



August 5, 2004

Utah Division of Oil, Gas & Mining
1594 W. N. Temple Suite 1210
Salt Lake City, Utah 84114-5801

RE: Wolverine Gas & Oil Company of Utah, LLC requests permission to drill the
Wolverine Federal #17-5 well as an exception to Rule R649-3-3

Gentlemen:

Pursuant to Rule R649-3-3 of the State's Oil & Gas Conservation regulations, Wolverine Gas & Oil Company of Utah, LLC, hereby makes application for approval to directionally drill an oil & gas well.

Wolverine Gas & Oil Company of Utah, LLC (Wolverine) proposes to drill the Wolverine Federal #17-5 well to a total depth of 7,160 feet. Wolverine is the only operator within a 460 foot radius.

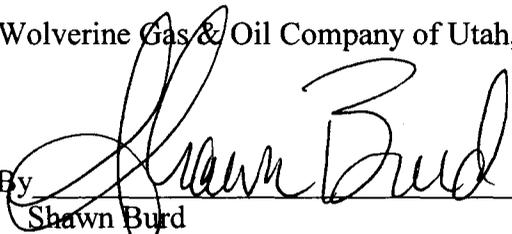
The mountainous terrain of the area is such that directional drilling is the most effective method to minimize surface disturbance. By locating the well pad on a relatively flat surface and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

Attached hereto is a plat as required by the Commissions rules and regulations.

If no objections are filed, the applicant requests that this application be approved. If objections are filed, applicant requests the matter be set for hearing and that it be advised of the hearing date.

Respectfully submitted,

Wolverine Gas & Oil Company of Utah, LLC

By 
Shawn Burd
Authorized Agent

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

FORM 3

AMENDED REPORT
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

5. MINERAL LEASE NO: **UTU-73528** 6. SURFACE: **Fee**

7. IF INDIAN, ALLOTTEE OR TRIBE NAME:

8. UNIT or CA AGREEMENT NAME: **Wolverine Fed. Exploration Unit**

9. WELL NAME and NUMBER: **Wolverine Federal # 17-5**

10. FIELD AND POOL, OR WILDCAT: **Wildcat**

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: **SENE 17 23S 1W S**

1A. TYPE OF WORK: **DRILL** REENTER DEEPEN

B. TYPE OF WELL: **OIL** GAS OTHER _____ SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR: **Wolverine Gas and Oil Company of Utah, LLC**

3. ADDRESS OF OPERATOR: **One Riverfront Plaza** CITY **Grand Rapids** STATE **MI** ZIP **49503** PHONE NUMBER: **(616) 458-1150**

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: **1,736' FNL & 2,268' FWL - T23S-R1W, Sec17 SENW**
AT PROPOSED PRODUCING ZONE: **1,980' FNL & 660' FEL - T23S-R1W, Sec17 SENE**

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: **3.5 miles South of Sigurd**

12. COUNTY: **Sevier** 13. STATE: **UTAH**

15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET): **appr. 200'**

16. NUMBER OF ACRES IN LEASE: **8236 ac**

17. NUMBER OF ACRES ASSIGNED TO THIS WELL: **40**

18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET): **appr. 600'**

19. PROPOSED DEPTH: **7,160**

20. BOND DESCRIPTION: **BLM # Wy 3329**

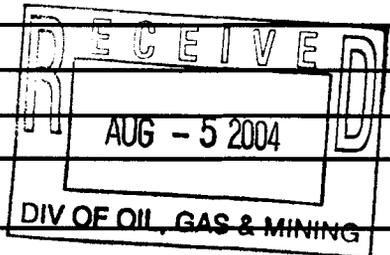
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): **5,740' - GR**

22. APPROXIMATE DATE WORK WILL START: **9/15/2004**

23. ESTIMATED DURATION: **40 days**

24. **PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
20	14	80	Conductor
12 1/4	9 5/8 36 ppf J55 STC	1,510	lead:c,360sx, 1.78, 12.8/tail:g, 280sx, 1.20, 15.6
8 3/4	5 1/2 17 ppf L80 LTC	7,160	lead:Poz, 750sx, 1.76, 13.0/tail:Poz, 350sx, 1.49 13.4



25. **ATTACHMENTS**

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES:

WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER

COMPLETE DRILLING PLAN

EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER

FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

NAME (PLEASE PRINT) Richard Moritz TITLE Vice President, Land & Legal

SIGNATURE *Richard Moritz* DATE 07/22/2004

(This space for State use only)

API NUMBER ASSIGNED: 43-041-30038 APPROVAL: Swf 418956X 4295396Y 38,80547 -111.93335

Bill 419658X 4295297Y 38,80464 -111,92525



United States Department of the Interior
BUREAU OF LAND MANAGEMENT
RICHFIELD FIELD OFFICE
150 East 900 North
Richfield, Utah 84701



In Reply Refer To:

3160
(UT-050)

August 10, 2004

Mr. Richard D. Moritz
Wolverine Gas and Oil Company of Utah, LLC
One Riverfront Plaza
55 Campau NW
Grand Rapids, Michigan 49503

Dear Mr. Moritz:

On July 22, 2004, four Applications for Permit to Drill and on July 28, 2004, three additional Applications for Permit to Drill were filed in this office. These seven wells are Wolverine #17-3, 17-4, 17-5, 16-1, 18-1, 19-1, and 20-1 and are on Federal lease UTU-73528. The well pad locations for these wells are in Section 17, T. 23 S., R. 1 W., SLM, Sevier County, Utah. Your applications have been reviewed for completeness in accordance with the provisions of the Federal regulations and the Onshore Oil and Gas Orders.

Based on Onshore Order 1, with the reference to the appropriate section, the following items are missing or need clarification in your applications:

Section III.G. 3, Form 3160-3 or as an attachment:

- c. Type of drilling tools (rotary or cable).
- d. Casing condition (new or used).

Section III.G. 4. a., Drilling Plan:

- (2) The anticipated contents of each geologic structure or stratum (water, oil, gas or other minerals).
- (3) Pressure control schematic.
- (4) As these are exploratory wells, the design factors for each casing string. (See Onshore Order #2, *Drilling Operations*, III. B. Casing and Cementing Requirements.)

Section III.G. 4. b., Surface Use Program:

- (3) Location of existing wells. For 17-3, 17-4, 17-5, and 16-1, the Location Map does not show the existing Well 17-2. For 18-1, 19-1, and 20-1, the Location Map does not show the existing well 17-1. Are any water wells within the one-mile parameter of the Order? At the proposed well site for 17-3, 17-4, 17-5, and 16-1, three well pads are shown. Two of the pads are assumed to be

the existing well pad (17-1) and the proposed pad (17-3 and others); however, the third pad is not identified.

- (4) Location of proposed production facilities.
- (5) Location of water supply. Be specific as to the source, if it is non-Federal.
- (9) Well site layout. Living facilities and the orientation of the rig and other facilities are not included on a layout.
- (11) Surface Ownership. The surface ownership of the well and access road shall be indicated. Where the surface of the well is privately owned, the operator shall include the name, address, and phone number, if known, of the surface owner. If privately owned, the existence of an agreement between the operator and owner needs to be provided.

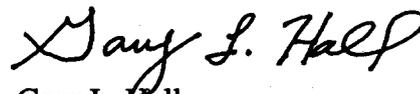
All the above items will be necessary before approval can be granted. All other portions of your application are in place, and we will continue to process your application up to the point the missing information prevents further action.

If future applications are filed, we request that Wolverine Gas and Oil adhere closely to Onshore Order No. 1, Section III. G. *Components of a Complete Application for Permit to Drill*. In the order, the Drilling Plan and the Surface Plan items are enumerated for ease of reference during both the preparation and the review of a proposal. All these items are required by regulation, and following the outline in the Order will facilitate the review of your applications. Although some items appear unnecessary or outdated, please provide the information. Unless specifically requested, additional information is unnecessary and may lengthen the review time frames.

In addition, the Application for Permit to Drill package does not need to be filed in a binder for the BLM. BLM records are kept in a file folder, so we remove the binder for ease of filing for our record keeping.

If you have any questions, please contact Michael Jackson at (435) 896-1522. Technical questions on the Drilling Plan may be directed to Al McKee at (801) 539-4045.

Sincerely,



Gary L. Hall
Assistant Field Manager

cc: Western Land Services, 54 West Seymour Street, Sheridan, Wyoming 82801

***PROJECT PLAN OF DEVELOPMENT AND
MASTER SURFACE USE PLAN***

Wolverine FEDERAL #17-5

NAME OF APPLICANT: Wolverine Gas and Oil Company of Utah,
LLC
One Riverfront Plaza, 55 Campau NW
Grand Rapids, Michigan 49503-2616

PROJECT NAME: "Wolverine Federal #17-5"
SE/NE of Section 17
Township 23 South – Range 1 West

ATTACHMENTS: A.) Project Map/Survey
B.) Well Site Location Layout
C.) Typical Cross Sections (Cut and Fill)
D.) Wildlife & Vegetative Species of
Concern Summary
E.) Cultural Resource Survey Report

I. DESCRIPTION OF PROJECT:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) proposes to drill and explore for hydrocarbons, using a directional drilling program, from the Navajo Formation at depths of approximately 4,810' – 7,036' and approximately 8,062' – 9,100' within the Wolverine Federal Exploration Unit situated in Sevier County, Utah:

TOWNSHIP 23 SOUTH, RANGE 1 WEST

Southeast Quarter of Northeast Quarter (SE/NE) of Section 17

Well Name & No. Target Elev. Location TD Footages

LEASE # UTU-73528					
Wolverine Federal #17-5	Navajo 1 and 2	5,736'	SE NE Sec 17, T23S-R1W	7,300'	1,680' FNL;2,281' FWL

The attached Project Map (Attachment A) indicates the proposed well site and its intended configuration. Additionally, the existing access route is indicated. This well is being drilled within the “Wolverine Federal Exploration Unit” and upon privately owned surface.

Mineral rights within the Wolverine Federal Exploration Unit are owned by a variety of interests and are federally owned at the target bottom-hole location for this proposed well. The proposed surface plan will be reviewed and inspected by the appropriate regulatory agencies, state and federal, to ensure proper utilization of the surface reflecting an effort by Wolverine to minimize surface disturbance and waste. Appropriate Onshore Oil and Gas Orders and those of the Utah Division of Oil, Gas and Mining will be followed in the constructing, drilling, completion, operation, plugging and surface reclamation of this well.

The project is situated within an area that is referred to by the Utah Division of Oil, Gas and Mining (Statement of Basis, Kings Meadow Ranches 17-1, October 21, 2003) as “... placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range – Colorado Plateau transition zone.” The drill site itself is located in a flat area between steep hills and is contiguous to Highway 24 from which access to this site will be established. The flat area is dominated by sagebrush – grass communities and the nearby hillsides are dominated by Pinyon Pine – Juniper communities. The access route consists of an improved driveway off from Highway 24 entering onto the well site. BLM road construction standards will be adhered to as new improvements are constructed.

Wolverine’s proposed “Wolverine Federal #17-5” project is most easily accessible from Sigurd, Utah. From Sigurd, one would drive down Highway 24 heading east/southeasterly. At mile marker 13, drive approximately 0.6 miles and turn easterly onto the existing access road driving approximately 200 yards to the proposed well pad location.

