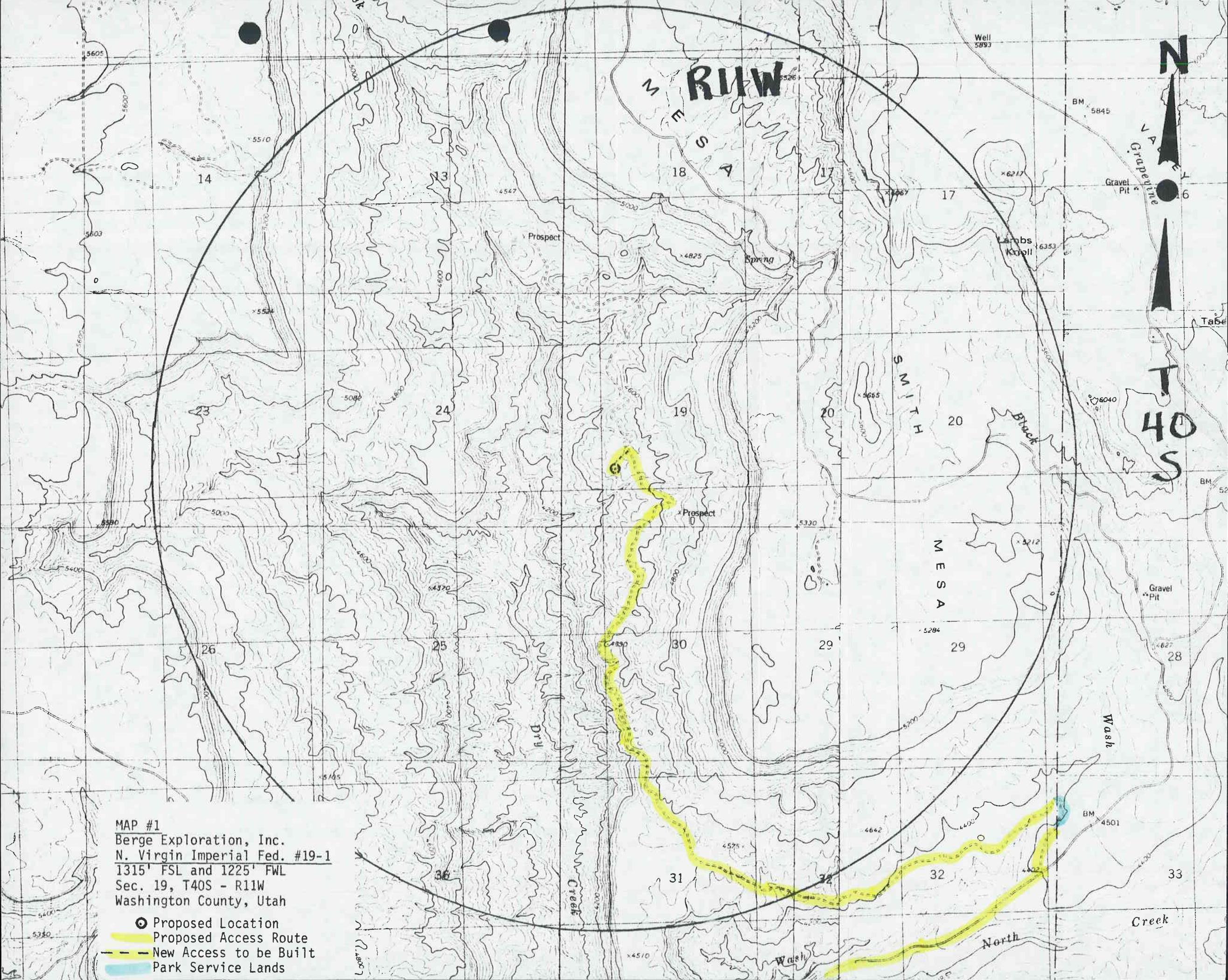
A-2
 HAWKEN
 SIDE NOTCHED-
 LIKE
 CHERT
 BI-CONVEX
 X-SECTION

1:1



A-3
 HAWKEN
 SIDE NOTCHED-LIKE
 CHERT
 LENTICULAR
 X-SECTION

1:1



MAP #1
Berge Exploration, Inc.
N. Virgin Imperial Fed. #19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah

- ⊙ Proposed Location
- Proposed Access Route
- - - New Access to be Built
- Park Service Lands

Scale: 1" = 50'

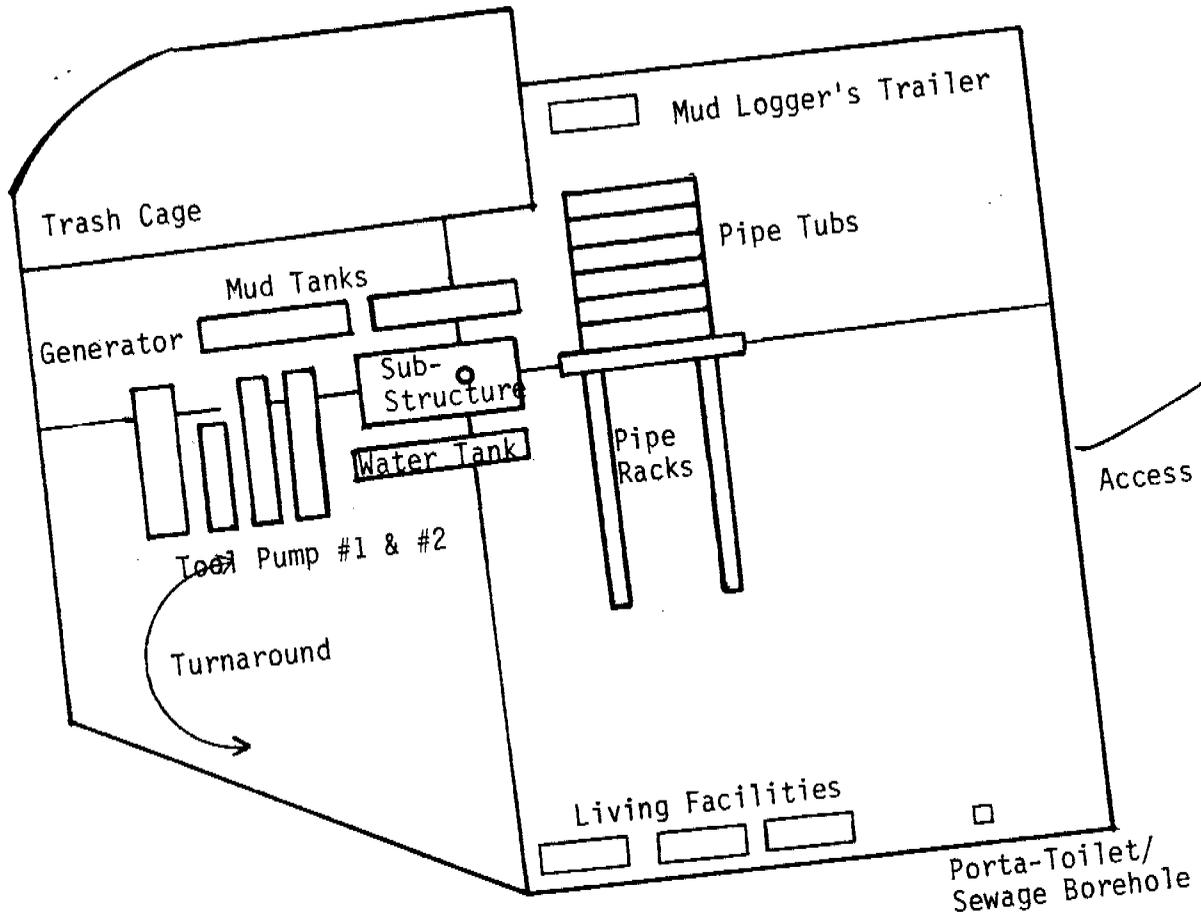


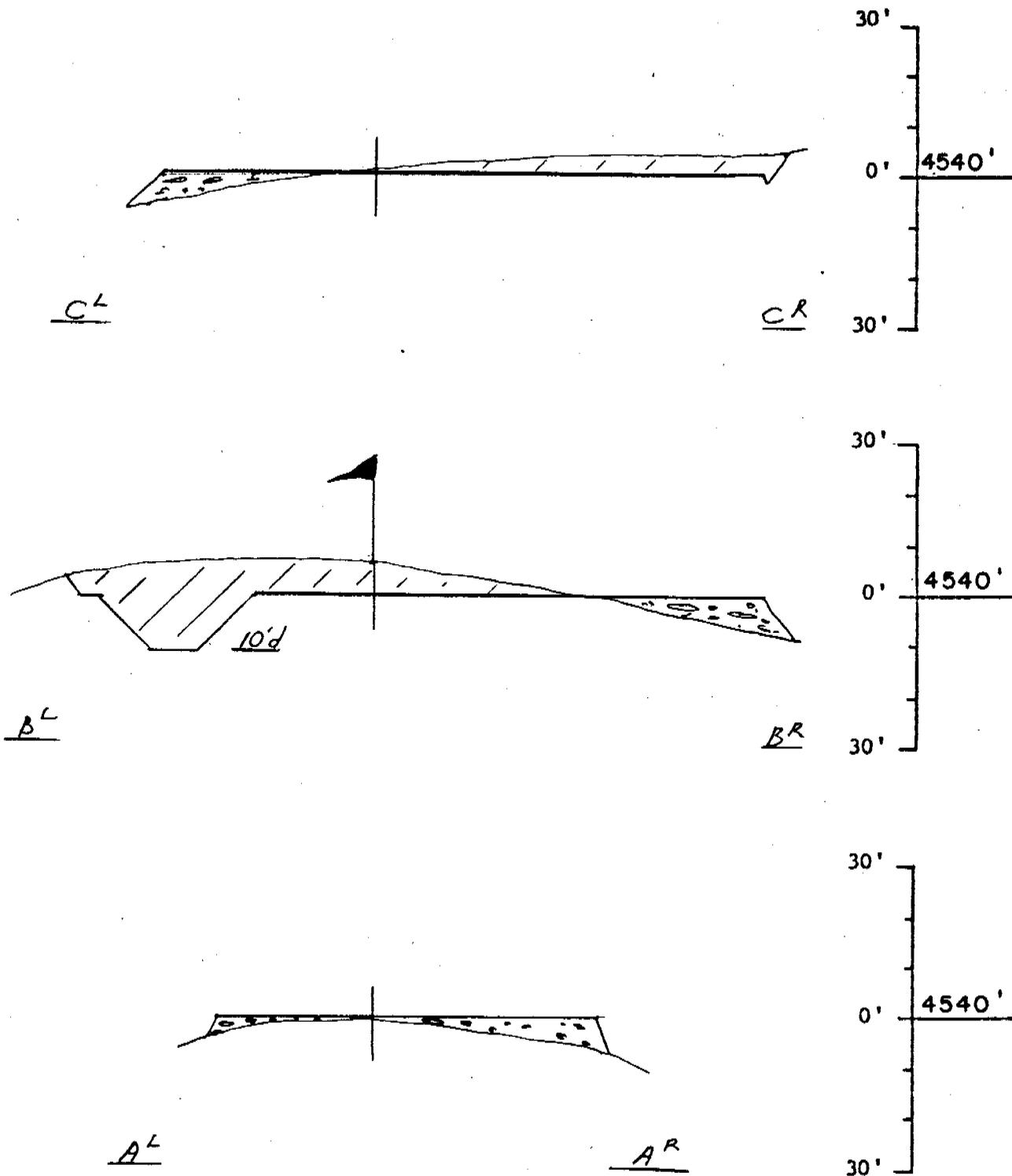
DIAGRAM #1
Rig Layout
Berge Exploration, Inc.
N. Virgin Imperial Fed. #19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah

WELL PAD CROSS-SECTION

DIAGRAM #2

Berge Exploration, Inc.
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah
North Virgin Federal

Cut //// 4350 cy Scales: 1" = 50' H.
Fill --- 2650 cy 1" = 30' V.



WELL PAD PLAN VIEW

North Virgin Federal # 1

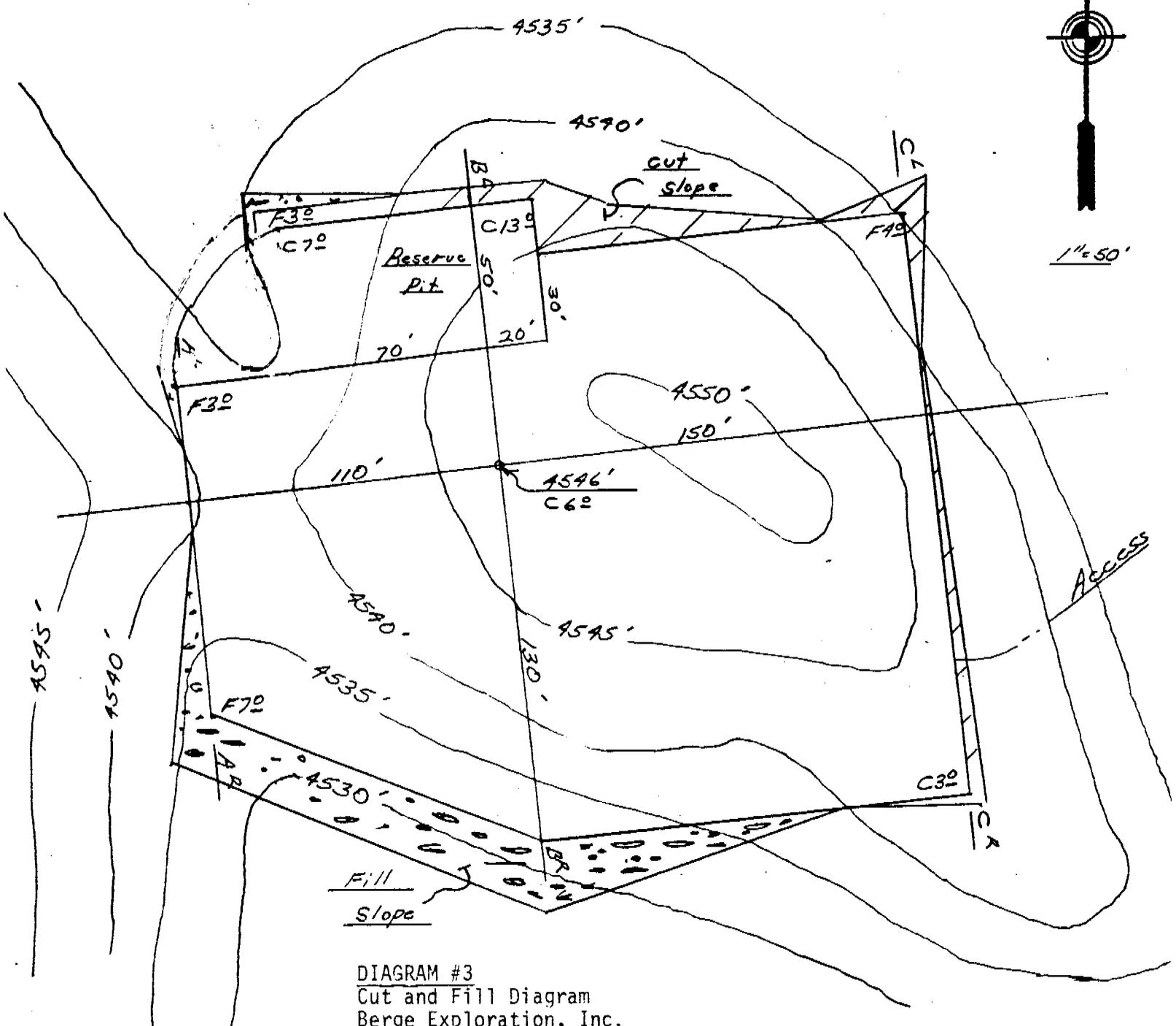


DIAGRAM #3
Cut and Fill Diagram
Berge Exploration, Inc.
N. Virgin Imperial Federal #19-1
1315' FSL and 1225' FWL
Sec. 19, T40S - R11W
Washington County, Utah



La Plata Archeological Consultants, Inc.