Surface water is located in the area primarily in the form of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek. Local springs arising from the volcanic rocks and ephemeral drainages also exist in the area including a drainage way situated along Highway 24. The Sevier River is approximately three (3) miles west of this proposed location.

Geology and Soil Types

Again quoting from the “Division of Oil, Gas and Mining, Statement of Basis, Kings Meadow Ranches 17-1”, the well “...will likely spud into a thin alluvium covering the evaporate-rich Jurassic age Arapien shale.” “The Arapien Shale may have been somewhat intruded or elevated into the area between the Sevier Fault and the considerable parallel secondary faulting mapped in the Cedar Mountain – Black Mountain area...” It is anticipated that from surface to approximately 400 feet in depth, the lithology of the Quaternary will consist of unconsolidated sediments.

The soil type classified at the Wolverine Federal #17-5 wellsite is the Billings silty clay loam. This soil type is a fine-silty, mixed calcareous, mesic Typic Torrifuvents and is usually found in areas containing two (2) to five (5) percent slopes. The soil is a deep, drained, silty clay loam. It features a light gray, moderately alkaline, strongly calcareous, silty clay loam surface soil that is approximately ten (10) inches thick. The subsoils consist of a light gray, moderately alkaline, friable, silty clay loam approximately 32 inches thick. The substrate material is a light gray, moderately alkaline, friable, silty clay loam with a small amount of gypsum veining.

Assuming that the drilling and completion of this well results in its ability to commercially produce hydrocarbons, appropriate market connections will be made upon proper permitting of such activities by all agencies having jurisdiction over said activities.

II. SOIL EROSION CONTROL MEASURES:

The well pad will be sloped at about 1%, in the direction of the site’s drainage so as to provide for a well-drained work area during drilling operations. Appropriate collection and infiltration basins will be constructed in the sloped area of the drill pad.

In all fill areas, the edges shall be diked to control run off.

Appropriate drill site drainage and sedimentation control measures will be incorporated in the operational plan. These may include utilization of earthen dikes along the fill portion of the drilling pad perimeter, stabilization of slopes as needed, location of the reserve pits in the cut portion of the drilling pad and the pad constructed so as to slope toward a collection and infiltration basin. Construction of the drill site shall be in accordance with the regulations and stipulations as defined by the State of Utah, Department of Natural Resources, Division of Water Rights.

Reclamation of the site will be in accordance with Best Management Practices and requirements of the Bureau of Land Management.

III. EXISTING ACCESS ROADS AND ROAD IMPROVEMENTS

The existing access road is identified and labeled on the project map. Steep, rough topography is not identified as a problem along our access route which was constructed by initially using fill material and covering it with approximately eight (8) inches of shale/gravel. Another layer of road base material, approximately four (4) inches in depth, was placed on top of the shale/gravel.

IV. LOCATION OF EXISTING WELLS

The recently drilled “King Meadow Ranches 17-1” well is situated approximately 200 yards southwesterly of this proposed well site location and is situated in the Southeast Quarter of the Northwest Quarter (SE/NW) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah. “Wolverine Federal 17-2” is located approximately one-half mile southerly of this proposed well site and is situated in the Southeast Quarter of the Southwest Quarter (SE/SW) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah.

V. DRILLING METHOD

Wolverine proposes to use a directional drilling program for the Wolverine Federal #17-5. The mountainous terrain of the area is such that directional drilling is the most efficient method to minimize surface disturbance. By locating the well pad on a relatively flat surface, and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

VI. LOCATION AND TYPE OF WATER SUPPLY

Water for drilling the Wolverine Federal #17-5 will be purchased from water wells nearby or drilled on location and pumped into storage tanks at the site. Water for drilling from nearby well(s) will be hauled to location and stored in storage tanks on the drill site. Wastewater will not be discharged on the surface at this site and the drilling of the well will not require a wastewater management plan.

VII. CONSTRUCTION MATERIALS

In most circumstances, natural earth materials were used for the construction of roads and fills. These were taken from locations essentially contiguous to or nearby the locations to be improved. When necessary, road base materials were used and delivered

by the contractor for application on site and specifically as the initial fill material for the access road, which was then covered with approximately eight (8) inches of shale/gravel.

VIII. METHODS FOR HANDLING WASTE

The Reserve Pit will be dug on the well pad per the attached Well Site Location Layout (Attachment B). It will be used for the disposal of waste mud and drill cuttings and will be located on the south portion of the well site plan. The pit will be 100 feet X 240 feet and will be 10 feet deep. The pit will be lined with a synthetic liner having a minimum thickness of 12 mills and if the reserve pit is built in rock, geotextile or some other material approved by the Division of Oil, Gas and Mining shall be utilized. The Division of Oil, Gas and Mining shall be notified prior to lining the reserve pit in order to allow for Division inspection. Rules pursuant to R649-3-16 will be followed regarding the reserve pit as well as those governing Onshore Oil and Gas Operations (43 CFR 3160.)

Upon evaporation of fluids, pit closure occurs with the back fill of soil and its compaction to prevent settling. The usage of the pit is further described in the section VIII under pit closure.

All garbage will be taken off site and disposed of properly. Pursuant to R649-3-14, all rubbish and debris shall be kept in containers on the well site, and will be hauled to an approved disposal site upon completion of drilling and completion operations and as needed during such operations. There will be no chemical disposal of any type. Sewage is handled through the renting of portable toilets. These are serviced by the rental company and removed from site when no longer required.

IX. PLANS FOR RECLAMATION OF THE SURFACE

Pit closure: The pits will be fenced on three sides during all drilling operations and then the fourth side will be immediately fenced when the rig is moved off location. After evaporation of fluids, back-fill of sub-soil and compaction to prevent settling will occur within 90 days of the drilling and completing of the well. If necessary after 90 days, the fluids will be sucked out of the pit and transported off site.

The topsoil will be stripped off and stock piled in an area not to be disturbed. The topsoil will be placed back on the pit after back filling and then prepped for re-seeding.

The approximate Pit size is indicated on the Well Site Location Layout diagram attached hereto (Attachment B).

Revegetation Methods: Disturbed areas will be disked, seeded and “dragged”, as needed; seeding with a mixture approved by the local USDA Natural Resource Conservation Service or the Bureau of Land Management.

Wolverine generally requires at least twelve (12) pounds per acre of seed distribution. Wolverine suggests that autumn seeding practices be used due to the terrain in this project area. Spring rain events are common and tend to cause severe run-off. Fall seeding will allow any moisture, whether rain or snow, to assist the seed into the ground.

Other Practices: Other practices that will be utilized to reclaim disturbed areas will include riprap when and if necessary to prevent erosion and the installation of silt fencing in sensitive and/or erosive areas.

Timetable: Reclamation of the surface will commence as soon thereafter construction, drilling and well completion are concluded, as is practicable, depending on weather. In the event of a dry hole, the drill site and roadways will be restored to their original condition as nearly as practicable within 180 days after plugging date of the well.

X. SURFACE OWNERSHIP

The surface of the proposed well site is privately owned.

XI. WELLSITE LAYOUT

Please see the attached “Well Site Location Layout” (Attachment B) for the well configurations.

XII. PIPELINES AND STREAM CROSSINGS

PIPELINES: In the event of hydrocarbon production requiring transmission by pipeline, the proposed pipeline(s) will be designed, constructed, tested, operated and maintained in accordance with standard safety practices and by a combination of construction techniques intended to minimize to the greatest extent practical the impacts upon natural resources.

Pipelines will typically be installed by trenching. In these trenched areas, the contractor shall strip and stockpile topsoil to be replaced over the backfill portion upon completion of construction operations. Silt fencing will be installed at all stream crossings.

The proposed pipelines will be constructed with a combination of methods intended to minimize impacts to private, state and federally owned property, county roads

and natural resources. The pipeline will be constructed by a combination of conventional construction techniques and special measures designed to minimize impacts to natural resources. Pipelines will be adequately compacted before the topsoil is replaced for re-seeding.

In general and where required, soil erosion control measures will consist of appropriate BMPs (Best Management Practices) to reduce the potential for erosion. The BMPs that will be utilized in upland areas include use of construction barriers where appropriate, land clearing, spoil piles, staging and scheduling, seeding and mulching. Note that spoil piles will not typically be seeded since exposure of the spoil piles should be minimal in time. All other proper BMP measures will be implemented to reduce the potential for erosion. Seeding of all raw soils after burial of pipe will be performed. However, mulching will be performed only within state or county road right-of-ways.

Generally speaking, in wetlands, appropriate BMPs will be implemented to minimize the potential for soil erosion within wetland construction zones. These measures shall include, but not be limited to, clearing, barriers, staging, filters, silt fencing, spoil piles, dewatering, seeding, and mulching.

XIII. GENERAL

TIMELINE: The following is a general order of construction and sequence of earth change by which our operations will proceed:

- 1.) Access Road and Well Pad Construction
- 2.) Drilling and Well Completion Operations
- 3.) Initial Well Pad Restoration
- 4.) Clearing of Pipeline Rights-of-way (if needed)
- 5.) Delivery and Layout of Pipe
- 6.) Pipe Welding and Inspection
- 7.) Trenching of Pipe
- 8.) Placement and Burying of Pipe
- 9.) Final Restoration of Site/Access/Pipeline Route
- 10.) Re-Seeding

All hillsides, creek banks, and other places where contractor has moved earth to facilitate operations shall be restored to as near original condition as practical. Replaced material and/or backfill will be protected from erosion to the satisfaction of Wolverine, the Bureau of Land Management and the Utah Division of Oil, Gas and Mining without undue delay.

Upon completion of any backfill, contractor shall clear pipeline rights-of-way and access routes of large rocks, stumps and other debris; fill holes, ruts and depressions, and shall keep the access road in a neat and acceptable condition. All cleanup shall be maintained by the contractor until final acceptance by Wolverine and the enforcing agency.

XIV. ENVIRONMENTAL IMPACT ASSESSMENT:

It is anticipated that the drilling and operations planned, provided the success of this well, will not have any adverse affects to any wildlife or aquatic life in the area. There will be only a minor effect on the surface cover. Drilling and production operations should have minimal effect on the population patterns, land use, public utilities or public services in the near future for this rural area.

Noise levels during drilling and completion operations may be continuous but not unusually high. If production is achieved, noise levels should be minimal during the operation and maintenance of the wells.

Necessary soil erosion and sedimentation safeguards will be built into the well pad, access and future proposed pipeline routes to protect any nearby lowlands, where appropriate. Particular care will be exercised in order that all drain ditches be maintained and kept unobstructed to prevent water backup against spoil banks or backfill, causing erosion. The cumulative long-term effect on the immediate environment should be minimal.

If the well is productive, the effect on the air quality in the area is expected to be practically non-existent. Human activity in this area is somewhat limited, due to the nature of the location. Ranching operations and any activities in the area should not be adversely affected.

The site will then be contoured as closely as practical to its natural state, fine graded and stabilized. The well site and access route will be restored as soon as practical. If a well is productive, existing dikes will be maintained and erosion control procedures, as specified and required by the Bureau of Land Management, will be followed to insure protection of the local ecosystem.

Cultural

Please see, "Attachment E", Cultural Resource of A Well Pad (A-2) Near Sigurd, Sevier County, Utah.

Wildlife

Please see "Attachment D", a summary of Wildlife and Vegetative Species of Concern.