P.O. Box 783
Dolores, Colorado 81323
303-882-4933

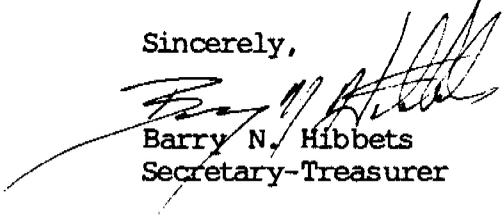
June 10, 1986

Mr. Gardiner Dalley
District Archeologist
Bureau of Land Management
Cedar City District Office
154 North Main
P.O. Box 729
Cedar City, Utah 84720

Mr. Dalley:

Please find enclosed the archeological survey report for Berge Exploration's proposed North Virgin Federal No. 1 well site and access road located on BLM land in Washington County, Utah. The location selected by Berge could not be staked because of topographic constraints and Berge elected to use a previously staked and surveyed well site near their requested location. One archeological site was discovered and recorded near this location on a proposed access route. An alternate route has been flagged and surveyed that avoids the site. Providing the site is strictly avoided by construction archeological clearance for the Berge North Virgin Federal # 1 well site and new access route is recommended.

Sincerely,



Barry N. Hibbets
Secretary-Treasurer

BNH/mm

Distribution:

BLM-Salt Lake City
Division of State History-Antiquities Section
Berge Exploration
Permitco

AN ARCHEOLOGICAL SURVEY OF
BERGE EXPLORATION'S
NORTH VIRGIN FEDERAL # 1
WELL SITE AND ACCESS ROAD,
WASHINGTON COUNTY, UTAH

LAC REPORT 8638

by
BARRY N. HIBBETS

LA PLATA ARCHEOLOGICAL CONSULTANTS, INC.
POST OFFICE BOX 783
DOLORES, COLORADO 81323

JUNE 3, 1986

Federal Antiquities Permit
85UT57626
Utah State Permit
U86-LA-293(b)

Prepared For:
Berge Exploration, Inc.
7100 North Broadway, Suite 2L
Denver, Colorado 80221

ABSTRACT

During May, 1986, an archeological survey of Berge Exploration, Inc.'s North Virgin Federal # 1 well site was conducted by personnel of La Plata Archeological Consultants, Inc. The project area is situated on land administered by the Bureau of Land Management - Beaver River Resource Area, in east-central Washington County, Utah. The well site had been staked and archeologically surveyed in 1985 by personnel of Powers Elevation. Berge Exploration later requested a slight relocation of the well site. Because of severe topographic relief the requested location was not staked and the original location was sustained. During the course of the investigation one archeological site was discovered and recorded that was inadvertently missed by the Powers survey. The site (42WS2191), a broad and diffuse lithic scatter, is located on the proposed access road adjacent to the well site. An alternate access route was flagged in order to avoid the site, and all old access flagging was removed. Providing the site is strictly avoided by construction activity, and given other stipulations contained in this report archeological clearance for Berge Exploration's North Virgin Federal # 1 well site is recommended.

INTRODUCTION

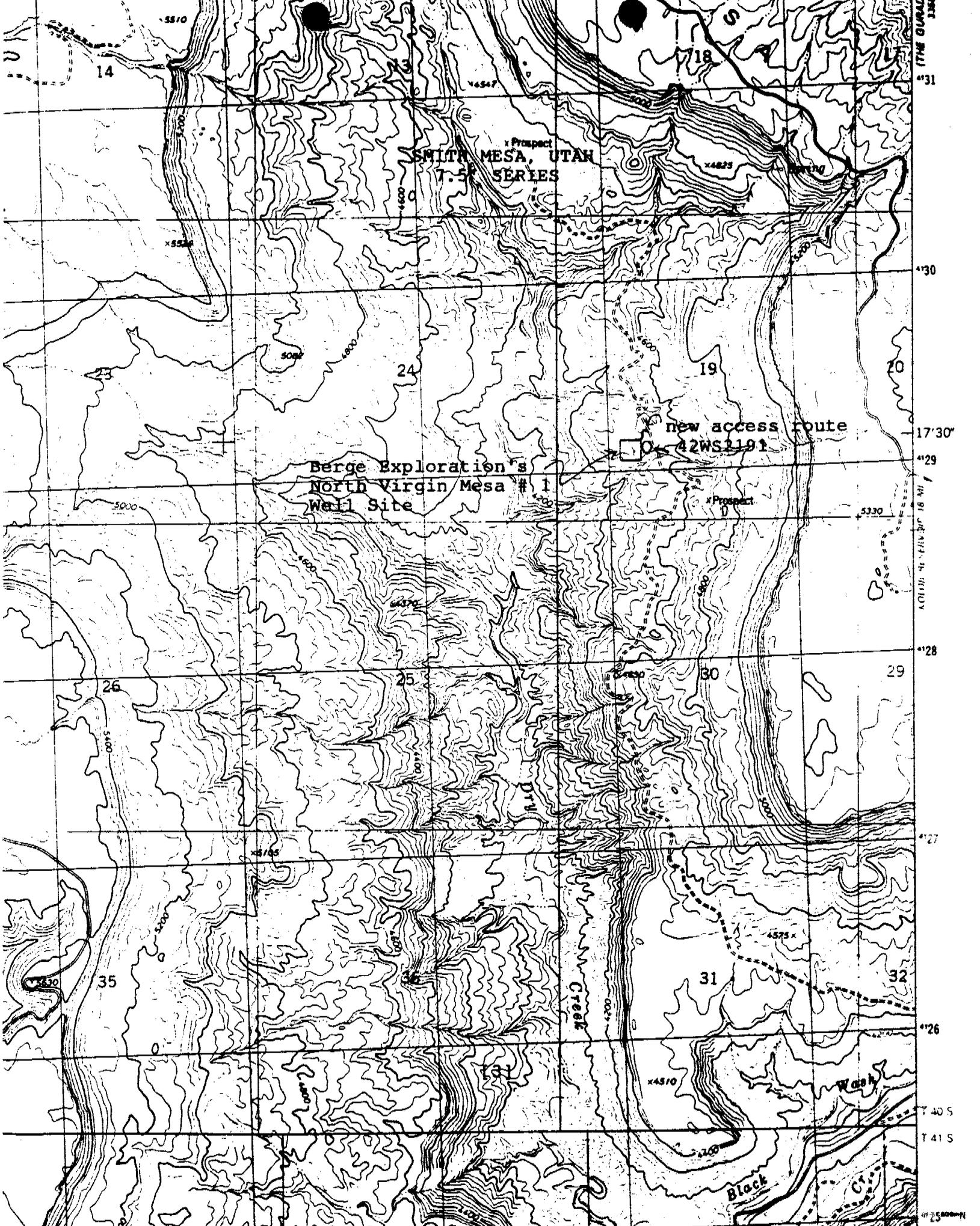
The archeological survey of Berge Exploration, Inc.'s North Virgin Federal # 1 well site was conducted by personnel of La

Plata Archeological Consultants, Inc. The survey was requested by Ms. Lisa Green of Permitco. It was conducted on May 19, 1986 by Mr. Barry N. Hibbets of LAC.

The project area is located in the CT of the SW $\frac{1}{4}$ of section 19, Township 40 South, Range 11 West, Washington County, Utah. The Bureau of Land Management - Beaver Creek Resource Area, administers all land involved. The area is contained on the Smith Mesa, Utah, 1980, 7.5' series topographic quadrangle.

Both the well site and an access route had been previously staked and archeologically surveyed in 1985 by personnel of Powers Elevation (O'Neil 1985). Berge Exploration had since requested a slight relocation of the well site. Because of severe and abrupt topographic relief the newly requested location could not be staked and the original location staked by Powers was sustained. During the resurvey of the area one archeological site was discovered and recorded that was inadvertently missed by the Powers survey. Since the site was located in and around a flagged road alignment an alternate route was selected that avoids the site. All old access flagging was removed. The well site was also resurveyed and produced negative results.

This report briefly describes the survey area, the methods used, the site discovered, and offers revised clearance recommendations. The reader is referred to the original survey report (O'Neil 1985) for additional information.



SMITH MESA, UTAH
7.5 SERIES

Berge Exploration's
North Virgin Mesa #1
Well Site

new access route
42WS2191

17°31'
17°30'
17°29'
17°28'
17°27'
17°26'
T 40 S
T 41 S

Black Wash

Ditch

14

18

24

19

20

26

25

30

29

35

34

31

32

44547

44823

45524

5000

5330

4745

4525 x

4510

4400

1:25,000

PHYSIOGRAPHY AND ENVIRONMENT

The project area is located on an eroded west facing bench approximately mid-slope between the rim of Smith Mesa and the floor of Dry Creek Canyon. Terrain ranges from undulating to abrupt, with a full range of slope angles present. Elevations range from 4460 to 4560' MSL.

The vegetative structure of the area is a pinyon pine - juniper climax association of considerable density. Major understory species include ephedra, yucca, manzanita, scrub oak, rabbit-bush, big sagebrush, and prickley pear. Steep north facing slopes host denser growth and more varied associations.

Sediments consist primary of residual sand on flatter surfaces, with sand to boulder size colluvium on slopes. Sandstone bedrock is exposed in the general area.

Present perennial water sources are found at a number of seeps and springs scattered throughout the slopes of Dry Creek Canyon. Major washes and arroyos carry water seasonally.

Avian, reptilian, and mammalian associations are consistent with those of the Upper Sonoran Life Zone throughout the American southwest.

SURVEY PROCEDURE

Prior to the initiation of the field a site file and literature review was conducted at the BLM - Cedar City District Office and through the Utah Division of History - Antiquities Section. The results of these reviews concluded that all of the proposed

access route and the originally selected well site had been archeologically surveyed by Powers Elevation (O'Neil 1985; BLM file #053-369). The well location requested by Berge Exploration was not located in the Powers survey area although the same access route would be used. No sites were recorded by the Powers survey; a number of recent ranching camps and features were noted by them.

The revisit to the area by Hibbets and Mr. Gerald Huddleston, surveyor, determined that the location requested by Berge was unsuitable for development because of topographic constraints; Berge elected to sustain the previously staked location.

While at that location an archeological site was discovered and recorded that had been inadvertently missed by the Powers investigation. The site is located ca. 15m east of the well site in a flagged and proposed access route. A new access route was selected some 250' north that avoids the site. This new route is ca. 400' in length and connects the well site with an existing access road. It was archeologically surveyed via four sinuous transects spaced at 15m intervals, effectively inventorying a corridor 200' in width. The well site was also resurveyed via 15m transects producing negative results. All old access flagging was removed.

The newly discovered site was recorded on appropriate IMACS site record forms, mapped, and photographed. No surface collections were made, and no subsurface probing or excavation was attempted.

SURVEY RESULTS

One archeological site was discovered and recorded by the investigation. The following section briefly describes the resource. More detailed information is contained on the site record forms submitted to the Division of State History and appropriate BLM offices.

Site No. 42WS2191

Description The site is situated on the crest and leading slopes of an elevated bench remnant on the west facing slope of Dry Creek Canyon. It is manifested by a diffuse nonpatterned scatter of lithic debris and flaked lithic tools. No concentrations of material per se were observed; however artifact density is variable. Several pieces of oxidized sandstone were observed. It is impossible to determine if these are culturally altered or the product of old forest fires. Observed tools include an Elko Side notched projectile point resharped as a drill or perforator, two possible Hawken Side Notched projectile points, and a chopper. Primary and secondary core reduction debris is the dominate debitage present. Material types include silicified wood, chert, chalcedony, and jasper.

SUMMARY AND RECOMMENDATIONS

On May 19, 1986, a possible new location for Berge Exploration's North Virgin Federal # 1 well site was visited by Mr. Barry N. Hibbets of La Plata Archeological Consultants, Inc. Since topography prohibited staking the location a nearby location originally staked and archeologically surveyed by Powers Elevation was sustained for development. Both project areas are located on land administered by the BLM - Beaver Creek Resource Area in Washington County, Utah.

While at the original location an archeological site was discovered and recorded that had been inadvertently missed by the Powers survey. The site (42WS2191), a broad lithic scatter, is

located ca. 15m east of the well site and in a proposed access route. A new access route ca. 400' in length and 250' north of the original route was flagged and archeologically surveyed, and misses 42WS2191. The route extends between the well site and an existing road. The well site was also resurveyed for cultural resources; no additional sites were encountered.

Should subsurface deposits be encountered during the construction stages of this project work should be halted and the BLM - Cedar City District Archeologist notified. Measures will then be taken to evaluate the nature and significance of the resource. Given this stipulation, and providing 42WS2191 is strictly avoided by construction, archeological clearance for Berge Exploration's North Virgin Federal # 1 well site and the 400' of new access road is recommended.

REFERENCES CITED

O'Neil, Brian P. 1985 An Archeological Survey of P & M Petroleum Management's Chad Meeks # 1 Camcorchan, Washington County, Utah. Powers Elevation, Denver. Cedar City BLM file #053-369.

72303

080805

OPERATOR Bege Exploration, Inc DATE 6-24-86

WELL NAME N. Virgin Imperial Fed. 19-1

SEC SW SW 19 T 40S R 11W COUNTY Washington

43-053-30047
API NUMBER

Fed
TYPE OF LEASE

CHECK OFF:

PLAT

BOND

NEAREST WELL

LEASE

FIELD

POTASH OR OIL SHALE

PROCESSING COMMENTS:

Exception requested - (Unit Pending (North Virginia))
No other wells within 920'
Need water permit

APPROVAL LETTER:

SPACING: 203 _____ UNIT _____

302

_____ CAUSE NO. & DATE _____

302.1

STIPULATIONS:

1- Water

Expend
11-18-86

102118

FILING FOR WATER IN THE STATE OF UTAH

COPY

Rec. by BSS
Fee Paid \$ 17.00
Platted 207158
Microfilmed 8-19-86
Roll # 1093 (approved)

APPLICATION TO APPROPRIATE WATER

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

WATER USER CLAIM NO. 81 - 2766

APPLICATION NO. T61874

1. PRIORITY OF RIGHT: ,

FILING DATE: July 1, 1986

2. OWNER INFORMATION

Name: Berge Exploration Inc. c/o PERMITCO INC.
Address: P. O. Box 44065, Denver, CO 80201

3. QUANTITY OF WATER: 3.0 acre feet (Ac. Ft.)

4. SOURCE: North Creek DRAINAGE: Virgin River

POINT(S) OF DIVERSION:

COUNTY: Washington

(1) S. 2349 feet, W. 1707 feet, from the NE Corner of Section 12,
Township 41 S, Range 12 W, SLB&M

Description of Diverting Works: Portable pump & truck

43.053.30047

COMMON DESCRIPTION: Near Virgin, Utah

5. NATURE AND PERIOD OF USE

Oil Exploration From August 1 to November 1.

6. PURPOSE AND EXTENT OF USE

Oil Exploratio: Oil and gas drilling operation.

7. PLACE OF USE

The water is used in all or parts of each of the following legal subdivisions.

TOWN RANGE SEC	North East Quarter				North West Quarter				South West Quarter				South East Quarter				
	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	
40 S 11 W 19																	X

All locations in Salt Lake Base and Meridian

19-1

EXPLANATORY

MICROFILMED

Appropriate

ORAL APPROVAL TO PLUG AND ABANDON WELL

102301

Dreg.

Operator Berge Expl. Representative Mark Seann yellow (SH)
 Well No Fed 19-1 Location 1/4 1/4 Section 19 Township 40S Range 11W
 County Washington Field W/C State UT
 Unit Name and Required Depth North Virgin Base of fresh water sands _____

T.D. 5267 Size hole and Fill per sack " _____ Mud Weight and Top _____ #/gal. _____

Casing Size	Set At	Top of Cement	To Be Pulled	Plugging Requirements		
				From	To	Sacks Cement
<u>13 3/8</u>	<u>450</u>	<u>Surface</u>	<u>None</u>	<u>@ 4224'</u>		<u>35 Sks.</u>
<u>8 7/8</u>	<u>2450</u>	<u>15 Sks</u>	<u>None</u>			
<u>7 1/4</u>	<u>2700</u>	<u>Base?</u>	<u>Shows</u>	<u>Cement in 7" Csg.</u>		
				<u>@ 2650' w/ 15 Sacks on top.</u>		
<u>Coconino 3200'</u>						
<u>Pacow 4224'</u>			<u>No Shows</u>	<u>@ Surface</u>		<u>25 Sks.</u>
<u>Collville 4910'</u>						
<u>TJ 5267'</u>						
				<u>Mill CK annulus between 8 7/8" & 13 3/8" (open hole below) and pump cement if necessary.</u>		

REMARKS

DST's, lost circulation zones, water zones, etc., _____

1 DST - no show.
Drld w/ Air. Fill hole w/ 9# mud to plug

Approved by RJ Firth Date 10/20/86 Time 9AM a.m. p.m.

Federal representatives not available for consultation for P & A instructions.



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

August 5, 1986

Berge Exploration, Inc.
c/o Permitco, Inc.
P. O. Box 44065
Denver, Colorado 80201-4065

Gentlemen:

Re: Well Name: N. Virgin Imperial Federal 19-1 - SW SW Sec. 19, T. 40S, R. 11W
1315' FSL, 1225' FWL - Washington County, Utah

Approval to drill the referenced well is hereby granted in accordance with Rule 302.1, Oil and Gas Conservation General Rules, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water as required by Chapter 3, Title 73, Utah Code Annotated.

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

1. Spudding notification to the Division within 24 hours after drilling operations commence.
2. Submittal to the Division of completed Form OGC-8-X, Report of Water Encountered During Drilling.
3. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 293-7695, or R. J. Firth, Associate Director, (Home) 571-6068.
4. Compliance with the requirements and regulations of Rule 311.3, Associated Gas Flaring, Oil and Gas Conservation General Rules.

Page 2

Berge Exploration, Inc.

c/o Permitco, Inc.

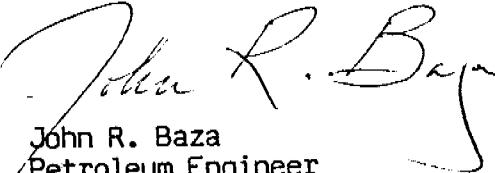
Well Name: N. Virgin Imperial Federal 19-1

August 5, 1986

5. Prior to commencement of the proposed drilling operations, plans for toilet facilities and the disposal of sanitary waste at the drill site shall be submitted to the local health department having jurisdiction. Any such drilling operations and any subsequent well operations must be conducted in accordance with applicable State and local health department regulations. A list of all local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of General Sanitation, telephone (801) 533-6163.
6. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-053-30047.

Sincerely,



John R. Baza
Petroleum Engineer

as

Enclosures

cc: Branch of Fluid Minerals

D. R. Nielson

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

081823

5. LEASE DESIGNATION AND SERIAL NO.	U-29259
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	N/A
7. UNIT AGREEMENT NAME	N. VIRGIN UNIT
8. FARM OR LEASE NAME	Currently pending
9. WELL NO.	N. Virgin Imperial Federal
10. FIELD AND POOL, OR WILDCAT	19-1
11. SEC., T., R., M., OR BLM. AND SURVEY OR AREA	Wildcat
12. COUNTY OR PARISH	Sec. 19, T40S - R11W
13. STATE	Washington Utah

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
OIL WELL GAS WELL OTHER
SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
Berge Exploration, Inc. c/o PERMITCO INC. 303/322-7878

3. ADDRESS OF OPERATOR
P.O. Box 44065 Denver, CO 80201-4065

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
At surface
1315' FSL and 1225' FWL
At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
8 miles north of Virgin, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)	5 feet	16. NO. OF ACRES IN LEASE	2261.35	17. NO. OF ACRES ASSIGNED TO THIS WELL	40
---	--------	---------------------------	---------	--	----

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	none	19. PROPOSED DEPTH	4400'	20. ROTARY OR CABLE TOOLS	Rotary
--	------	--------------------	-------	---------------------------	--------

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
4546' GR

22. APPROX. DATE WORK WILL START*
Upon approval of this application.

23. PROPOSED CASING AND CEMENTING PROGRAM

RECEIVED
AUG 15 1986

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. SIGNED: [Signature] TITLE: Consultant for Berge Exploration, Inc. DATE: 6/16/86

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY: [Signature] TITLE: District Manager DATE: 8-7-86
CONDITIONS OF APPROVAL, IF ANY:

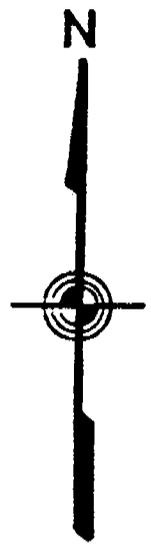
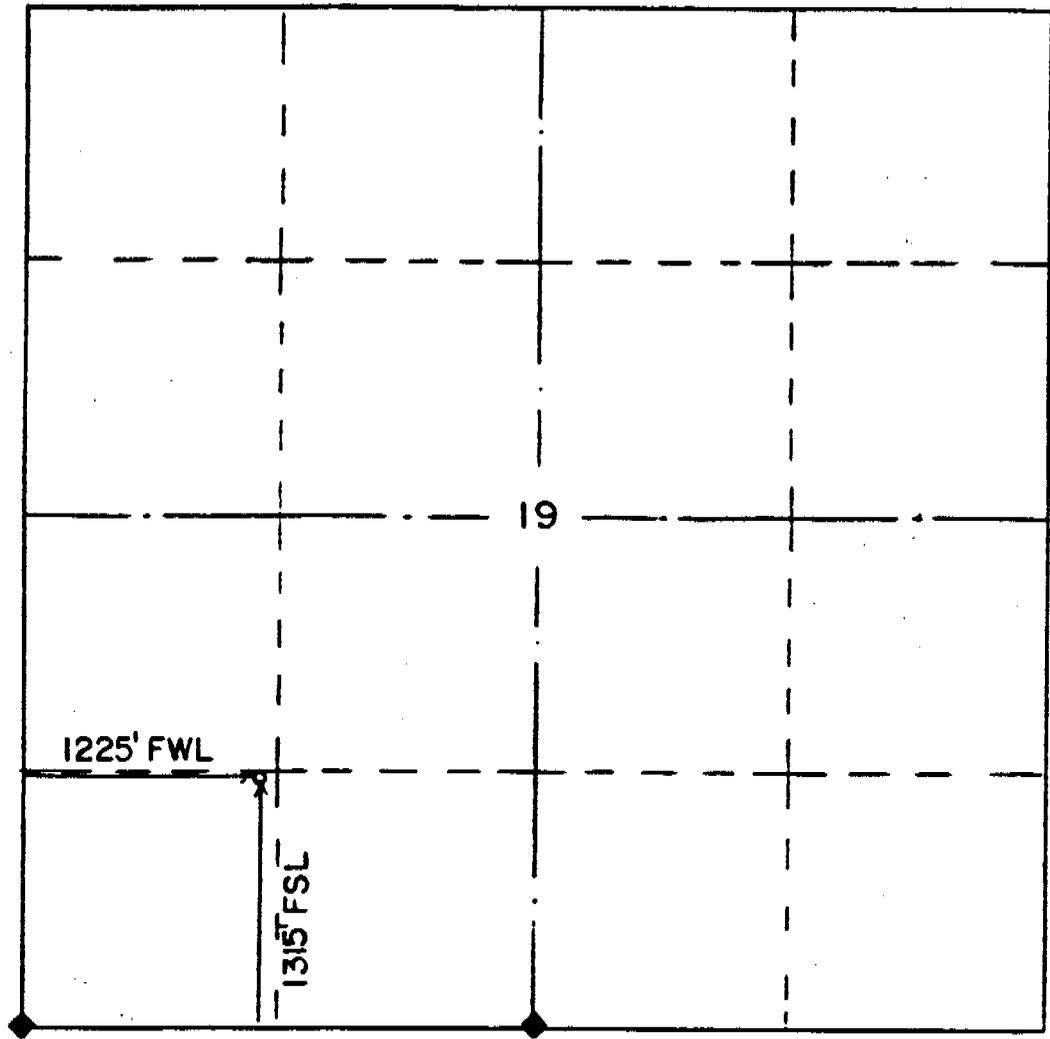
NOTICE OF APPROVAL

CONDITIONS OF APPROVAL
ATTACHED TO OPERATORS
COPY

FLAIRING OR VENTING
OF GAS IS SUBJECT TO
NTL4-A DATED 1/1/80

WELL LOCATION AND ACREAGE DEDICATION PLAT

R11W.



1"=1000'

T.40S.

Operator BERGE EXPORATION		Well name NORTH VIRGIN FEDERAL "1	
Section 19	Township 40 SOUTH	Range 11 WEST	Meridian SLM
Footages 1225' FWL - 1315' FSL		County/State WASHINGTON, UTAH	Elevation 4546'
Formation	Dedicated Acreage	Requested by LISA GREEN	
<p>The above plat is true and correct to the best of my knowledge and belief.</p> <div style="text-align: center;"> <p><i>Gerald G. Middleston</i> Gerald G. MIDDLESTON, L.S.</p> </div>			

EXPLANATORY

The following additional facts are set forth in order to define more clearly the full purpose of the proposed application:

#5. Estimated period of time to drill this oil/gas well should not exceed 30 days from commencement of drilling operations. The actual spud date has not been determined, but will be prior to August 31, 1986 due to a Federal lease expiration.

#6. The surface is owned by the Bureau of Land Management, the minerals are owned by the Federal Government and the extraction rights to Federal Lease #U-29259 are owned by Berge Exploration, Inc.

cc: 3 - Utah Division of Water Rights - Cedar City, Utah
1 - Berge Exploration, Inc. - Denver, CO
1 - Matt Rohrett - Lakewood, CO

(Use page 4 if additional explanatory is needed.)

The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purpose herein described

Lisa L. Green Signature of Applicant* Agent for:
Berge Exploration, Inc.

*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its proper officer, or in the name of the partnership by one of the partners, and the names of the other partners shall be listed. If a corporation or partnership, the affidavit below need not be filled in. If there is more than one applicant, a power of attorney, authorizing one to act for all, should accompany the Application.