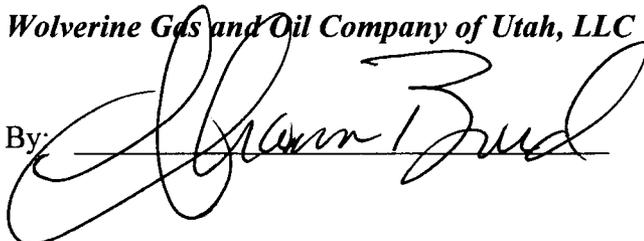
XV. SUMMARY:

In conclusion, the environmental impact of this project is considered to be minimal and every effort will be made to ensure the protection and preservation of the environment, as well as the standard of living for those affected by its operation.

This proposed project is aimed at increasing the hydrocarbon reserves within the State of Utah. In addition, in the event that production can be established in this project, it will be of financial benefit to the private holders of oil and gas rights within the "Wolverine Federal Exploration Unit", including the Bureau of Land Management in fulfillment of its stewardship responsibilities over federally owned oil and gas assets. We consider the environmental impact of this project to be slight and we will make every effort to be conscientious operators and to insure protection and preservation of the environment during the course of our drilling and producing operations.

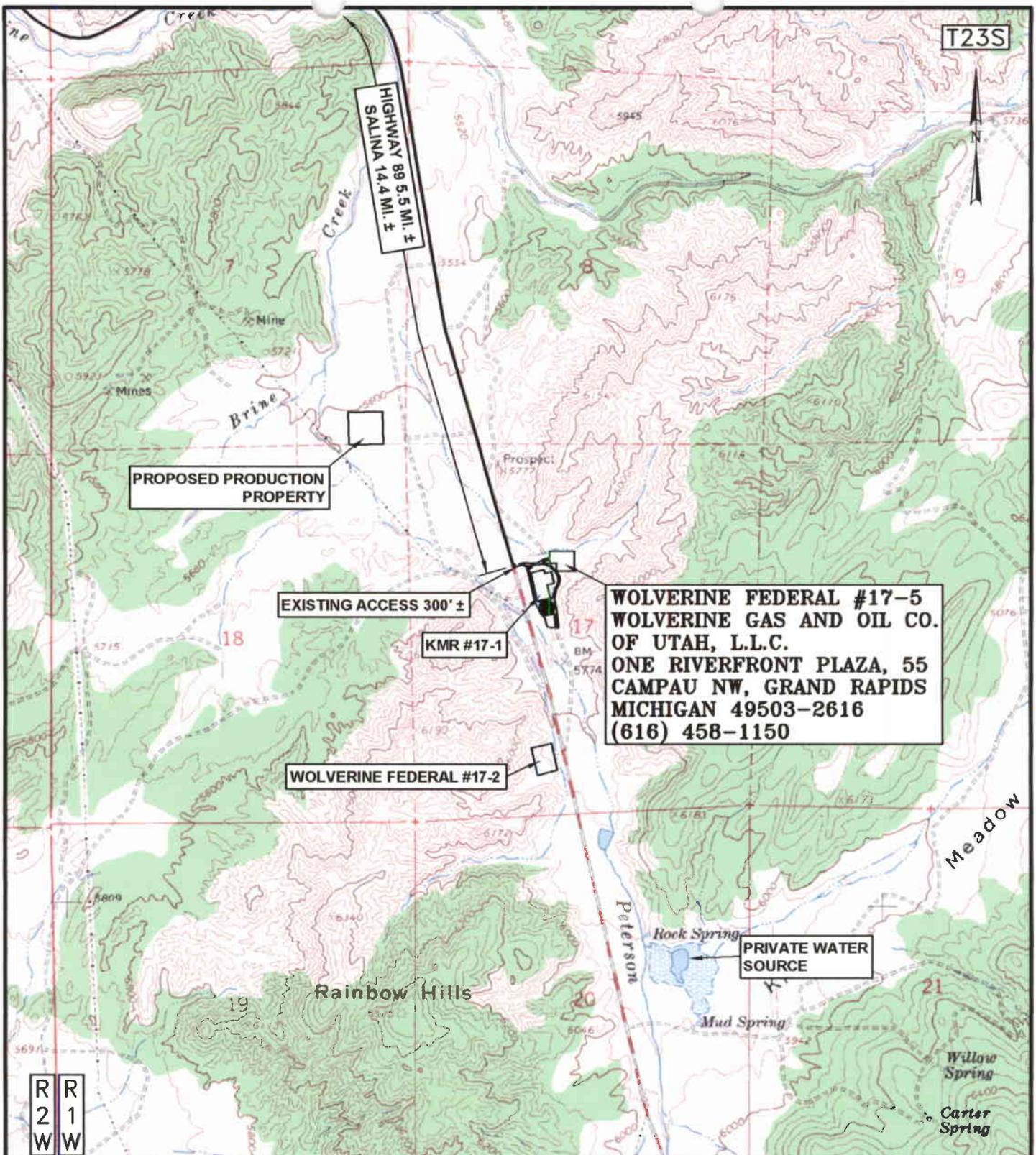
Sincerely,

Wolverine Gas and Oil Company of Utah, LLC

By: 

Authorized Permitting Agent:

Western Land Services – Western Division
54 West Seymour Street
Sheridan, WY 82801
Donald L. Anderson, Chief Operating Officer
Phone: 307-673-1817
Local Contact: Shawn Burd
Phone: 435-896-1943



PROPOSED PRODUCTION PROPERTY

EXISTING ACCESS 300' ±

KMR #17-1

**WOLVERINE FEDERAL #17-5
WOLVERINE GAS AND OIL CO.
OF UTAH, L.L.C.
ONE RIVERFRONT PLAZA, 55
CAMPAU NW, GRAND RAPIDS
MICHIGAN 49503-2616
(616) 458-1150**

WOLVERINE FEDERAL #17-2

PRIVATE WATER SOURCE

**R
2
W** **R
1
W**

LEGEND

- EXISTING ROAD
- - - - - EXISTING ACCESS ROAD

**Wolverine Federal #17-5
Section 17, T.23 S., R.1 W., S.L.B. & M.
1680' FNL 2281' FWL**



Jones & DeMille Engineering

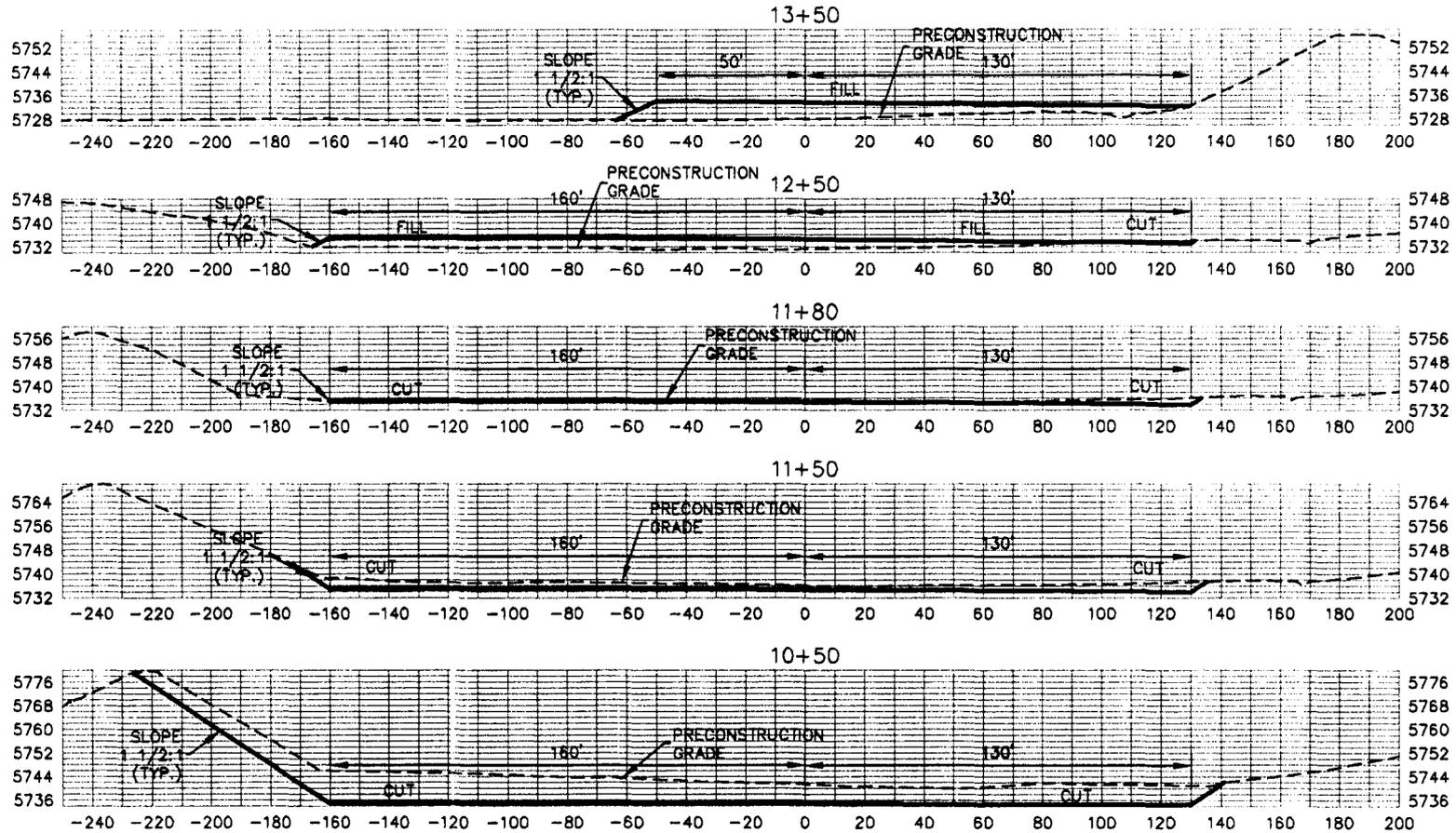
1535 South 100 West – Richfield, Utah 84701
(435) 896-8266 Phone
(435) 896-8268 Fax
www.jonesanddemille.com

**Wolverine Gas and Oil Co.
Wolverine Federal #17-5**

Location Map

SCALE: 1" = 2000'	ENG.:	PROJ.#: 0406-160
DATE: Oct. 2004	DWG.BY: K.B.B.	DWG.NAME: Wells

WOLVERINE GAS & OIL COMPANY OF UTAH, LLC.
TYPICAL CROSS SECTIONS FOR
WOLVERINE FEDERAL #17-5
SECTION 17, T23S, R1W, S.L.B.&M.