DECLARATION OF CITIZENSHIP

STATE OF UTAH, }
County of } ss

On the day of 19....., personally appeared before me, a notary public for the State of Utah, the above applicant who, on oath, declared that he is a citizen of the United States, or has declared his intention to become such a citizen.

My commission expires:

(SEAL)

Notary Public

TEMPORARY

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

API #43-053-30047

NAME OF COMPANY: BERGE EXPLORATION

WELL NAME: NORTH VIRGIN IMPERIAL FED. 19-1

SECTION SW SW 19 TOWNSHIP 40S RANGE 11W COUNTY Washington

DRILLING CONTRACTOR VECO

RIG # 2

SPUDDED: DATE 8-21-86

TIME 4:00 PM

How Rotary

DRILLING WILL COMMENCE _____

REPORTED BY Carl Spreng

TELEPHONE # (303) 426-1086

DATE 8-22-86 SIGNED JRB

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Budget Bureau No. 1004-013
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.
U-29259

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

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.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	7. UNIT AGREEMENT NAME North Virgin
2. NAME OF OPERATOR Berge Exploration, Inc.	8. FARM OR LEASE NAME North Virgin Imperial Fed.
3. ADDRESS OF OPERATOR 7100 North Broadway, Ste. 2-L; Denver, CO 80221	9. WELL NO. 19-1
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 1315' fsl X 1225' fwl	10. FIELD AND POOL, OR WILDCAT wildcat
14. PERMIT NO.	11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 19, T40S-R11W
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 4546' (GR)	12. COUNTY OR PARISH Washington
	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 <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input checked="" type="checkbox"/>	(Other) <input type="checkbox"/>	(Other) <input type="checkbox"/>

(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.)*

Berge Exploration proposes the following changes to the casing & cementing program:

HOLE SIZE	CASING SIZE	WEIGHT/FT.	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13-3/8"	48#	450'	850 sx or sufficient to circulate to surface
7-7/8"	5 1/2"	15.5#	4400'	150 sx or sufficient to cover zones of interest

(If necessary the 7-7/8" hole will be reamed to 12 1/2" and 9-5/8" intermediate casing set.)

RECEIVED
AUG 25 1986

DIVISION OF
OIL, GAS & MINING

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

SIGNED W. Carl Spreng TITLE Geologist DATE August 15, 1986

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____

CONDITIONS OF APPROVAL, IF ANY: _____

ACCEPTED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

Federal approval of this action is required before commencing operations

*See Instructions on Reverse Side
DATE: 8-26-86
BY: [Signature]

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

SUBMIT IN TRIPLICATE
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

022834

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.)

<p>1. <input type="checkbox"/> OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER</p> <p>2. NAME OF OPERATOR Berge Exploration, Inc.</p> <p>3. ADDRESS OF OPERATOR 7100 North Broadway, Ste. 2-L; Denver, Co 80221</p> <p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 1315' FSL X 1225' FWL</p> <p>14. PERMIT NO.</p>	<p>5. LEASE DESIGNATION AND SERIAL NO. U-29259</p> <p>6. IF INDIAN, ALLOTTEE OR TRIBE NAME</p> <p>7. UNIT AGREEMENT NAME North Virgin</p> <p>8. FARM OR LEASE NAME North Virgin Imperial Fed.</p> <p>9. WELL NO. 19-1</p> <p>10. FIELD AND POOL, OR WILDCAT wildcat</p> <p>11. SEC., T., E., M., OR BLK. AND SURVEY OR AREA Sec. 19, T40S-R11W</p> <p>12. COUNTY OR PARISH Washington</p> <p>13. STATE Utah</p> <p>15. ELEVATIONS (Show whether DF, NT, GR, etc.) 4546' (GR)</p>
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Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>Spudding well</u> <input checked="" type="checkbox"/>	
(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.) *

The North Virgin Imperial Federal #19-1 was spudded at 4:00 p.m. on August 21st, 1986.

RECEIVED
AUG 25 1986
DIVISION OF
OIL, GAS & MINING

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

SIGNED Thomas P. Berry TITLE Geologist DATE 8-22-86

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
 (Other instructions on re-
 verse side)

Budget Bureau No. 1004-0135
 Expires August 31, 1985

092900

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.)

<p>1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/></p> <p>2. NAME OF OPERATOR Berge Exploration, Inc.</p> <p>3. ADDRESS OF OPERATOR 7100 North Broadway, Suite 2L, Denver, Colorado 80221</p> <p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface 1,315' FSL, 1,225' FWL Section 19</p>	<p>5. LEASE DESIGNATION AND SERIAL NO. U- 29259</p> <p>6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A</p> <p>7. UNIT AGREEMENT NAME North Virgin Unit</p> <p>8. FARM OR LEASE NAME North Virgin Imperial Fed.</p> <p>9. WELL NO. #1-19</p> <p>10. FIELD AND POOL, OR WILDCAT Wildcat</p> <p>11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 19-T40S-R11W</p> <p>12. COUNTY OR PARISH Washington</p> <p>13. STATE Utah</p>
<p>14. PERMIT NO.</p>	<p>15. ELEVATIONS (Show whether DF, ST, GR, etc.) 4,546' GR, 4,556' RKB</p>

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>30 day progress report</u> <input checked="" type="checkbox"/>	
(Other) <input type="checkbox"/>		(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.)*

Please refer to attached copy of the daily drilling reports for the above well for details of operations during the last 30 days.

13 3/8" 48# H-40 STC casing was set at 445' and cemented to surface with 228 sx Lite cement, followed by 175 sx Class "A" cement.

8 5/8" 24# J-55 STC casing was set at 2,422' and cemented with 150 sx Class "A" cement.

RECEIVED
 SEP 25 1986

DIVISION OF
 OIL, GAS & MINING

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

SIGNED Carl Spreng TITLE Manager- Special Projects DATE September 19, 1986
 (This space for Federal or State office use)

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

*See Instructions on Reverse Side

DRILLING REPORT

PROSPECT: NORTH VIRGIN PROSPECT
Well Name: Imperial Federal #19-1
Location: SWSW-19-40S-11W
Washington County, Utah
Operator: Berge Exploration, Inc.

- 8/18/86: Road completed. Location 90% completed. Rig partially moved & stacked at Virgin.
- 8/20/86: Move in and rig up.
- 8/22/86: 6:00 a.m. - Move in & rig up, Veco #2 rig, 8/21/86. Drilled mouse & rat hole with air, spudded @ 4:00 p.m., 8/21/86. Drilled 312' in 11-3/4 hrs. with air mist. 30,000# weight on bit (WOB), 125 revolutions per minute (RPM), 200 PSI compressor pressure. Surveys: 3/4° @ 90'; 1° @ 180'; 1/2° @ 270'.
- 8/23/86: Depth @ 455'. Drld 143' last 24 hrs. Reaming to 17 1/2" hole @ 300'. Drld 12 1/2" pilot hole to 455' with air mist. Tripped out; pick up (PU) 17 1/2" bit opened pilot hole to 17 1/2" from 0-100'. Tripped out of hole (TOH); PU shock sub; opened pilot hole to 17 1/2" from 180'-300'. Mud wt. 9.6; viscosity (VIS) 52; water loss (wl) 14.2; 12,000# WOB; 125 RPM; 300 psi pump pressure (pp). Survey: 1° @ 360'.
- 8/24/86: Depth - 455'. Drld 0' last 24 hrs. Wait on cement (WOC). Reamed 300' to 445' w/17 1/2" bit. TOH. Rig up (RU) & ran 12 joints (jts) 13-3/8" 48# H-40 STC new casing (csg). Landed @ 446' KB, float collar @ 425'. Ran 2 centralizers on 1st & 3rd jts, float shoe & baffle plate. Rig down (RD) csg crew. RU Halliburton. Cement (cmt) w/228 sacks (sx) Lite +3% salt, .25#/sack flocele. Tailed in w/175 sx Class A cmt w/3% CaCl₂, .5#/sack flocele. Good circulation (circ) through out job. Circ 100 sx cmt to surface. Plug down (PD) @ 2:20 a.m., 8/24/86. Float held. WOC - 3 1/2 hrs. Survey: 3/4° @ 455'.
- 8/25/86: Depth - 455'. Drld 0' last 24 hrs. Drlg out shoe jt w/air mist. Finished WOC; 6 hr total. Cut off csg. Weld on 12" x 3000 psi csg head. Nipple up (NU) crossover spool, BOP stack & rotating head. Pressure tested pipe & blind rams to 1000 psi. Held ok. Inspected drl collars while tripping in hole (TIH) w/7-7/8" bit #1; found 4 cracked collars. Tagged cmt inside csg @ 415'. Unloaded hole w/air mist.
- 8/26/86: Depth - 990'. Drld 535' last 24 hrs. TIH w/7-7/8", Bit #2. Finished drlg cmt; blew hole dry. Air drld 455'-565'. Hole toodamp to continue dust drlg. Converted to air mist; drld 565'-990'. Trip for bit #2. Changed out cracked bottom hole drill collar (DC) & cracked kelly sub. TIH w/bit #2. Drlg in Moenkopi fm. Mud wt. - air mist; 16,000# WOB; 80 RPM; 220 psi compressor pressure (cp). Survey: 1 1/4°-700'; 1 1/4°-959'.

Operator: Berge Exploration, Inc.

- 8/27/86: Depth - 2264'. Drld 1274' last 24 hrs. Operations: working stuck drl pipe. Drld 990'-2264' w/air mist. Had wtr entry of estimated 100 BPH @ 1925'. Wtr increased to estimated 200 BPH throughout night. Stuck pipe while making connection @ 2264'. Mud wt.-air mist; 30,000# WOB; 100 RPM; 300 psi cp; 600 psi while working stuck pipe. Surveys: 1½° @ 954'; 2° @ 1270'; 2° @ 1420'; 1½° @ 1975'. Drlg in Moenkopi. Timpowweep Mbr. top @ 1925'. Scattered sample shows - streaming cuts w/pale yellow fluorescence.
- 8/28/86: Depth - 2264'. Drld 0' last 24 hrs. Op: working on stuck drl pipe. Could not rotate or move pipe up or down. Pulled maximum 80,000# over string weight (150,000# total pull). Mixed & pumped 400 bbl mud. Did not free pipe. Pumped 2500 bbl wtr from reserve pit, could not load hole or circulate. Timpowweep & Kaibab formations have produced estimated 8000 bbl wtr while drilling & circulating w/air. Drill pipe stretch calculation indicates pipe is stuck at or near bit. No evidence of Moenkopi sloughing. WO Halliburton. RU Halliburton. Acidize w/500 gals 15% HCl acid. Caught pressure @ 23 bbl displacement indicating that fluid level in well is @ 1600'. This converts to about 350 psi formation pressure. Able to move pipe up hole about 20' before sticking again. Acidized w/additional 500 gals 15% HCl. Moved pipe down hole about 2'. Shut down. Waiting for 3,000 gals 28% HCl. Can rotate pipe, but cannot move up or down. Permian Kaibab sample top 2015', limestone w/scattered sample shows w/cut & fluorescence.
- 8/29/86: Depth - 2264'. 0' drld last 24 hrs. Working on stuck drl pipe. WO Halliburton to deliver acid. Pumped 1000 gals 28% HCl acid & freed pipe enough to cause 3' section of free travel, but could not move up or down beyond certain point. Could not drl up or down by rotating drl pipe w/slips. Pumped additional 800 gals 28% HCl while aerating to try to bring acid up around drill collars (DC) w/no results. Worked pipe up & down all night with as high as 150,000# pull. Acts like a ledge or block of rock wedged above bit. WO McCullough to back off drl pipe.
- 8/30/86: Depth - 2264'. 0' drld last 24 hrs. Op: Fishing; jarring on stuck DC. Last 24 hrs: RU surface jars. Jarred down 1' in 2 hrs. RD surface jars. RU McCullough. Ran outside backoff at 372'. TOH, remove string float. TIH. Screwed into DP. Ran pipe recovery log. Pipe stuck from 2183'-2186' only, totally free above and below this point. (Supports

Drilling Report
Imperial Federal #19-1

Operator: Berge Exploration, Inc.

8/30 (Cont'd)

theory that a segment of formation broke off or slid into the wellbore and wedged the drill collars against side of hole at that spot. Geolograph shows very fast drlg break from 2183'-2185' drld at 3:00 a.m. 8/27/86. This segment moved into the wellbore and stuck the DP @ 5:30 a.m. 8/27/86) Ran inside back-off at 2147'. TOH. RU & TIH w/fishing jars, bumper sub, accelerator sub, screwed into fish. Have jarred fish up the hole approximately 3' in 90 minutes.

8/31/86: Depth - 2264'. 0' drld last 24 hrs. Present op: running free-point to back off DCs. Last 24 hrs: RU McCullough. Ran pipe recovery log. Still shows stuck from 2183'-2186'. Ran bridge plug. Set in bottom of DC at 2200'. Ran string shot, backed off kelly at 47', replaced w/jt of DP. Filled DP w/wtr (bridge plug holding). Perf'd DC @ 2182'-2184' w/4 perforations. RU Halliburton, pumped wtr into perfs ok. RD Hallibutron. Backed out jt of DP @ 47'. Attempt to screw into DP w/kelly, but could not. TOH, recovered top half of twisted off DP jt. TIH w/overshot, caught fish, backed off w/string shot, replaced w/new jt of pipe. PU on drill string, no overpull at bit. TOH, DP had come unscrewed at 2147'. TIH w/DP, washed 25' fill from top of fish, screwed into fish. RU McCullough, found fill material inside DC @ 2147'. Spudded to 2184'. Re-perf'd DC @ 2182'-2184'. RU Halliburton, began jarring on fish while pumping 1200 gals 28% HCl through perfs opposite stuck point. Pressure dropped from 1400 psi to 0 psi when acid hit formation, but could not move fish w/jars.

9/1/86: Depth - 2264'. 0' drld last 24 hrs. Present op: washing over fish w/washpipe @ 2239'. Last 24 hrs: Ran free-point. DC @ 2178' still free. Ran string shot, backed off DC @ 2178'. TOH, elevators broke. SD. 8 hrs rig repair while new elevators were flown to rig. Finished TOH. PU 2 jts washpipe, jet sub. TIH w.washpipe. Washed over fish (2 DCs, bit) from 2178'-2239' w/aerated water.

9/2/86: Depth - 2264'. 0' drld last 24 hrs. Present op: fishing; circ @ TD w/washpipe. Last 24 hrs: Washed over fish. TOH w/washpipe. Hole very tight 1st 60' off bottom. TIH w/overshot & 5-7/8" grapple. Could get over fish, but could not catch. Knocked fish 15' to bottom of hole. TOH w/overshot. Re-dressed overshot w/6" grapple. TIH w/overshot. Caught fish. Jarred w/160,000# for 1 hr. Could not move fish at all. Released overshot, TOH. PU washpipe, TIH. Wash over fish again. Circ w/aerated wtr, bring up lots of drill cuttings.

Drilling Report
Imperial Federal #19-1

Operator: Berge Exploration, Inc.

- 9/3/86: Depth - 2264'. Present op: Washover fish w/washpipe. Last 24 hrs: TOH. LD washpipe; TIH w/overshot, bumper sub, jars, accelerator sub. Caught fish, could not jar free. Hole suddenly stuck DP while jarring on fish. Release fish, work fishing tool free, TOH. Found that DP rubber had dropped down hole. RU McCullough, located wiper rubber on ledge @ 445'. Constructed homemade spear out of junk DP & cable. TIH w/spear, caught wiper rubber, TOH, rec same. PU washpipe, TIH. Washover fish 2202'-2264'. Last 40' reamed hard.
- 9/4/86: Depth - 2264'. Present op: Washing to bottom w/Bit #3. Last 24 hrs: washed over fish @ 2264'. TOH, 4 stands. Circ 3 hrs. Washover fish again. Circ 1 hr. TOH, LD (lay down) washpipe. TIH w/overshot, jars, bumper sub, accelerator. Caught fish. TOH. RECOVERED ALL FISH!! LD fishing tools. PU & TIH w/7-7/8" Bit #3. Washing to bottom.
- 9/5/86: Depth - 2315'. Drld 51' last 24 hrs. Present op: Reaming 7-7/8" hole to 10-5/8" hole at 730'. Last 24 hrs: washed to bottom w/7-7/8" Bit #3. Circ & condition to clean hole @ 2264'. Still getting lots of gravel in returns. Drld 51' to 2315'. Hole very tight on both connections w/much fill & stuck pipe. Average 2-3 hrs per connection. TOH, PU & TIH w/10-5/8" Bit #1. Reamed 455' to 730'. Will open hole to 10-5/8" & attempt to squeeze cmt flowing gravel zones from 2180'-2300'.
- 9/6/86: Depth - 2315'. 0' drld last 24 hrs. Present op: Reaming @ 1437'. Last 24 hrs: reamed 7-7/8" hole to 10-5/8" hole from 730'-1437' w/air mist. Mud wt. - air mist; WOB 10,000#; RPM - 90; circ air pressure - 240 psi.
- 9/7/86: Depth - 2315'. Present op: Reaming 10-5/8" hole @ 1839'. Last 24 hrs: Reamed 1437'-1722' w/air mist. Began making estimated 200 bbl wtr/hr. TOH. PU 8" DC, 10-5/8" Bit #2; jars & jet sub. TIH, reamed 1722'-1839' w/aerated wtr. WOB - 10,000#; RPM 90; 400 psi.
- 9/8/86: Depth - 2315'. Present op: WOC on cmt plug #1. Last 24 hrs: Reamed 10-5/8" hole 1839'-2088'. Had tight connection & 15' fill while making connection. Circ & condition 1 hr. Recover gravel & rubble & greatly inc wtr flow. TOH. TIH w/drill pipe open-ended to 2088'. RU Halliburton. Pumped 273 gal Flo-Check followed by 50 sx Thixotropic cmt w/12% Cal-seal, 3% CaCl₂. Cmt in place @ 12:45 a.m. 9/8/86. TOH w/drill pipe. WOC.

Drilling Report
Imperial Federal #19-1
Page Five

Operator: Berge Exploration, Inc.

- 9/9/86: Depth - 2315'. 0' drld last 24 hrs. Present op: WOC for plug #2. Last 24 hrs: Finished WOC for plug #1, 8 hrs total. TIH to 2088', did not hit cmt. Reamed 2088'-2210' w/10-5/8" bit. Rec some cmt in samples. Hole unloaded lots of gravel & rock & had greatly inc wtr flow @ 2183'. Reamed & worked pipe 5' at a time from 2183'-2210' until hole is clean. TOH. TIH w/drl pipe open-ended to 2193'. Spotted 420 gals "Flo-Check" followed by 100 sx cmt as before. Cmt in place @ 4:15 a.m. 9/9/86. WOC.
- 9/10/86: Depth - 2315'. 0' drld last 24 hrs. Present op: Pump excess wtr from reserve pit down wellbore & into formation. Last 24 hrs: WOC for 6 hrs. TIH 15 stands. Tag top of cmt @ 2155' (pumped 75 sx into formation, left 25 sx in wellbore). TOH. TIH w/10-5/8" bit, DC, jars & jet sub. Drld cmt from 2155'-2210'. Reamed 2210'-2305', 5' at a time. Had immediate inc in wtr flow, but no fill on connections. Pumped excess wtr down wellbore & into Kaibab formation. Mud wt - aereated wtr; WOB 10,000#; RPM 90; pp 400 psi.
- 9/11/86: Depth - 2315' (0' drlg); 20 days from spud. Drlg cement plug #3 @ 2274'. Last 24 hrs: TIH reamed 10-5/8" hole to 2305', TOH; TIH w/DP open ended to 2289'; spotted cement plug #3 w/420 gallons Flo-check & 100 sx cement as before; cement in place @ 1:45 p.m. on 9/10/86; TOH 15 stands; WOC 6 hrs; TIH & tag top of cement @ 2221' (75 sx in formation & 25 sx in wellbore) TOH; TIH w/bit & drlg assembly; pumped wtr from reserve pit downhole 5 hrs; TIH drld cement 2221'-2274'; MW aereated wtr; WOB 2000#; RPM 70; pumper pressure 400 PSI.
- 9/12/86: Depth - 2400'. Drld 85' last 24 hrs. Present op: washing, reaming & working tight hole. Last 24 hrs: Drld cmt to 2305'. Reamed 10-5/8" hole to 2315'. Began drld ahead w/aereated wtr. Drld thru cavern @ 2326'-2332'. Drld ahead 5' at a time while checking for fill. Worked tight hole. Had intermittent partial returns circulating w/air mist only. Drld to 2375'. Hit fractures. Pulled 120,000# while picking up off bottom. TOH. Put on 2nd jet sub 500' above 1st jet sub. TIH w/10-5/8" Bit #3. Reamed under guage hole from 2185'-2375'. Had full returns w/aereated wtr down to 2325'. Lost return in cavern. Drld, washed, reamed & worked tight hole to 2400'. Have spent 9 hrs on last 60', w/50,000# drag when picking up off bottom, 20' of fill when trying to return to bottom.

Drilling Report
Imperial Federal #19-1
Page Six

Operator: Berge Exploration, Inc.

- 9/13/86: Depth - 2400'. 0' drld last 24 hrs. Present op: WOC plug #5. Last 24 hrs: Washed & reamed w/aerated wtr & poor returns. Could not clean out 20' of fill. Got stuck, worked free, TOH. LD jet subs. Unloaded & racked 48 jts 8-5/8" csg. Mixed 300 bbls mud. TIH. Tagged fill @ 2379'. Washed & reamed several times to 2396'. Hole still very tight at times & almost stuck. Lost all mud w/no returns. TOH. TIH w/drill pipe open-ended. Tagged fill @ 2379'. Washed to 2398'. RU Halliburton. Cmt plug #4 w/100 sx as before. Cmt in place @ 10:45 p.m. TOH 15 stands. WOC 5 hrs. TIH. Tagged top of cmt @ 2375' (91 sx in formation, 9 sx in wellbore). Cmt plug #5 w/50 sx @ 2350'. Cmt in place @ 4:45 a.m. WOC 1 hr.
- 9/14/86: Depth - 2410'. 10' drld last 24 hrs. Present op: TOH w/bulldog bailer. Last 24 hrs: finished WOC (8 hrs total). TIH w/bit to 1900'. Jetted reserve pit full of wtr using compressers. Continue TIH. Tagged top of cmt @ 2375'. Began drlg w/wtr & no returns. Drld cmt from 2375'-2400' w/no problems. Drld 10' new hole & almost stuck. Worked free in 1 hr. TOH. Appears to be rock or ledge @ 2379'. TIH w/bulldog bailer & 7-7/8" bit. Tagged @ 2379'. Worked bailer, knocked rock to bottom of hole. Stroked bailer, but could not make hole. TOH w/bailer. Found hole in drl pipe 50' above bailer. Rec 5' of sugar sand & clay inside bailer.
- 9/15/86: Depth - 2440'. 30' drld last 24 hrs. Present op: TOH w/bit prep to PU bailer & globe basket. Last 24 hrs: WO globe basket & tools to arrive from Vernal, Utah. On location @ 6:30 p.m. TIH w/10 1/2" globe basket. Cleaned out w/globe basket to 2410' w/wtr & no returns. Few tight spots but nothing bad. TOH. Rec 2 hard-hat-sized rocks in globe basket. TIH w/10-5/8" bit. Drld 2410' to 2440'. Hole very tight & almost stuck. Took 4 hrs to drl 30' & work back out 40' into free hole.
- 9/16/86: Depth - 2440'. 0' drld last 24 hrs. Present op: WOC for plug #6. Last 24 hrs: Finished TOH. PU globe basket & bulldog bailer. TIH, hit bridges @ 2086', 2236', drop thru. Tagged fill @ 2398'. Could make 1' of hole, then would lose it when picking up off bottom. TOH w/bailer, rec assorted rocks ranging from 1" to 6" in diameter & about 2 qts of clay. WO Halliburton to transport "Flo-Check" from Evanston, WY. On location @ midnight. TIH w/DP open-ended to 2398'. Washed to 2430' in 2 hrs. Cmt plug #6 w/500 gals Flo-Check, 100 sx cmt as before. TOH w/DP. WOC. Cmt in place @ 2:45 a.m.

Drilling Report
Imperial Federal #19-1
Page Seven

Operator: Berge Exploration, Inc.

- 9/17/86: Depth - 2440'. Present op: Drlg out cmt plug #7. Last 24 hrs: Finished WOC (8 hrs total). TIH to 1900'. Jetted reserve pit full of wtr w/compressors. Continue TIH, tagged top of cmt @ 2395'. Drld cmt to 2410'. Had 10,000# drag & 5' fill after picking up off bottom. TOH. TIH w/drl pipe open-ended to 2410'. Pump plug #7 w/500 gals "Flo-Check" & 100 sx cmt as before. TOH. Cmt in place @ 6:45 p.m. WOC 11 hrs. TIH, tag top of cmt @ 2373'. Drld cmt to 2410'. Prep to log.
- 9/18/86: Depth - 2440'. Present op: TIH w/10-5/8" concave mill on DP. Last 24 hrs: TOH w/10-5/8" bit. Made guage ring run w/10 1/2" globe basket, no tight spots. WO Schlumberger. RU & run DIL/SFL/SP/GR from 2419' to 445'. EPT tool failed, did not run. BHT 120°. Fluid level @ 1448'. Had several intervals between 2050'-2150' & 2320'-2380' in excess of 25" diameter (max. caliper measurement = 25"). RD Schlumberger. RU csg crew & run 53 jts 8-5/8" 24# J-55 STC csg, external csg packer, guide shoe, stopped @ 2198'. Spudded, rotated, circ to 2212', but would go no further. TOH, LD all csg. Leading edge of packer appeared to have been wedged into a ledge. PU & TIH w/10-5/8" mill.
- 9/19/86: Depth - 2440'. Present op: Drlg shoe jt in 8-5/8" csg. Last 24 hrs: TIH w/10-5/8" mill to 2416'. Did not hit anything. TOH. LD mill. WO Halliburton. RU & ran 58 jts 8-5/8" 24# J-55 STC csg, landed @ 2422'. RU Halliburton, cmt'd w/150 sx Class A, 2% CaCl₂, 1/4# Flocele/sx. No returns throughout job, plugged down @ 9:02 p.m. 9/18/86. Bumped plug w/200 psi. Float held. Nipple down BOP stack. Set slips, cut off csg. Nipple up BOP stack & flowlines. Pressure test 1000 psi, OK. TIH w/7-7/8" bit, staged @ 500', 1100', 1700', & 2300' unloading wtr from csg w/air. Tag cmt inside csg @ 2409'.
- 9/20/86: Depth - 2461'. 21' drld last 24 hrs. Present op: mixing mud & LCM. Last 24 hrs: Drld shoe jt w/air mist. Had immediate 200 BWPH when csg shoe was drld. Cleaned out old hole to 2440'. Drld to 2461'. Could not make connection. Every time bit was picked up off bottom, hole would immediately heave 15' of very coarse limestone sand & rubble. TOH, PU jet sub, TIH. Jet cub helped keep hole unloaded, but could not make progress through the sand. Worked same connection 12 hrs., but would not clean up. SD @ 10:00 p.m. Mixed & pumped 200 bbls mud w/45% LCM. No returns. Mixing more mud. Mud wt. 9.0; VIS 58; wtr loss 22.2; LCM 32%. Survey: 1-3/4° @ 2422'.

Drilling Report
Imperial Federal #19-1
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Operator: Berge Exploration, Inc.