Jones & DeMille Engineering
 1535 South 100 West - Richfield, Utah 84701
 Phone (435) 896-8266
 Fax (435) 896-8268
 www.jonesanddemille.com

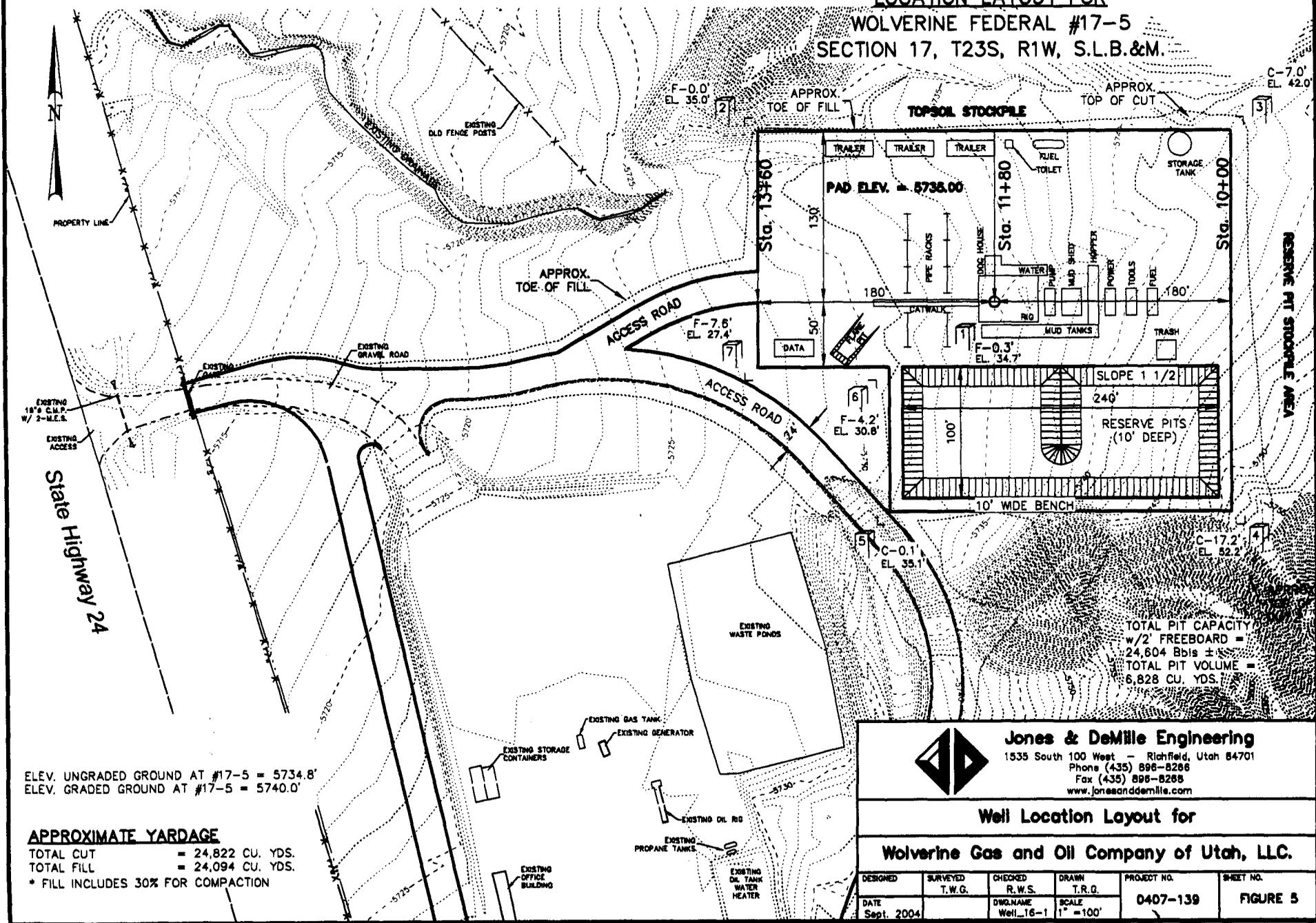
Typical Cross Sections for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	R.W.S.	T.R.G.	0407-139	FIGURE 5A
DATE		DWG.NAME	SCALE		
Sept. 2004		Design	1" = 60'		

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC.

LOCATION LAYOUT FOR WOLVERINE FEDERAL #17-5 SECTION 17, T23S, R1W, S.L.B.&M.



ELEV. UNGRADED GROUND AT #17-5 = 5734.8'
ELEV. GRADED GROUND AT #17-5 = 5740.0'

APPROXIMATE YARDAGE

TOTAL CUT = 24,822 CU. YDS.
TOTAL FILL = 24,094 CU. YDS.
* FILL INCLUDES 30% FOR COMPACTION

TOTAL PIT CAPACITY
w/2' FREEBOARD =
24,604 Bbls ±
TOTAL PIT VOLUME =
6,828 CU. YDS.



Jones & DeMille Engineering

1535 South 100 West - Richfield, Utah 84701
Phone (435) 896-8266
Fax (435) 896-8268
www.jonesanddemille.com

Well Location Layout for

Wolverine Gas and Oil Company of Utah, LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
DATE	T.W.G.	R.W.S.	T.R.Q.	0407-139	FIGURE 5
Sept. 2004		DWLNAME	SCALE		
		Well_16-1	1" = 100'		

003

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:
3160
(UT-922)

August 16, 2004

Memorandum

To: Field Office Manger, Richfield Field Office

From: Michael Coulthard, Petroleum Engineer

Subject: 2004 Plan of Development Wolverine Unit Sevier County,
Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2004 within the Wolverine Unit, Sevier County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ Navajo)		
43-041-30032	Wolverine Federal	20-1 Sec 17 T23S R01W 0833 FSL 1925 FWL
	BHL	Sec 20 T23S R01W 0660 FNL 0660 FWL
43-041-30033	Wolverine Federal	19-1 Sec 17 T23S R01W 0857 FSL 1919 FWL
	BHL	Sec 19 T23S R01W 0660 FNL 0660 FEL
43-041-30034	Wolverine Federal	18-1 Sec 17 T23S R01W 0845 FSL 1922 FWL
	BHL	Sec 18 T23S R01W 0660 FSL 0660 FEL
43-041-30035	Wolverine Federal	17-4 Sec 17 T23S R01W 1736 FNL 2298 FWL
	BHL	Sec 17 T23S R01W 1980 FSL 1980 FEL
43-041-30036	Wolverine Federal	17-3 Sec 17 T23S R01W 1736 FNL 2283 FWL
	BHL	Sec 17 T23S R01W 1980 FSL 0660 FWL
43-041-30037	Wolverine State	16-1 Sec 17 T23S R01W 1736 FNL 2253 FWL
	BHL	Sec 16 T23S R01W 0660 FNL 0660 FWL
43-041-30038	Wolverine Federal	17-5 Sec 17 T23S R01W 1736 FNL 2268 FWL
	BHL	Sec 17 T23S R01W 1980 FNL 0660 FEL



August 18, 2004

Utah Division of Oil, Gas & Mining
1594 W. N. Temple Suite 1210
Salt Lake City, Utah 84114-5801

RE: Wolverine Gas & Oil Company of Utah, LLC requests permission to drill the
Wolverine Federal #17-5

Gentlemen:

Pursuant to Rule R649-3-3-11 of the State's Oil & Gas Conservation regulations, Wolverine Gas & Oil Company of Utah, LLC, hereby makes application for approval to directionally drill an oil & gas well.

Wolverine Gas & Oil Company of Utah, LLC (Wolverine) proposes to drill the Wolverine Federal #17-5 well to a total depth of 7,160 feet and is an exception to Rule R649-3-3. Wolverine is the surface owner as well as the only leasehold operator within a 460 foot radius of the bore hole.

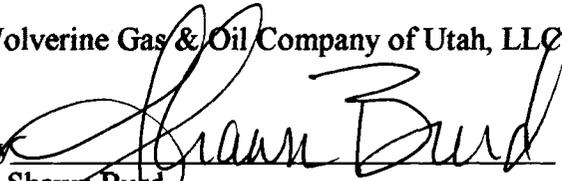
The mountainous terrain of the area is such that directional drilling is the most effective method to minimize surface disturbance. By locating the well pad on a relatively flat surface and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

Attached hereto is a plat as required by the Commissions rules and regulations.

If no objections are filed, the applicant requests that this application be approved. If objections are filed, applicant requests the matter be set for hearing and that it be advised of the hearing date.

Respectfully submitted,

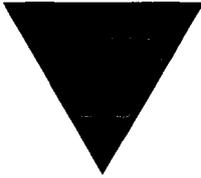
Wolverine Gas & Oil Company of Utah, LLC

By 
Shawn Burd
Authorized Agent

WESTERN LAND SERVICES - UTAH
310 South 100 East • Richfield, UT 84701 • Phone: (435) 896-1943 • Fax: (435) 893-2134
Web: www.westernls.com

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AUG 19 2004

DIV. OF OIL, GAS & MINING



WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

December 29, 2004

Ms. Diana Whitney
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Revised APD Package – Wolverine Federal #17-5

Dear Ms. Whitney:

We are submitting the revised information to the permit submitted previously for Wolverine Federal #17-5. In this package, we are enclosing two sets of the following information:

- Updated Form 3 – Application for Permit to Drill
- Project Plan of Development and Master Surface Use Plan
- Well Plat showing the current surface location
- Vicinity Map
- Cut/Fill Diagram
- Drilling Prognosis with directional drilling plan

RECEIVED

DEC 30 2004

DIV. OF OIL, GAS & MINING

It is our understanding that these items will be combined with the items submitted previously, so as to complete the package. As you know, these wells are considered “wildcat” wells, so we are requesting this information be held confidential.

If you have any questions, please contact me directly. My contact information is contained within the letter address below (extension 129) and my email address is ehiguera@wolvgas.com.

Sincerely,

Edward A. Higuera, P.E.

Enclosures

c: Steve Hash and Shawn Burd w/encl.

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

CONFIDENTIAL

FORM 3

AMENDED REPORT
(highlight changes)

APPLICATION FOR PERMIT TO DRILL		5. MINERAL LEASE NO: UTU-73528	6. SURFACE: Fee
1A. TYPE OF WORK: DRILL <input checked="" type="checkbox"/> REENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/>		7. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
8. TYPE OF WELL: OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> OTHER _____ SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		8. UNIT or CA AGREEMENT NAME: Wolverine Fed Exploration Unit	
2. NAME OF OPERATOR: Wolverine Gas and Oil Company of Utah, LLC		9. WELL NAME and NUMBER: Wolverine Federal #17-5	
3. ADDRESS OF OPERATOR: One Riverfront Plaza CITY Grand Rapids STATE MI ZIP 49503		PHONE NUMBER: (616) 458-1150	10. FIELD AND POOL, OR WILDCAT: Wildcat
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: 1680' FNL & 2281' FWL of Sec 17 AT PROPOSED PRODUCING ZONE: 1980' FNL & 660' FEL of Sec 17		11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENE 17 23S 01W	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 3.5 miles south from Sigurd, Utah on SH 24		12. COUNTY: Sevier	13. STATE: UTAH
15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET) approx 200'	16. NUMBER OF ACRES IN LEASE: 8236 ac	17. NUMBER OF ACRES ASSIGNED TO THIS WELL: 40	
18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET) ~ 600' (surf) & ~ 1867' (BHL @ prod zone)	19. PROPOSED DEPTH: 7,300	20. BOND DESCRIPTION: BLM # Wy 3329	
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 5736 GL	22. APPROXIMATE DATE WORK WILL START: 1/31/2005	23. ESTIMATED DURATION: 30 days	

24. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT			
36"	20"	100	Conductor			
17-1/2"	16" 65ppf H40 BTC	600	Premium G w/ 2% cc	855 sx	1.17	15.8
15" **	13-3/8" 68ppf J55 BTC	2,700	Premium G	1000 sx	1.17	15.8
12-1/4"	9-5/8" 47ppf N80 LTC	5,825	50:50 POZ	725 sx	1.43	13.8
8-1/2"	5-1/2" 17ppf N80 LTC	7,160	50:50 POZ	245 sx	1.23	14.35
**	13-3/8"		contingency string	only if reqd		

25. ATTACHMENTS

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES:

- WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER
- EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER
- COMPLETE DRILLING PLAN
- FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER

NAME (PLEASE PRINT) Edward A. Higuera TITLE Manager - Development / Wolverine Gas&Oil
 SIGNATURE *Edward A. Higuera* DATE 12/29/2004

(This space for State use only)

API NUMBER ASSIGNED: 43041-30038

Approved by the
Utah Division of
Oil, Gas and Mining
Date: 12-30-04
By: *[Signature]*

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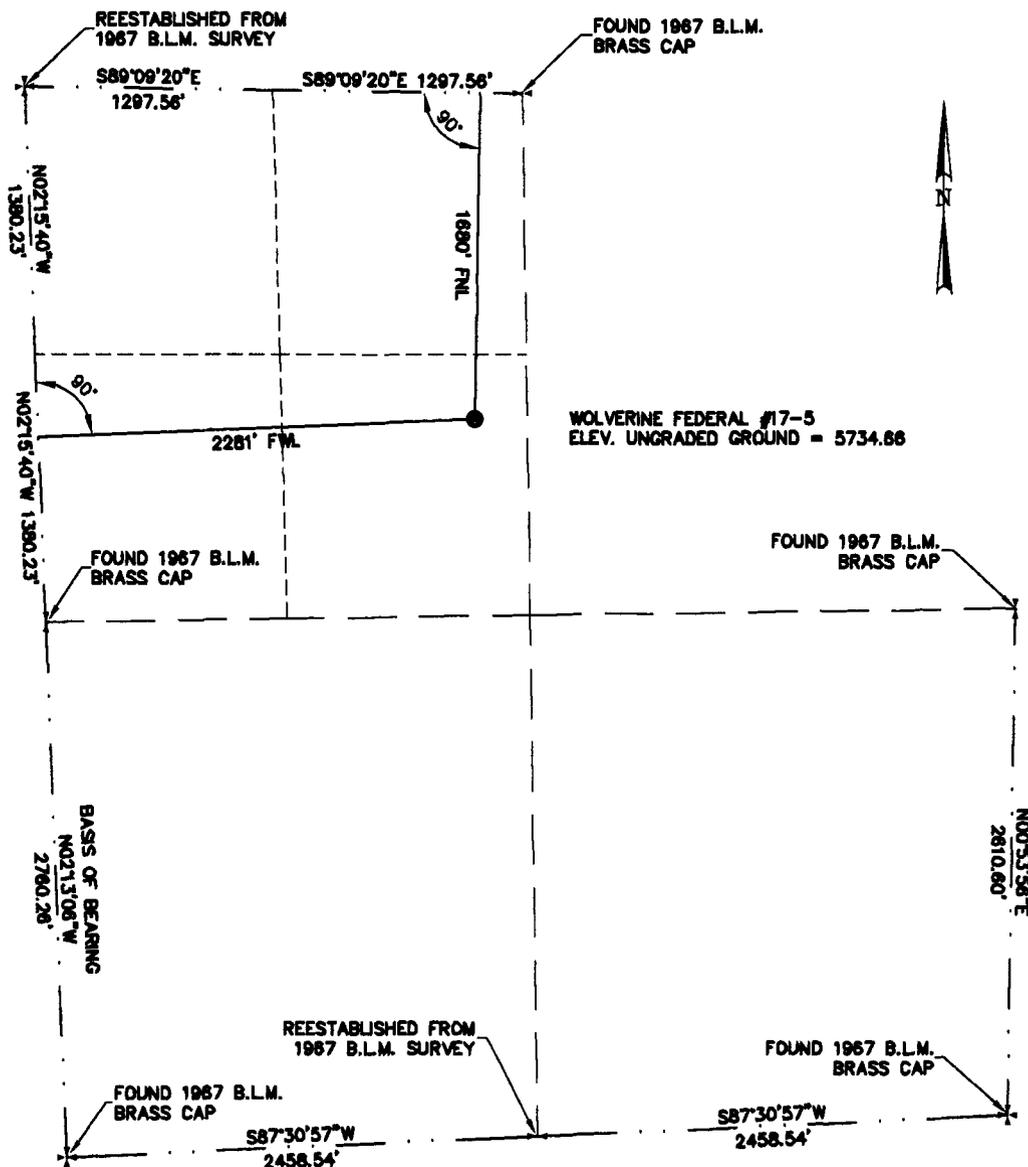
DEC 30 2004

DIV. OF OIL AND MINING

Section 17, T.23 S., R.1 W., S.L.B. & M.

PROJECT Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE
NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.
SEVIER COUNTY, UTAH



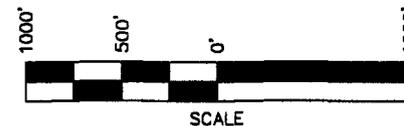
LEGEND

- ⊕ = SECTION CORNERS LOCATED
- ⊖ = QUARTER SECTION CORNERS LOCATED
- = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT
THE WOLVERINE FEDERAL #17-5 LOCATION.
LOCATED IN THE SE 1/4 OF THE NW 1/4
OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.
SEVIER COUNTY.

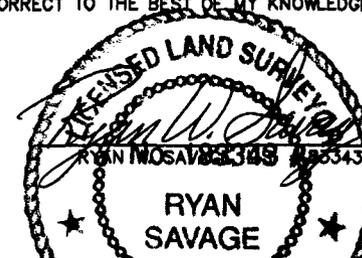
BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN
THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM
FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER
MY SUPERVISION, AND THAT THE SAME ARE TRUE AND
CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



Ryan Savage
12/16/04
DATE

Jones & Demille Engineering
1536 South 100 West - Richfield, Utah 84701
Phone: (435) 896-8286
Fax: (435) 896-8288
www.jonesanddemille.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED T.W.G.	CHECKED R.W.S.	DRAWN K.B.B.	PROJECT NO. 0406-180	SHEET NO. 1
DATE Oct. 2004		DWG. NAME Wells	SCALE 1" = 1000'		

BASIS OF BEARINGS

BASIS OF BEARING USED WAS N02°13'06"W BETWEEN THE SOUTHWEST CORNER
AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.

LATITUDE = 38°48'18.903" (38.805250833)
LONGITUDE = -111°56'02.205" (111.933945833)

WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

DRILLING PROGNOSIS

Wolverine Federal #17-5
SE NE SEC 17-T23S-R1W
SEVIER CO., UTAH

BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 7160' MD (6550'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 located in Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location: 1680' fnl & 2281' fwl of Sec 17 T23N – R01W
BHL @ top of NVJO1 (5760' TVD) 1980' fnl & 660' fel of Sec 17 T23N – R01W

20" conductor casing will be cemented to surface at approximately 100-120 ft BGL. 16" surface casing will be set & cemented to surface in a 17-1/2" hole deviated to approximately 3 deg at +/-600' (+/-600' TVD). A 12-1/4" hole will then be drilled to +/- 5825' (5265' TVD) deviated to approximately 30 deg from vertical by 2200' maintaining tangent to TD of 5825'. 9-5/8" protective casing will be set from surface to TD & cemented across the lowermost 2000'. An 8-1/2" hole will then be drilled to +/- 7160' (6550' TVD). 5-1/2" production casing will then be run from TD back to surface & cemented to approximately 300' into the 9-5/8" intermediate casing. In the event of lost circulation or other problems while drilling the 12-1/4" hole from 600' to 2700', the hole will be enlarged to 15" and a 13-3/8" casing string will be run from surface to TD (no deeper than 2700') and cemented into the surface casing. This is a contingency only.

EMERGENCY NUMBERS

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896-5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

United States Bureau of Land Management

Contact Al McKee (801) 539-4045 24 hrs prior to spudding

Utah Division of Oil, Gas and Mining

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

GENERAL INFORMATION

OBJECTIVE: Navajo 1 @ 5760' (TVD)	ELEVATION: 5736' GL (actual)
PROJECTED TOTAL DEPTH:	7160' MD; 6550' TVD
SURFACE LOCATION:	1680' FNL & 2281' FWL Section 17-23S-1W
COUNTY: Sevier	STATE: Utah
DIRECTIONS TO LOCATION:	From the town of Sigurd, Utah go south approximately 3.5 miles on Hwy #24 to location on the left side of the road.

PROPOSED CASING PROGRAM:

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Measured Depth Set
	20"	.25 wall	X42	PE welded	100-120'
17-1/2"	16"	65#	H-40	BTC	0'-600'
*** 15"	13-3/8"	68#	J-55	BTC	0' - 2700'
12-1/4"	9-5/8"	47#	N-80	LTC	0'-5,825'
8-1/2"	5-1/2"	17#	N-80	LTC	0' - 7160'

*** contingency only – set only if hole conditions dictate

Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
30"	20"	Conductor	Na			
20"	16"	15.062	17.0	.7854	.7854	1.2476
*** 15"	13-3/8"	12.259	14.375	.2927	.2927	.8406
12 1/4"	9-5/8"	8.525	10.625	0.3127	0.4659	0.4340
8-1/2"	5-1/2"	4.767	6.050	0.2291	0.2291	0.1305

*** contingency only – set only if hole conditions dictate

GEOLOGIC INFORMATION:

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	Abnormal Psi
Arapien	Surf – 5465'	Surf – 6030'	sh, siltstone, salt, evaporites		
TwinCreek1	5465' - 5760'	6030' –6340'	Carbonates	X	
Navajo 1	5760- 6350'	6340' –6960'	Sandstone w/ minor shale	X	
Total Depth	6550'	7160'	Sandstone w/ minor shale		

CONSTRUCTION OF SURFACE LOCATION

360'x 180' Pad
 150'x 100' x 10' Reserve Pit with a 12 mil synthetic liner
 96" diameter tin horn cellar, 10' deep.
 Flare pit a minimum of 100' from wellhead.

SURFACE HOLE: 0' to 600'

Directionally drill a 17-1/2" hole with a TCI rock bit, mud motor & MWD equipment to approximately 600' using fresh water and gel/lime sweeps when necessary (make hole to fit 16" casing). Loss circulation is not expected to be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with +25 ppb LCM, consider dry drilling (no returns). Maintain hole direction to approximately 230 degr azimuth in keeping with the attached directional plan.

PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

Bottom to Top

20" drilling nipple – returns to mud pits – no pressure control

MUD PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>PH</u>	<u>FLUID LOSS</u>
0 -600'	8.4 – 8.9	FW/Gel/Lime	26-45	7-9	N/C

Note: Sweep hole every 100 – 200 feet or as needed for hole cleaning. Control the pH with Lime & Caustic to aid in gel flocculation for better carrying capacity.

CASING PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0 - 600'	16"	600'	65#	H-40	BT&C	

Casing Running Sequence:

guide shoe

1 jt of 16" 65# H-40 BT&C

Float collar

Balance of 16" 65# H-40 BT&C

Centralizers as reqd.

RU cement co., hold safety meeting, test lines, cement 16" casing per cement company recommendation. Displace with fresh water or mud if used.

CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

855 sx Premium Class G	Mixed at:	15.8 ppg
2% calcium chloride	Yield:	1.17 ft ³ /sx
0.25 lb/sx flocele	Water:	5.01 gal/sx

MUST CIRCULATE CEMENT TO SURFACE If the cement does **not** circulate to surface contact the BLM and UDOGM office for further instructions and remedial actions.

WOC A TOTAL OF 24 HOURS:

Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on a 16-3/4" 3M x 16" SOW casing head. NU 20" 2M diverter w/ 7-1/16" HCR valve rigged to mud/gas separator, mud tanks and flare pit.