- 9/21/86: Depth - 2461'. Present op: Mixing mud & LCM. Last 24 hrs: Mixed & pumped 250 bbls mud w/45% LCM. No returns. Moved out 2 air compressers, set 180 bbl premixed tank. Unloaded & set 2 mud vans. Mixed & pumped 1350 bbls. mud w/45% LCM in 3 separate stages. Mud wt. 8.9; VIS 80; wtr loss n/c; LCM 45%.
- 9/22/86: Depth - 2461'. Present op: washing & reaming to bottom. Last 24 hrs: mixed & pumped 400 bbls mud w/45% LCM. No returns. TOH to check fluid level, unchanged @ 1450'. TIH, tag fill 15' off bottom. Began aereating mud w/1 compressor & mud pump. Had slight to intermittent returns. Cleaned out to 2461'. Ran out of mud. TOH to 2400'. Mixed 400 bbl mud, no LCM, 80 VIS. TIH, no fill, try to establish circ w/aereated mud. Mixec 400 bbls 90 VIS mud. Cleaned out to 2461' w/no air & no returns. Had 3' fill on bottom. Prepare to drl ahead.
- 9/23/86: Depth - 2623'. Drld 162' last 24 hrs. Present op: drlg ahead w/mud & no returns. Last 24 hrs: drld 2461'-2623' w/mud & no returns. Mixed & lost approximately 2500 bbl mud last 24 hrs. If VIS drops below 60; almost get stuck. Dropped thru several small caverns @ 2500', but drlg is presently hard & slow. Mud wt. 8.8; VIS 100; wtr loss 32; WOB 10,000#; RPM 70; 0 psi pump pressure.

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DIVISION OF
OIL, GAS & MINING

GEOLOGICAL WELL REPORT

North Virgin Imperial Federal #19-1

Prepared by

W. CARL SPRENG

BERGE EXPLORATION
7100 NORTH BROADWAY
SUITE 2L
DENVER, COLORADO 80221
303-426-1086

RESUME

WELL NAME: North Virgin Imperial Federal #19-1
OPERATOR: Berge Exploration, Inc.
LOCATION: 1315' FSL x 1225' FWL Sec. 19, T40S-R11W
COUNTY, STATE: Washington, Utah
ELEVATION: 4546' (GR) 4556' (KB)
SPUD DATE: August 22, 1986 4:00 p.m.
COMPLETION DATE: October 21, 1986 12:00 p.m.
TOTAL DEPTH: 5267' (driller) 5162' (logger)
HOLE SIZE: 6-1/4"
ENGINEERS: Matt Rohret, Gordon Byers
GEOLOGISTS: Carl Spreng, Mark Scanniello, Verne Berry,
John Berge
CONTRACTOR: VECO Drilling, Inc. - Lige Daniel, toolpusher
MUD LOGGING: Rocky Mountain Geo-Engineering -
Bob Larsen, geologist
CORES: None
DRILL STEM TEST: 4400'-4428' (Pakoon Fm.)
OPEN HOLE LOGS: Schlumberger

Interval:	Type:
448'-2419';	Dual Induction/SFL
2717'-5162'	
448'-2416'	LithoDensity/Compensated
2717'-5159'	Neutron
2717'-5152'	Sonic
448'-2400';	Cyberlook
4215'-5110'	
4750'-5160'	Dipmeter

FORMATION TOPS

<u>Formation</u>	<u>Log Tops (from KB)</u>	<u>Subsea Elevation</u>	<u>Actual Thickness</u>
Shinarump Conglomerate	@ surface		
Moenkopi Formation	~70'	+4486'	1808'
Timpoweap Member	1878'	+2678'	130'
Kaibab Limestone	2008'	+2548'	390'
Toroweap Formation	2398'	+2158'	544'
Queantoweap Sandstone	2942'	+1614'	1282'
Pakoon Dolomite	4224'	+ 332'	720'
Callville Limestone	4952'	- 396'	

BIT RECORD

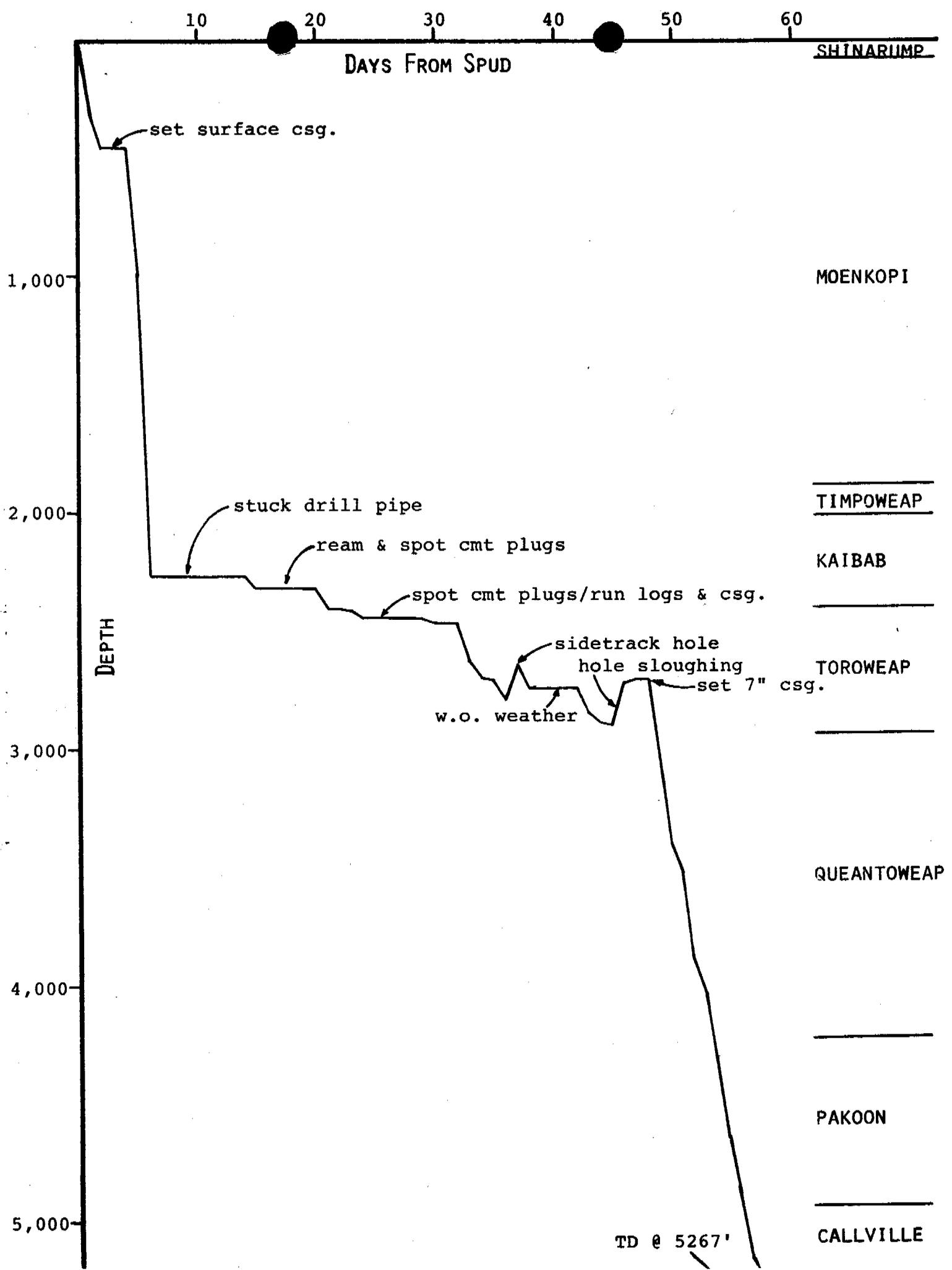
<u>NO.</u>	<u>MAKE</u>	<u>TYPE</u>	<u>SIZE</u>	<u>DEPTH OUT</u>	<u>FOOTAGE</u>	<u>HOURS</u>
1	STC	Y1J	12-1/4"	455'	455'	
2	HTC	OSC3AJ	17-1/2" (ream)	455'	455'	
3	Varel	L126	7-7/8"	990'	535'	18-1/2
4	Varel	V527	7-7/8"	2268'	1274'	
5	Varel	V537	7-7/8"	2315'	51'	
6	Sec	S86F	10-5/8" (ream)	1722'	1267'	
7	Sec	S84F	10-5/8" (ream)	2375'	653'	
8	RTC	FP51	10-5/8"	2444'	69'	
9	Varel	L126	7-7/8"	2452'	8'	
10	Varel	V537	7-7/8"	2743'	291'	48-3/4
11	Varel	V537	7-7/8"	2905'	162'	
12	Varel	V537	6-1/4"	3470'	788'	
13	Varel	V537	6-1/4"	3904'	434'	29-1/2
14	Varel	V617	6-1/4"	4652'	748'	58-3/4
15	Varel	V617	6-1/4"	5267'	615'	47-1/2

DEVIATION

<u>DEPTH</u>	<u>DEVIATION</u>
455'	1-1/4°
959'	1-1/4°
1270'	2°
1420'	2°
1975'	1-1/2°
2397'	1-3/4°
2705'	2°
3181'	6-1/2°
3285'	6°
3378'	6°
3408'	6°
3904'	6-1/2°
4652'	8°
5162'	6°

CASING RECORD

<u>SIZE</u>	<u>WEIGHT, LB/FT</u>	<u>DEPTH SET</u>	<u>HOLE SIZE</u>
13-3/8"	48	455'	17"
8-5/8"	24	2422'	10-5/8"
7"	23	2682'	7-7/8"



Introduction

The North Virgin Imperial Federal #19-1 is the initial test well on a large surface structure in the Kolob Plateau area of the Kaiparowits Basin. This structure was defined by a detailed photogrammetric study done on a Kelsh Plotter. This work was later extensively field checked. The form line contours derived from this study indicate a north-south trending anticline with at least 300 feet of closure. Normal faults in the vicinity are the North Creek Fault which trends northeasterly just to the southeast of the structure, the Black Draw Fault just east of the structure, and the Cougar Mountain Fault two miles further east. The Hurricane Fault is seven miles west of the anticline crest.

By agreement the initial test well was to be drilled at least to 4400 feet or 100 feet into the Callville Limestone. Several intervals were considered to be potential pay zones, primarily the Triassic Timpoweap Member of the Moenkopi Formation and the Pennsylvanian Callville Limestone.

Previous Drilling and Production

No wells had previously tested this structure. The three oil fields in the Kaiparowits Basin, however, provide useful stratigraphic and reservoir data. The Virgin Field, the oldest in Utah, is located at the south end of the structure. Oil accumulated in a structural low adjacent to the North Creek Fault. Over 200,000 barrels of oil were produced out of shallow

wells from the Timpoweap Member and the Permian Kaibab Limestone. Distinctly different types and gravities of oil suggests various source and/or pay zones.

The Anderson Junction Field is located about seven miles to the west of the well. This field produced from a small structure along the Kanarra Fold. About 3,000 barrels were produced out of the Callville Limestone before the field was abandoned.

The Upper Valley Field was discovered in 1964 and has produced over 21,000,000 barrels, principally out of the Kaibab Limestone. The structure at this field is similar in size and orientation to the North Virgin structure. The strong hydrodynamic drive, which is important at the Upper Valley, may also affect the reservoir at the North Virgin Unit. The Upper Valley Field is 60 miles northeast of the well.

Prior to Drilling

A federal unit comprising approximately 12,000 acres was formed on June 25, 1986. Known as the North Virgin Unit, this acreage lies in parts of Townships 39-41 South, Ranges 11-12 West in Washington County, Utah. A variety of permits were necessary before drilling commenced. Permits to drill were applied for from both the Bureau of Land Management and from the Utah Division of Oil, Gas, and Mining. Right of entry was granted by the Utah Division of State Lands and Forestry. The Utah Division of Water Rights issued a Water User's Claim. Because the access road crosses about 300 yards of Zion National Park, a Special Use Permit had to be obtained from the National Park Service.

Substantial improvements to the 4.6 miles of existing road were required and included setting nine culverts. The location was finally completed on August 19, 1986.

Drilling Operations

The North Virgin Imperial Federal #19-1 was spudded August 21, 1986. A 12½" hole was drilled with air mist to 455' and reamed to 17½" with mud. 13-3/8" casing was set and cemented at 445' without incident.

After installing blowout prevention equipment, a 7-7/8" hole was drilled to 1,925' with air mist, where the first significant water entry of 100 barrels per hour was encountered in the Timpoweap formation. Drilling continued into the Kaibab formation where water production increased to over 200 BPH. Normal operations were suspended when drill pipe was stuck at 2,264' when a boulder lodged against the pipe, preventing movement up or down. Fishing operations took eight days and cost over \$100,000, but did result in successful recovery of the drill collars and bit that had been stuck.

The Kaibab Limestone-Toroweap Formation interval consisted of interlayered streaks of dense limestone, gravel, and caverns with extremely low bottomhole pressure and tremendous water productivity. Water production in excess of 500 BPH was observed at times, accompanied by prodigious quantities of 1/8" to 3/8" pea gravel from the gravel zones. In addition, boulders in excess of 8" in diameter would occasionally dislodge from the ceiling of a cavern, further complicating drilling operations and slowing down progress. Several of these boulders and rocks were

recovered in the various tools that were run in the hole. The caverns themselves caused some unusual problems. When drill pipe was tripped out of the hole for a new bit, there was always a chance that the pipe would stop in the bottom of one of the caverns and not continue down the original wellbore. This would cause the bit to begin drilling a new hole beside the original one. This happened twice, so that when 7" casing was finally run to case off the Kaibab-Toroweap section, there were actually three separate wellbores present in the formation.

Virtually every combination of air and fluid drilling system was tried in an attempt to successfully drill this zone. Air mist and various combinations of aerated water failed when it became apparent that any returns of drilling fluid or air to the surface caused massive flows of pea-sized gravel. Drilling with water but with no returns to the surface almost resulted in stuck pipe because the water did not have enough carrying capacity to effectively clean the cuttings away from the bit. Mixing mud with lost circulation material (sawdust, shredded paper, cedar fiber, cottonseed hulls, cellophane flakes, etc.) failed due to the tremendous size of the caverns which would have been almost impossible to fill.

For the same reason, squeeze cementing the gravel zones and caverns failed due to the size of the caverns. A protective string of 8-5/8" casing was run at 2,450' so that drilling operations could be continued, but the cavernous section had not been completely penetrated. This later necessitated running an additional protective string of 7" casing at 2,650' in order to seal off the entire Kaibab-Toroweap problem section.