PROTECTIVE CASING HOLE: 600' to 5825'

Directionally drill a 12-1/4" hole with a PDC and/or a TCI rock bit, mud motor & MWD equipment to approximately 5825' MD using a low solids – non dispersed system converting to salt mud in the lower portion. Loss circulation may be a problem in this interval. If losses do occur, begin pumping LCM sweeps. If loss circulation cannot be healed with +25 ppb LCM, consider dry drilling (no returns). If conditions are severe consider implementing a contingency for casing the problem zone with 13-3/8" csg as outlined above. Build hole angle to approximately 30 degrees by 2200' then maintain hole angle and direction to casing point in keeping with the attached directional plan. Protective casing should be set near the base of the Arapien interval to isolate potential poor hole conditions prior to drilling potential pay zones in the Twin Creek Lime.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PROTECTIVE CASING STRING

Bottom to Top (see attached 2M Diverter diagram)

- 16-3/4" 3M x 16" SOW csg head.
- 16-3/4" 3M x 20" 2M spacer spool
- 20" 2M x 20" 2M x (2) 7-1/16" 2m side outlets
 - one outlet 7-1/16" HCR valve w/ 6" blooie line to mud separator & flare pit
 - one outlet (blank)
- 20" 2M Annular Preventer
- 20" 2M flanged btm drilling nipple w/ fillup line

- Upper kelly cock valves with handles available
- Safety valves and subs to fit all drill string connections in use
- Inside BOP or float sub available

Testing Procedure:

Annular Preventer & HCR Valve

The annular preventer will be pressure tested to 1000 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 1) When the annular is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

MUD PROGRAM FOR PROTECTIVE CASING HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>pH</u>	<u>FLUID LOSS</u>
600' – 5825'	8.7 – 9.6	LSND	34-45	9.0-10.0	12cc or Less

If required, implement a natural breakover to a salt or gypsum system as salt and gypsum sections are drilled. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole. Implement casing contingency if absolutely necessary.

CASING PROGRAM FOR PROTECTIVE CASING HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0' – TD'	9-5/8"	5825'	47#	N-80	LT&C	

Rig up casing tools and run 9-5/8" protective casing as follows:

Float shoe, 2 joint of 9-5/8" 47.0# N-80 LT&C casing, float collar, 6 centralizers, middle shoe joint and one every other joint for 12 jts, run balance of 9-5/8" 47# N-80

CEMENT PROGRAM FOR PROTECTIVE CASING

725 sx (50:50) Poz: Premium	Weight:	13.8 ppg
3 % Bentonite	Yield:	1.43 ft ³ /sx
0.3% Halad R-344 (Low Fluid Loss Control)	Water:	6.45
gal/sx		
15 % Salt		
0.3% D-AIR 3000 (Defoamer)		
0.25 lb/sx Flocele		

TOC at \pm 3500 ft

Calculate cement volume based on gauge hole plus 30% excess. Displace with mud.

Set slips, ND diverter stack, cut off, NU & test wellhead. Clean pits and prepare for next hole section.

PRODUCTION HOLE: 5,825 to 7160'

Trip in the hole with an 8-1/2" insert bit, ^{910 psi} mud motor & MWD. Drill float, shoe and 20' of new hole. Perform an integrity test to 500 psi w/ 9ppg mud (10.5 ppg mud wt equivalent). Drill with a low colloid polymer system.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION CASING STRING**Bottom to Top (see attached 5M BOP Stack diagram)**

11" 5M x 9-5/8" SOW csg head.
 11" 5M x 11" 5M mud cross w/ (2) side outlets
 one outlet 2-1/16 5M kill line
 one outlet 3-1/16" 5M choke line
 11" 5M double ram blowout preventers with 4-1/2" pipe rams top & CSO rams
 btm
 11" 5M annular preventer
 11" Rotating head w/ fillup line

Connect BOP to choke manifold with pressure guage

Upper kelly cock valves with handles available

Safety valves and subs to fit all drill string connections in use

Inside BOP or float sub available

Testing Procedure:

Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 4) When the annular is initially installed
- 5) Whenever any seal subject to test pressure is broken
- 6) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

Blowout Preventer

The BOP, choke manifold and related equipment will be pressure tested to 4500 psi, or 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

- 1) When the BOP is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular rig contracted to drill this well.

A flare line will be installed after the choke manifold, extending 100 feet from the center of the drill hole to a separate flare pit.

MUD PROGRAM FOR PRODUCTION HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>pH</u>	<u>FLUID LOSS</u>
5825' - 7160'	8.7 - 9.9	LC Polymer	34-50	9.0-10.0	10cc or Less

EVALUATION PROGRAM FOR PRODUCTION HOLE

At TD, circulate and condition hole clean for logs. Short trip to the intermediate casing monitoring well closely. TOH for logs.

Mudlogger: From 1500' to total depth.

Electric Logs:

Tool	PCP to TD
Dual Laterolog/GR/Caliper (DLL) (DIL if fresh mud system)	Yes
Micro Spherically Focused Log (MFSL)	Yes
CNL/LithoDensity/GR/Caliper (CNL/LD/GR/CAL)	Yes
Formation Micro Scanner/GR	Yes

DST: To be decided

Cores: To be decided

CASING PROGRAM FOR PRODUCTION HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0' - TD'	5-1/2"	7160'	17#	N-80	LT&C	

Rig up casing tools and run 5-1/2" production casing as follows:

Float shoe

2 joints of 5-1/2" 17# N-80 LT&C casing

Float collar

Centralizers as reqd.

Run balance of 5-1/2" 17# N-80.

CEMENT PROGRAM FOR PRODUCTION CASING

245 sx (50:50) Poz: Premium

2 % Bentonite

0.3% Halad R-344 (Low Fluid Loss Control)

5 % Salt

0.25 lb/sx Flocele

Weight: 14.35 ppg

Yield: 1.23 ft³/sx

Water: 4.81 gal/sx

TOC at ± 5500 ft in 9-5/8" csg

Calculate cement volume based on log caliper +/- 25%. Displace cement w/water.

Set slips, ND BOP's, cut off, NU & test wellhead. Clean pits and release rig.

SCHEDULE

Location preparation is presently scheduled to begin on or about January 31, 2005

Drilling operations are anticipated to begin on or about January 31, 2005

end

PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by:
 EXACT Engineering, Inc
 Tulsa, OK (918) 599-9400

2M Diverter Stack --- to be utilized while drilling holes for surface and protective casing thru Araplen formation section

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Wolverine Federal #17-5

Max. anticipated surface pressure 2000 psi

Annular B.O.P. 20" 2M W.P.

B.O.P. none Rams none" na W.P.
 (Pipe/Blind)

B.O.P. none Rams _____" _____ W.P.
 (Pipe/Blind)

Check Valve none" _____ W.P.

Valve none" _____ W.P.

Valve blind flange W.P.

Valve 7-1/16" 2M "HCR"

Valve none

Kill Line Manifold

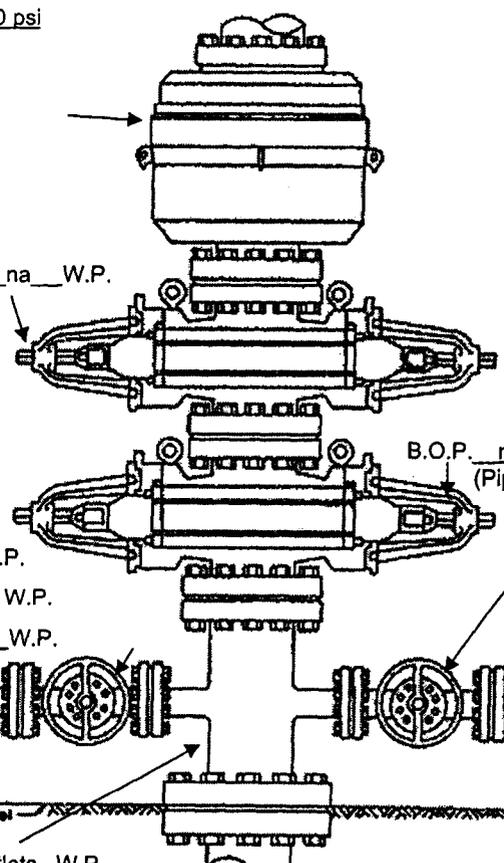
Manifold Line

Ground level
 Line 6" 1000 W.P.

Spool 20" 2M x 20" 2M x 7-1/16" 2M outlets W.P.

Wellhead 20" 2M x 16-3/4" 3M adapter
 w/ 16-3/4" 3M x 16" SOW csg head

B.O.P.
 ___ Manual
 Hydraulic
 ___ Sour Trim



<p>PRESSURE CONTROL SYSTEM SCHEMATIC</p> <p>Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400</p> <p>5M BOP Stack --- to be utilized while drilling holes for production casing thru Twin Creek & Navajo intervals</p>	<p>Operator: Wolverine Gas & Oil Co. of Utah, LLC</p>
	<p>Well name and number Wolverine Federal #17-5</p>

Max. anticipated surface pressure 3000 psi

Annular B.O.P. 11" - 5M WP

B.O.P. 4-1/2" pipe Rams 11" - 5M W.P.
(Pipe/Blind)

B.O.P. blind Rams 11" - 5M W.P.
(Pipe/Blind)

Check Valve 2-1/16" 5M WP

Valve 2-1/16" 5M WP

Valve 2-1/16" 5M WP

Valve 3-1/16" 5M WP

Valve 3-1/16" 5M WP

Kill Line Manifold

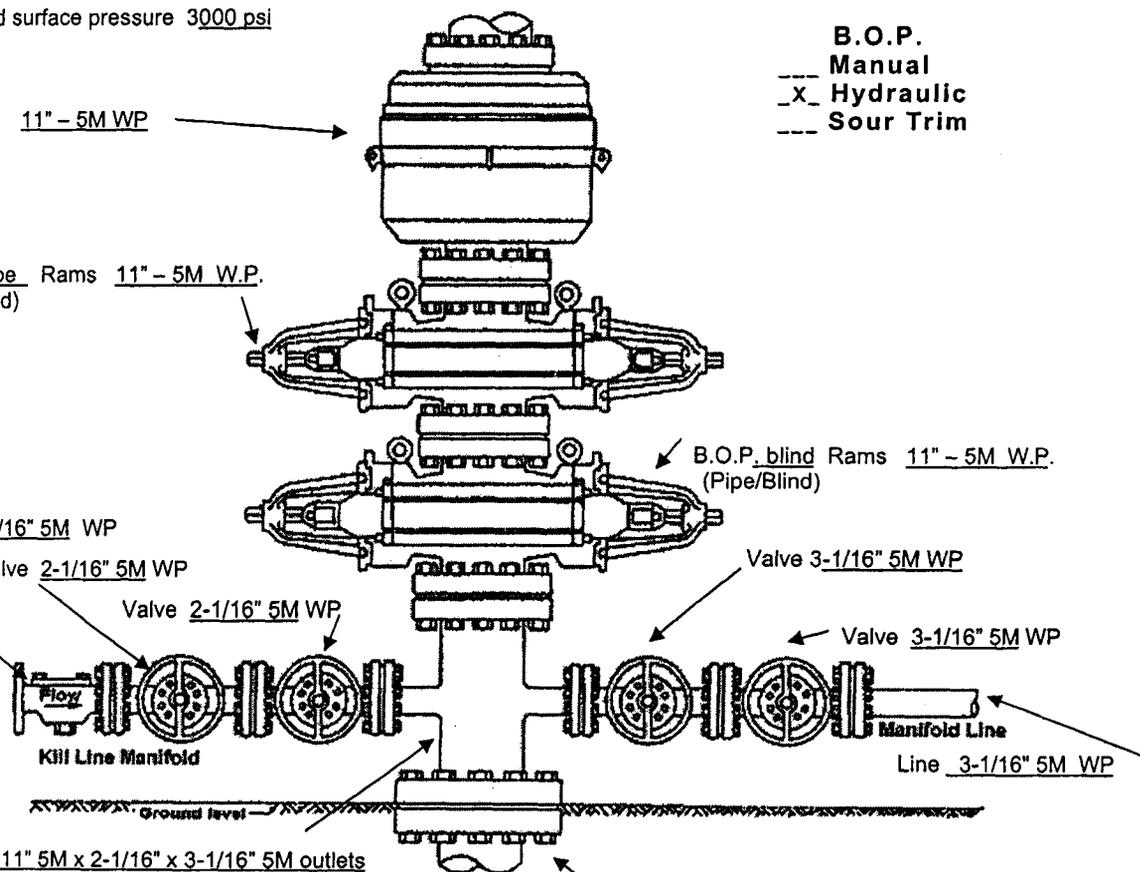
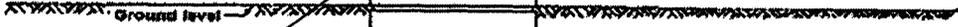
Manifold Line

Line 3-1/16" 5M WP

Spool 11" 5M x 11" 5M x 2-1/16" x 3-1/16" 5M outlets

Wellhead 11" 5M x 11" 5M spacer spool
w/ 11" 5M x 9-5/8" SOW csg head

B.O.P.
Manual
 Hydraulic
 Sour Trim



Wolverine Gas & Oil Co of Utah, LLC

SITE DETAILS

Azimuths to True North
Magnetic North: 12.95°



Magnetic Field
Strength: 52133nT
Dip Angle: 64.57°
Date: 7/6/2004
Model: igrf2000

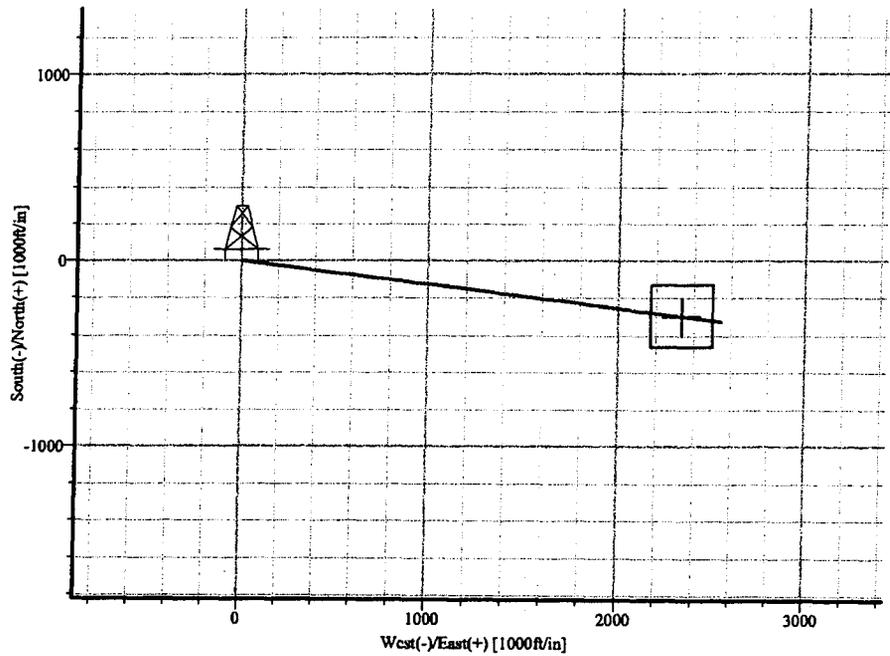
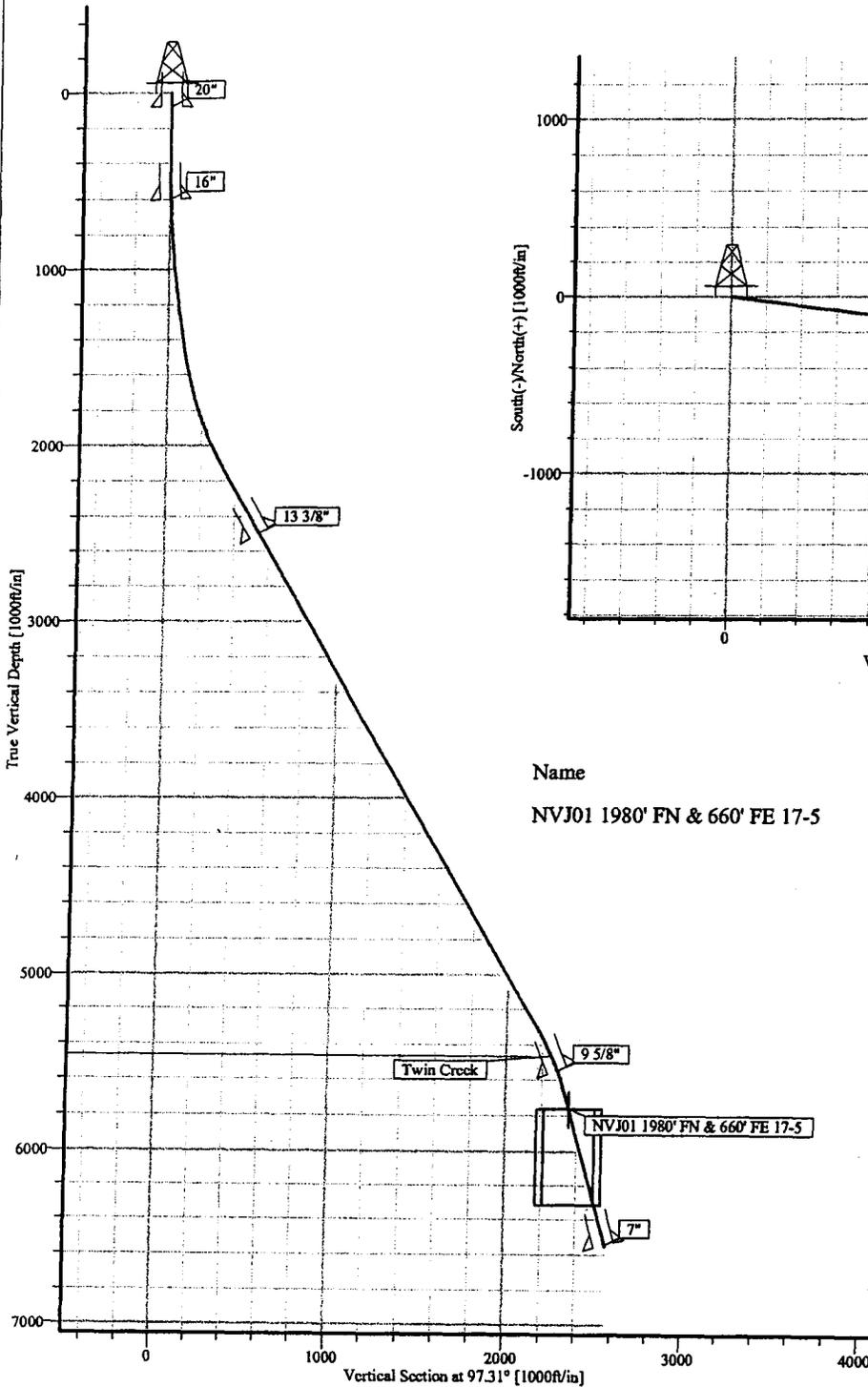
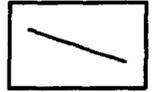
CONFIDENTIAL

Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

17-5 SFC Location
1680' FNL & 2281' FWL Sec 17

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	97.31	300.0	0.0	0.0	0.00	97.31	0.0	
3	1506.1	10.00	97.31	1500.0	-13.4	104.1	0.83	97.31	105.0	
4	2173.3	30.02	97.31	2123.8	-42.3	329.4	3.00	0.00	332.1	
5	5841.4	30.02	97.31	5299.9	-275.7	2149.5	0.00	0.00	2167.1	
6	6342.0	15.00	97.31	5761.0	-300.0	2339.0	3.00	180.00	2358.2	NVJ01 1980' FN & 660' FE 17-5
7	7158.8	15.00	97.31	6550.0	-326.9	2548.7	0.00	0.00	2569.6	



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
NVJ01 1980' FN & 660' FE 17-5	5761.0	-300.0	2339.0	Rectangle (330x330)

CASING DETAILS

No.	TVD	MD	Name	Size
1	80.0	80.0	20"	20.000
2	600.0	600.1	16"	16.000
3	2500.0	2607.8	13 3/8"	13.375
4	5550.0	6119.6	9 5/8"	9.625
5	6550.0	7158.8	7"	7.000

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	5465.0	6027.2	Twin Creek

Plan: 17-5 (17-5/1)

Created By: Steve Schmitz Date: 12/22/2004

Checked: _____ Date: _____



Wolverine Gas & Oil Co of Utah, LLC

SITE DETAILS

Pad A-2
T238 R01W Sevier County, Utah
NW/4 SE/4 Sec 17

Water Depth: 0.0
Positional Uncertainty: 0.0
Convergence: -0.28

Wolverine Federal 17-5
1680' FNL & 2281' FWL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLog	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	97.31	300.0	0.0	0.0	0.00	97.31	0.0	
3	1506.1	10.00	97.31	1500.0	-13.4	104.1	0.83	97.31	105.0	
4	2173.3	30.02	97.31	2123.8	-42.3	329.4	3.00	0.00	332.1	
5	5841.4	30.02	97.31	5299.9	-275.7	2149.5	0.00	0.00	2167.1	
6	6342.0	15.00	97.31	5761.0	-300.0	2339.0	3.00	180.00	2358.2	NVJ01 1980' FN & 660' FE 17-5
7	7158.8	15.00	97.31	6590.0	-336.9	2548.7	0.00	0.00	2569.6	