The only drilling technique that worked with any degree of success was to mix and pump very thick drilling mud while drilling with no returns. This was slow and expensive because each time the rig would run out of drilling mud, the progress would halt while more mud was mixed and pumped. However, this method of operation did allow the cavernous section of the Kaibab to be completely penetrated. It took 44 days out of 62 days total drilling time on this well just to drill 500' of the Kaibab-Toroweap interval.

After 7" casing was set at 2,650', drilling continued with 6½" bits to a total depth of 5,267' in the Callville limestone. This section was drilled without incident and with normal operations. Drilling time for this interval was 12 days. The Toroweap Formation, Queantoweap Sandstone, Pakoon Dolomite, and Callville Limestone were all water-bearing, but not in large enough quantities to hamper drilling operations with air mist as a circulating medium. These formations were also very stable, and did not cause any downhole problems.

It is believed that at least 30 days could be eliminated on future wells in this area. Changes that could be made to shorten the drilling time are all concerned with penetrating the Kaibab-Toroweap section. The rest of the drilled intervals in this well were free of any problems. First, a 12½" hole should be drilled through this interval to ease running 8-5/8" casing. Second, gravel zones and caverns should not be sealed by spotting cement plugs since this did not prove effective and resulted in an increased expenditure of money and time. Third, at the first sign of greatly increased water production or

gravel flows, drilling with air should cease and should proceed to drilling with thick mud and lost returns. While this method seems wasteful in terms of mud materials lost downhole, it proved to be the only effective and timely method of successfully drilling this interval. It is felt that these three changes in operations, coupled with what was learned about drilling in this remote region, will greatly facilitate successful drilling operations on the next well.

Geologic Summary

The North Virgin Imperial Federal #19-1 penetrated Triassic through Pennsylvanian age rocks. Lithologies of these rocks are described in detail in the mud log produced by Rocky Mountain Geo-Engineering. These lithologies are summarized in a strat column accompanying this report.

The well location was built on a topographic bench in the Shinarump Conglomerate. This member of the Triassic Chinle Formation is a stream channel deposit.

Air drilling, used in the upper part of the hole, yielded little in the way of cuttings, but a distinct color change in the blowie line dust at about 70 feet was assumed to mark the top of the Triassic Moenkopi Formation. The various lithologies of the Moenkopi represent an alternating shallow marine to slightly emergent low-lying alluvial plain setting. The Moenkopi is mostly a reddish shale with some interbedded siltstone and sandstone and occasional gypsum or anhydrite. Two carbonate intervals mark the Shnabkaib and Virgin Limestone Members. The Timpoweap Member at the base of the Moenkopi is

a distinct interval made up mostly of various types of limestone with shale and sandstone interbeds. This limestone section was distinguished by a sudden flow of water which gradually increased. The Timpoweap top was adjusted to match the top of the limestone section on the LithoDensity log. Scattered sample shows were noted in the limestones and sandstones of this member.

The Permian Kaibab and Toroweap formations form a conformable sequence of marine transgressions and regressions. This cycle resulted in the deposition of marine limestones during transgressions. During regressions gypsum, gypsiferous-siltstone, sandstone, and dolomite were deposited in shallow marine and sabkha-like environments. This interval proved to be treacherous for drilling. Water flows which began in the Timpoweap, increased in the Kaibab. Several rock ledges or blocks, loosened by drilling, fell into the well bore and in one case stuck the drill pipe for six days. Gypsiferous siltstone sections caused problems when this material flowed into the hole, bringing gravel-size rocks with it. Cavernous sections caused the hole to sidetrack in at least one spot and contributed to lost circulation conditions. About 350 feet of this interval had no returns and so samples were unavailable for description. About 300 feet of this same section went unlogged when logging tools could not penetrate the hole below the 8-5/8" casing. The only clues to the lithology of this section are the drilling rate and a few samples of limestone and gypsiferous siltstone caught in a globe basket. Lithologies of nearby measured sections and

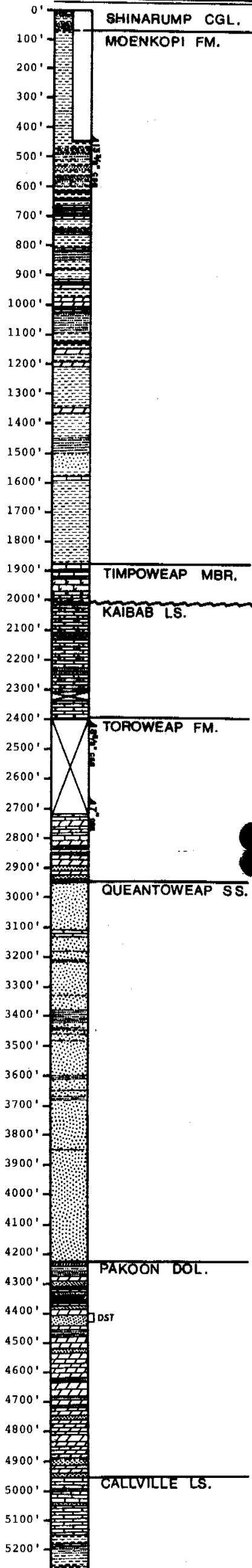
wells also help to fill in the gap. The top of the Kaibab Limestone is an erosional surface. In this well this unconformity is identified by the appearance and dominance of white calcite and a decrease in sample size and by the first appearance of chert and a varied assemblage of fossil fragments. The sample top was adjusted slightly according to the LithoDensity log. The top picked for the Toroweap Formation is at the top of the lost circulation zone. Samples above this point are typical of the Fossil Mountain Member of the Kaibab Limestone and the material caught in the globe basket right at this point appears to be from the Woods Ranch Member of the Toroweap Formation. On the logs, the top was picked somewhat arbitrarily at the base of a dolomitic limestone section. The footages assigned to these formations agree with thicknesses in recent geologic studies. The cuttings examined appeared tight generally. Porosity and/or oil staining was seen on fracture surfaces, stylolites, vugs, and intergranular pore spaces in dolomites. Brown oil staining with streaming or residual cuts was fairly common in limestones of the Kaibab. Toroweap dolomites and sandstones often yielded residual cuts.

The Queantoweap Sandstone top is picked where the LithoDensity log shows predominantly quartz arenite. In the cuttings this point divides light gray sands above (Seligman Member of the Toroweap) from the white to tan to orange sands below. Some samples have fair to good porosity and some are entirely unconsolidated sand. Orange siltstone makes up much of the lithology around the middle of this formation. An anomalous 20-foot limestone interval may be the result of

cavings or a sampling error since it is not evident on logs. The Queantoweap Sandstone produced no hydrocarbon shows.

The lower Permian Pakoon Dolomite consists chiefly of dolomite with prominent interbeds of sandstone and siltstone. Anhydrite cement and beds make up much of the upper part of the formation; the top is picked at an anhydrite bed. The top is also marked by a color change in the sandstones and the appearance of the dolomite. The Pakoon sequence represents the final carbonate platform deposits before the thick clastic deposits which dominate the Permian rocks in this region. Scattered shows of dead oil were seen on stylolite and fracture surfaces and in occasional intergranular and vuggy porosity in otherwise tight dolomites.

The entire Pennsylvanian period is represented by the Callville Limestone. The top of the Callville is placed at the base of a sandstone bed below which limestone is the dominant lithology in contrast to the Pakoon dolomites above. The limestone is oolitic/pelletal and chert-bearing with interbedded sandstone and dolomite. The lower third of the 300' of Callville penetrated in this well is characterized by varicolored shale with interbedded siltstone and dolomite. One show of oil was recorded in vuggy dolomite samples.



MOENKOPI FORMATION (70'-1878')

SHALE: reddish-brown to reddish-orange & sometimes green, fissile, earthy to waxy luster, dolomitic to very slightly calcareous, white & orange anhydrite/gypsum common, occasionally micaceous, silty in part, grades to & interbedded with siltstone.
SILTSTONE: reddish-brown to reddish-orange, occasionally light grey or light green, angular quartz, dolomitic or calcareous or anhydritic cement, variable clay matrix, slightly micaceous, grades to & interbedded with sandstone.
SANDSTONE: buff & green & orange, fine to very fine angular quartz & lithic grains, biotite, dolomitic & calcareous & anhydritic cement, slightly clayey, low porosity & permeability.
DOLOMITE: mudstone with some packstone (oolitic), pinkish orange, occasionally reddish-brown or light green, some sparry cement, argillaceous in part, commonly anhydritic, occasional orange chert, occasionally silty.
LIMESTONE: packstone (oolitic), light grey, contains some crinoid fragments and sparry calcite/dolomite.
 No shows.

TIMPOWEAP MEMBER (1878'-2008')

LIMESTONE: mudstone to packstone, white to light & medium grey, oolitic/pelletal & crinoidal in part, sparry calcite cement; also light yellowish-brown & light reddish brown, dolomitic sucrosic texture, minor visible porosity.
SHALE: reddish-brown, fissile, dolomitic, grades to reddish orange to reddish brown **SILTSTONE** and tan to grey, fine to very fine sub-angular quartz **SANDSTONE** with dolomitic cement and low visible porosity.
Shows: spotty brown oil staining with dull gold fluorescence & streaming yellow cut in sandstone samples from 1890'-1910'; spotty brown staining with fast streaming cut & yellow fluorescence or light yellow residual ring in limestone samples from 1960'-1980'.

KAIBAB LIMESTONE (2008'-2398')

LIMESTONE: mudstone & wackestone & packstone, white & tan & buff, micritic matrix with occasional sparry cement, oolitic in part, white & transparent chert throughout, no visible porosity in most of samples, occasional vuggy porosity, stylolite & fracture surfaces, crinoid & bryozoan fragments, spines/spicules, some intervals of **SANDSTONE:** fine to very fine with occasional medium & coarse quartz grains, calcite cement, low porosity.
Shows: brown oil staining in vugs, on stylolite & fracture surfaces, in pellets, & in sparry calcite; streaming cuts with pale yellow fluorescence in sparry calcite or fracture surfaces from 2008'-2060'; streaming cut & bright yellow fluorescence from brown stained pellets, 2070'-2080'; slow streaming cuts with pale yellow to orange fluorescence from brown stained sparry calcite or oolites at 2110'-20' & 2140'-2160'; brown staining with dull gold sample fluorescence & streaming cut fluorescence at 2200'-2260' & 2290'-2310'; scattered ring cuts in other intervals.

TOROWEAP FORMATION (2398'-2942')

GYPSIFEROUS SILTSTONE/SANDSTONE: light grey (collected in globe basket in lost circulation interval).
DOLOMITE: mudstone, tan to brown & light grey, sucrosic texture common, occasionally very sandy, occasional stylolites, minor intercrystalline and pinpoint vuggy porosity.
LIMESTONE: mudstone & wackestone, tan (yellowish-grey) and grey, commonly sandy, occasional stylolites & fossil fragments, occasional anhydrite & clay inclusions, tight, dolomitic in part.
SANDSTONE: white & light grey, fine to very fine angular to sub-angular quartz with occasional medium to coarse rounded quartz grains, bimodal distribution, occasional lithic grains, commonly unconsolidated, dolomitic/anhydritic cement, low porosity.
ANHYDRITE: white.
Shows: faint ring cuts or residual cuts in dolomite and sandstone intervals.

QUEANTOWEAP SANDSTONE (2942'-4224')

SANDSTONE: white & buff & grey & reddish-orange, fine to very fine grained, sub-angular to subrounded quartz, occasionally unconsolidated, occasional rounded & frosted grains, dolomite & anhydrite (?) cement, fair to good porosity; with interbedded **SILTSTONE:** reddish-brown, clayey matrix, minor amounts of claystone.
 No shows.

PAKOOON DOLOMITE (4224'-4944')

DOLOMITE: mudstone, buff & orange, occasionally silty to sandy or cherty, occasional stylolites, mineral fluorescence.
SILTSTONE: reddish-orange to reddish-brown & buff & maroon, includes angular quartz sand grains and biotite, dolomitic matrix, tight.
SANDSTONE: buff & maroon & pinkish-orange, very fine grained angular quartz, occasional rounded coarse grained sand, occasional lithic grains, dolomitic cement.
ANHYDRITE/GYPSUM: white & transparent.
Shows: occasional dead oil staining on fractures or stylolite surfaces, sometimes tarry; streaming yellow cuts at 4390'-4420', 4550'-4560', 4600'-4620', 4770'-4800', 4910'-4920'.
DST (4400'-4428') Times: open 10 min., SI 30 min., open 60 min., SI 120 min. Pressures: IHP 1266 psi, IFP 28-246 psi, ISIP 1252 psi, FFP 269-806 psi, FSIP 1252 psi, FHP 1266 psi; Recovered 1851' of fresh water.

CALLVILLE LIMESTONE (4952'-TD)

LIMESTONE: tan wackestone, packstone, & mudstone, oolitic-pelletal(?), includes clear-white & orange chert, sandy in part, interbedded cream colored **SANDSTONE** and **DOLOMITE**.
SHALE: variegated, fissile, slightly calcareous, interbedded reddish-orange **SILTSTONE** and maroon, buff & reddish-orange **DOLOMITE**.
Shows: yellow cut & fluorescence from dolomite at 5090'-5110'.

Contractor Veco Drilling Top Choke 1/4"
 Rig No. #2 Bottom Choke 3/4"
 Spot SW/SW Size Hole 6 1/4"
 Sec. 19 Size Rat Hole 6 1/4"
 Twp. 40S Size & Wt. D. P. 3 1/2" IF 11.6#
 Rng. 11W Size Wt. Pipe --
 Field Wildcat I. D. of D. C. 2"
 County Washington Length of D. C. 550 ft.
 State Utah Total Depth 5267 ft
 Elevation 4556 ft Interval Tested 4400-4428 ft
 Formation Pakoon Type of Test Inflate Straddle

Flow No. 1 10 Min.
 Shut-in No. 1 30 Min.
 Flow No. 2 60 Min.
 Shut-in No. 2 120 Min.
 Flow No. 3 -- Min.
 Shut-in No. 3 -- Min.
 Bottom Hole Temp. 123⁰F
 Mud Weight 8.7
 Gravity --
 Viscosity --

Tool opened @ 4:03 am
 Outside Recorder

PRD Make Kuster K-3
 No. 24645 Cap. 4450 @ 4410'

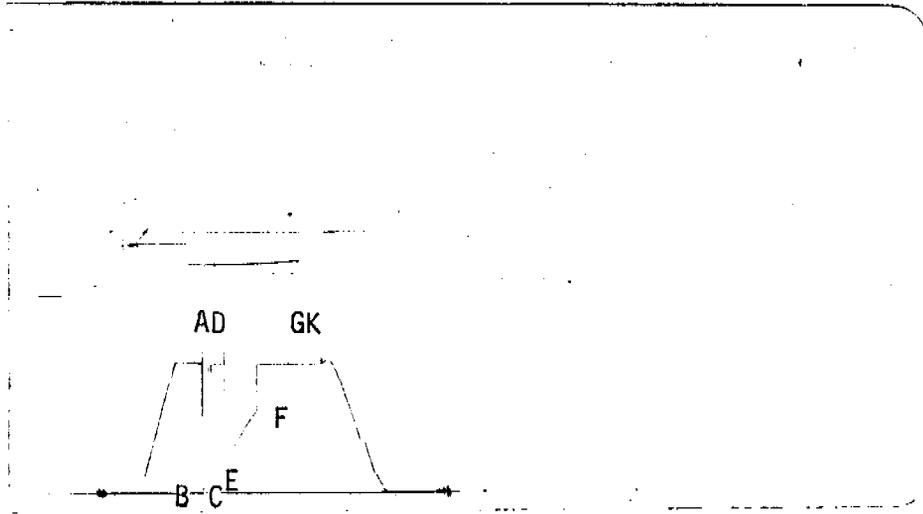
	Press	Corrected
Initial Hydrostatic	A	1266
Final Hydrostatic	K	1266
Initial Flow	B	28
Final Initial Flow	C	246
Initial Shut-in	D	1252
Second Initial Flow	E	269
Second Final Flow	F	806
Second Shut-in	G	1252
Third Initial Flow	H	--
Third Final Flow	I	--
Third Shut-in	J	--

Lynes Dist. Farmington, NM
 Our Tester: David Dolyniuk
 Witnessed By: Matt Rohret

Operator Berge Exploration
 Address 7100 North Broadway Suite 26
Denver, CO 80221

Well Name and No. Imperial Federal #19-1
 Ticket No. 00790

Date 10/19/86
 DST No. 1
 No. Final Copies 5



Did Well Flow - Gas No Oil No Water Yes
 RECOVERY IN PIPE:

Ran 1851 ft recovery = 12.82 bbls.

Blow Description:

1st flow: Tool opened with a 2" blow, increasing to 3/4 psi in 5 minutes, decreasing to 22" at the end of the flow.

2nd flow: Tool opened with a 1" blow, increasing to 23" in 30 minutes, decreasing to 17" at the end of the flow.

Comments:

The test results indicate a mechanically successful test. The flow and shut-in curves suggest high permeability within the zone tested. The initial shut-in stabilized in 10 minutes at 1252 psi, the second shut-in stabilized in 5 minutes at 1252 psi, therefore no extrapolation were performed.

Location: 19-408-11W
Test Type: INFLATE STRADDLE
Formation: PAKOON

Recorder Number: 24645
Recorder Depth: 4410 ft.

SAMPLE DATA

SAMPLE CHAMBER:

Capacity of sample chamber	2300	cc
Volume of sample.....	2300	cc
Pressure in sampler.....	10	psig
Where sampler was drained...	on location	

Sampler contained:
Water 2300 cc

RESISTIVITY DATA:

Top.....	3500 PPM NACL
Middle.....	3500 PPM NACL
Bottom.....	3700 PPM NACL
Sampler.....	3800 PPM NACL
Mud pit.....	3800 PPM NACL
Make-up Water..	3800 PPM NACL

COMPANY: Beige Exploration UT ACCOUNT # N 7660 SUSPENSE DATE: _____

TELEPHONE CONTACT DOCUMENTATION

CONTACT NAME: Carl Spring

CONTACT TELEPHONE NO.: 1-303-426-1086

SUBJECT: Imperial Fed #19-1

Logs came in as Tight Hole
I called to see if the file shd be Conf or
just the logs

(Use attachments if necessary)

RESULTS: Mr. Spring requested the logs & file he held
conf for a short while. He will send letter when
to remove from Conf status.

(Use attachments if necessary)

CONTACTED BY: UC

DATE: 12-05-86

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPlicate
(Other instructions
verse side)

Form approved
Budget Bureau No. 1004-0135
Expires August 31, 1985

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.)

RECEIVED
DEC 04 1986

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. U-29259
2. NAME OF OPERATOR Berge Exploration, Inc.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A
3. ADDRESS OF OPERATOR 7100 North Broadway, Suite 2L, Denver, Colorado, 80221		7. UNIT AGREEMENT NAME North Virgin Unit
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface 1315' FSL, 1225' FWL (SW $\frac{1}{4}$ SW $\frac{1}{4}$) Section 19		8. FARM OR LEASE NAME North Virgin Imperial Federal
14. PERMIT NO.	15. ELEVATIONS (Show whether DP, ST, CR, etc.) 4556' RKB	9. WELL NO. #19-1
		10. FIELD AND POOL, OR WILDCAT Wildcat
		11. SEC., T., R., M., OR B.L. AND SURVEY OR AREA Sec. 19-T40S-R11W
		12. COUNTY OR PARISH Washington
		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 <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input checked="" type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	(Other) <input type="checkbox"/>

(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.) *

The above well was drilled to a depth of 5267' TD in the Callville Formation. No shows oil or gas were encountered. It is proposed to Plug and Abandon this well as follows:

1. Load hole w/ minimum 9.0 ppg fresh water/ bentonite mud.
2. Spot cement plug #1 4250'-4050' 35 sx.
3. Set Cast Iron Bridge Plug in base of 7" intermediate casing at 2650'.
4. Spot cement plug #2 2650'-2550' 15 sx.
5. Cut off 7", 8 5/8", and 13 3/8" casing strings 4' below ground level.
6. Spot cement plug #3 400'-Surface inside and outside all casing strings 75 sx.
7. Weld plate and Dry Hole Marker onto surface casing stub.
8. Reclaim and recontour location in accordance w/ approved APD stipulations.

NOTE: No casing will be pulled from this wellbore. It will be abandoned with all casing strings left intact.

18. I hereby certify that the foregoing is true and correct
SIGNED W. Carl Spreng TITLE consulting geologist DATE 11/13/86

(This space for Federal or State office use)
APPROVED BY _____ TITLE _____ ACCEPTED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING

*See Instructions on Reverse Side
DATE: 12-8-86
BY: [Signature]

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

13

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL GAS WELL DRY

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

RECEIVED
DEC 04 1986

2. NAME OF OPERATOR
Berge Exploration, Inc.

3. ADDRESS OF OPERATOR
7100 N. Broadway, Suite 2-L, Denver, Colorado 80221

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface 1315' FSL x 1225' FWL
At top prod. interval reported below
At total depth SAME

5. LEASE DESIGNATION AND SERIAL NO.
U-29259

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
121001

7. UNIT AGREEMENT NAME
North Virgin

8. FARM OR LEASE NAME
North Virgin Imperial Federal

9. WELL NO.
#19-1

10. FIELD AND POOL, OR WILDCAT
wildcat

11. SEC. T. R. M., OR BLOCK AND SURVEY OR AREA
Sec. 19, T40S-R11W

CONFIDENTIAL

14. PERMIT NO. 43-053-30047 DATE ISSUED 8/7/86

12. COUNTY OR PARISH Washington 13. STATE Utah

15. DATE SPUDDED 8/21/86 16. DATE T.D. REACHED 10/17/86 17. DATE COMPL. (Ready to prod.)

18. ELEVATIONS (DF, RKB, RT, OR, ETC.)* 4546' (GR) 4556' (KB) 19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD 5267' (KB) 21. PLUG. BACK T.D., MD & TVD

22. IF MULTIPLE COMPL., HOW MANY* 23. INTERVALS DRILLED BY 0-5267' 24. ROTARY TOOLS -0- CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
(Well was plugged & abandoned on October 21, 1986)

25. WAS DIRECTIONAL SURVEY MADE Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN
Dual Induction/SFL; Litho-Density/Compensated Neutron; Sonic; Dipmeter

27. WAS WELL CORRED 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"	48#	455'	17"	228 sx Lite + 175 sx Class A	none
8-5/8"	24#	2422'	10-5/8"	150 sx Class A cmt	none
7"	23#	2682'	7-7/8"	100 sx Lite + 10# gilsonite + 80 sx Class A + 2% CaCl ₂	none

29. LINER RECORD 30. TUBING RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number) N/A

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

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* N/A 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
Electric logs; drill stem test report; geological report.

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

SIGNED W. Carl Spreng TITLE Consulting Geologist DATE 11/13/86

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

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):

38. GEOLOGIC MARKERS

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	TOP	
					MEAS. DEPTH	TRUE VERT. DEPTH
			(All formations from the Timpoweap Mbr. and below flowed water. See the accompanying stratigraphic for lithologic descriptions, hydrocarbon shows, and drill stem test results.)	Shinarump Cgl. Moenkopi Fm. Timpoweap Mbr. Kaibab Ls. Toroweap Fm. Queantoweap Ss. Pakoon Dol. Callville Ls.	(KB) surface ~70' 1878' 2008' 2398' 2942' 4224' 4952'	

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE
(Other instructions
verse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
DEC 04 1986

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3. ADDRESS OF OPERATOR 7100 North Broadway, Suite 2L, Denver, Colorado		7. UNIT AGREEMENT NAME North Virgin Unit
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface 1315' FSL, 1225' FWL (SW $\frac{1}{4}$ SW $\frac{1}{4}$) Section 19		8. FARM OR LEASE NAME North Virgin Imperial Federal
14. PERMIT NO.	15. ELEVATIONS (Show whether OF, ST, CR, etc.) 4556' RKB	9. WELL NO. #19-1
		10. FIELD AND POOL, OR WILDCAT Wildcat
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		12. COUNTY OR PARISH Washington
		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 <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
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REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	

(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.)

The above well was plugged and abandoned on October 21, 1986. Ann Stanworth of the Cedar City District BLM office referred the operator to the State for plugging orders. Those orders were issued by Ron Firth of the Utah Division of Oil, Gas & Mining on October 20, 1986. The well was plugged and abandoned as follows:

1. Pumped 100 bbls of 9.0 ppg drilling mud at 5267' TD.
2. Set cement plug #1 from 4250'-4050' with 35 sx.
3. Set Cast Iron Bridge Plug at base of 7" intermediate casing at 2650'.
4. Filled 7" casing with 125 bbls 9.0 ppg drilling mud.
5. Set cement plug #2 from 2650'-2550' with 15 sx.
6. Cut off 7", 8 5/8", and 13 3/8" casing strings 4' below ground level.
7. Set cement plug #3 from 400'-surface both inside and outside all casing strings with 75 sx.
8. Welded on plate and Dry Hole Marker to 13 3/8" casing stub.
9. Released drilling rig 12:00 Noon 10/21/86.

NOTE: No casing was pulled from this well. All casing was left in the wellbore.

18. I hereby certify that the foregoing is true and correct
SIGNED W. Carl Spring TITLE consulting geologist DATE 11/13/86

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____

CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

DATE 12-8-86
BY John R. Bay

*See Instructions on Reverse Side

RECEIVED
 DEC 04 1986

STATE OF UTAH
 DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF OIL, GAS AND MINING
 3 TRIAD CENTER, SUITE 350
 SALT LAKE CITY, UT 84180-1203

DIVISION OF
 OIL, GAS & MINING

REPORT OF WATER ENCOUNTERED DURING DRILLING

Well Name & Number North Virgin Imperial Federal #19-1

Operator Berge Exploration, Inc. Address 7100 N. Broadway, Suite 2-L
Denver, Colorado 80221

Contractor Veco Drilling Co. Address P.O. Box 1705, Grand Junction,
Colorado 81502

Location SW 1/4 SW 1/4 Sec. 19 T. 40S R. 11W County Washington

Water Sands

<u>Depth</u>		<u>Volume</u>	<u>Quality</u>
<u>From</u>	<u>To</u>	<u>Flow Rate or Head</u>	<u>Fresh or Salty</u>
1. <u>Timpoweap Mbr. (1925'-2008')</u>		<u>100 bbl/hr.</u>	<u>Fresh</u>
2. <u>Kaibab Ls. (2008'-2398')</u>		<u>200 bbl/hr.</u>	<u>Fresh</u>
3. <u>Toroweap Fm. (2398'-2942')</u>		<u>200 bbl/hr.</u>	<u>Fresh</u>
4. <u>Queantoweap Ss. (2942'-4224')</u>		<u>75 bbl/hr.</u>	<u>Fresh</u>
5. <u>Pakoon Dol. (4224'-4944')</u>		<u>100+ bbl/hr.</u>	<u>Fresh</u>
<u>(Continue on reverse side if necessary)</u>			
6. <u>Callville Ls. (4952'-TD)</u>		<u>100+ bbl/hr.</u>	<u>Fresh</u>

Formation Tops

(See Above)

Remarks

(Over)

NOTE: (a) Report on this form as provided for in Rule 806, Oil and Gas Conservation General Rules.

(b) If a water analysis has been made of the above reported zone, please forward a copy along with this form.

COMPANY: BLM, Dixie R.A. DATE: 3-12-89 TIME: 2:30p

PERSONAL CONTACT DOCUMENTATION

CONTACT: Scott Splinter

CONTACT TELEPHONE NO: 613-4654

SUBJECT: N. Virginia Imperial 19-1, Berse Exp., Rehab schedule.

(Use attachments if necessary)

RESULTS Will call back w info.;

* Received call back from Paul Carter, Geologist, BLM, Cedar District Office
He says waiting for good roads, then operator plans to do work this
Spring. He will call when date's set or work completed.

(Use attachments if necessary)

CONTACTED BY: WJ