WELL DETAILS

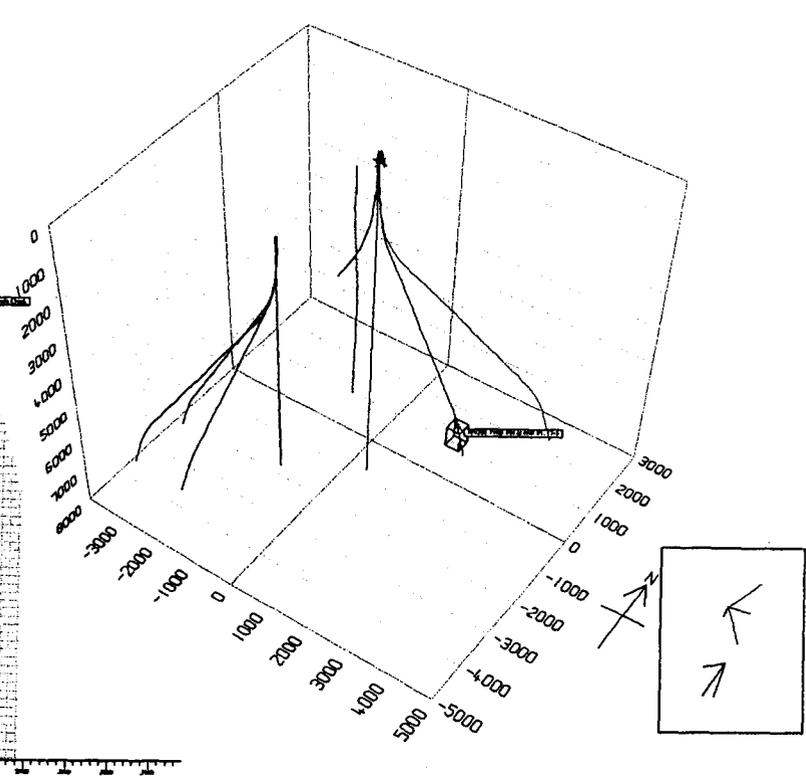
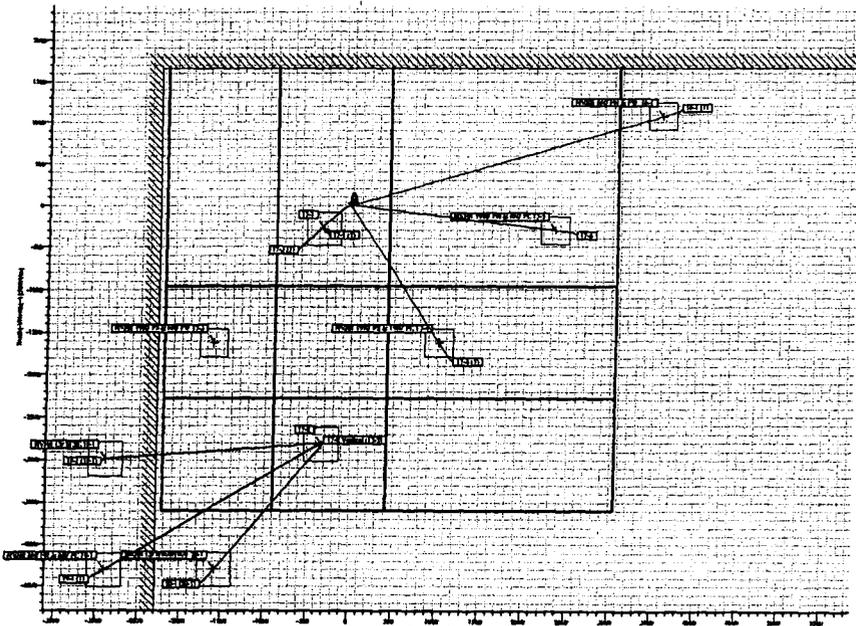
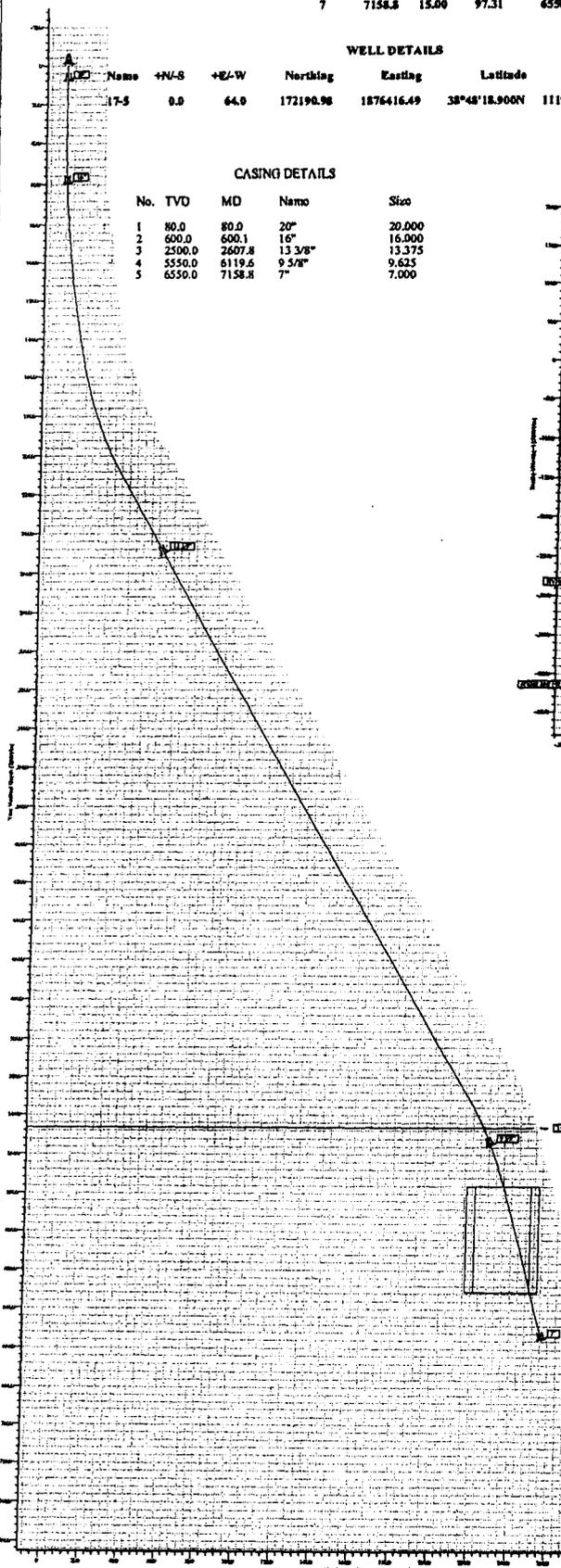
Name	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
17-5	0.0	64.0	172190.98	1876416.49	38°48'18.900N	111°56'01.016W	N/A

TARGET DETAILS

Name	TVD	+N-S	+E-W	Shape
NVJ01 1980' FN & 660' FE 17-5	5761.0	-300.0	2339.0	Rectangle (330x330)

CASING DETAILS

No.	TVD	MD	Name	Size
1	80.0	80.0	20"	20,000
2	600.0	600.1	16"	16,000
3	2500.0	2607.8	13 3/8"	13,375
4	5550.0	6119.6	9 5/8"	9,625
5	6550.0	7158.8	7"	7,000



Weatherford Planning Report

CONFIDENTIAL

Company: Wolverine Gas & Oil Co of Utah	Date: 12/22/2004	Time: 10:23:43	Page: 1
Field: Sevier County, Utah	Co-ordinate(NE) Reference: Well: 17-5, True North		
Site: Pad A-2	Vertical (TVD) Reference: SITE 0.0		
Well: 17-5	Section (VS) Reference: Well (0.00N,0.00E,97.31Azi)		
Wellpath: 1	Plan: 17-5		

Field: Sevier County, Utah			
Map System: US State Plane Coordinate System 1927	Map Zone: Utah, Central Zone		
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Well Centre		
Sys Datum: Mean Sea Level	Geomagnetic Model: Igrf2000		

Site: Pad A-2 T23S R01W Sevier County, Utah NW/4 SE/4 Sec 17			
Site Position:	Northing:	ft	Latitude:
From: Lease Line	Easting:	ft	Longitude:
Position Uncertainty: 0.0 ft			North Reference: True
Ground Level: 0.0 ft			Grid Convergence: -0.28 deg

Well: 17-5		Slot Name:	
Well Position: +N/-S	0.0 ft	Northing:	172190.98 ft
+E/-W	64.0 ft	Easting:	1876418.49 ft
Position Uncertainty: 0.0 ft		Latitude:	38 48 18.900 N
		Longitude:	111 56 1.016 W

Wellpath: 1		Drilled From: Surface	
Current Datum: SITE	Height	0.0 ft	Tie-on Depth: 0.0 ft
Magnetic Data: 7/6/2004			Above System Datum: Mean Sea Level
Field Strength: 52133 nT			Declination: 12.95 deg
Vertical Section: Depth From (TVD)	+N/-S		Mag Dip Angle: 64.57 deg
ft	ft	+E/-W	Direction
		ft	deg
0.0	0.0	0.0	97.31

Plan: 17-5	Date Composed: 7/6/2004
Principal: Yes	Version: 1
	Tied-to: From Surface

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	97.31	300.0	0.0	0.0	0.00	0.00	0.00	97.31	
1506.1	10.00	97.31	1500.0	-13.4	104.1	0.83	0.83	0.00	97.31	
2173.3	30.02	97.31	2123.8	-42.3	329.4	3.00	3.00	0.00	0.00	
5841.4	30.02	97.31	5299.9	-275.7	2149.5	0.00	0.00	0.00	0.00	
6342.0	15.00	97.31	5761.0	-300.0	2339.0	3.00	-3.00	0.00	180.00	NVJ01 1980' FN & 660' FE
7158.8	15.00	97.31	6550.0	-326.9	2548.7	0.00	0.00	0.00	0.00	

Section 1 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	97.31	100.0	0.0	0.0	0.0	0.00	0.00	0.00	97.31
200.0	0.00	97.31	200.0	0.0	0.0	0.0	0.00	0.00	0.00	97.31
300.0	0.00	97.31	300.0	0.0	0.0	0.0	0.00	0.00	0.00	97.31

Section 2 : Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
400.0	0.83	97.31	400.0	-0.1	0.7	0.7	0.83	0.83	0.00	0.00
500.0	1.66	97.31	500.0	-0.4	2.9	2.9	0.83	0.83	0.00	0.00
600.0	2.49	97.31	599.9	-0.8	6.5	6.5	0.83	0.83	0.00	0.00
600.1	2.49	97.31	600.0	-0.8	6.5	6.5	0.00	0.00	0.00	0.00
700.0	3.32	97.31	699.8	-1.5	11.5	11.6	0.83	0.83	0.00	0.00
800.0	4.15	97.31	799.6	-2.3	17.9	18.1	0.83	0.83	0.00	0.00
900.0	4.97	97.31	899.2	-3.3	25.8	26.0	0.83	0.83	0.00	0.00

Weatherford Planning Report

CONFIDENTIAL

Company: Wolverine Gas & Oil Co of Utah
 Field: Sevier County, Utah
 Site: Pad A-2
 Well: 17-5
 Wellpath: 1

Date: 12/22/2004 Time: 10:23:43 Page: 2
 Co-ordinate(NE) Reference: Well: 17-5, True North
 Vertical (TVD) Reference: SITE 0.0
 Section (VS) Reference: Well (0.00N,0.00E,97.31Azi)
 Plan: 17-5

Section 2 : Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1000.0	5.80	97.31	998.8	-4.5	35.1	35.4	0.83	0.83	0.00	0.00
1100.0	6.63	97.31	1098.2	-5.9	45.9	46.3	0.83	0.83	0.00	0.00
1200.0	7.46	97.31	1197.5	-7.4	58.0	58.5	0.83	0.83	0.00	0.00
1300.0	8.29	97.31	1296.5	-9.2	71.6	72.2	0.83	0.83	0.00	0.00
1400.0	9.12	97.31	1395.4	-11.1	86.7	87.4	0.83	0.83	0.00	0.00
1506.1	10.00	97.31	1500.0	-13.4	104.1	105.0	0.83	0.83	0.00	0.00

Section 3 : Start Build 3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1600.0	12.82	97.31	1592.0	-15.7	122.6	123.6	3.00	3.00	0.00	0.00
1700.0	15.82	97.31	1688.9	-18.9	147.1	148.3	3.00	3.00	0.00	0.00
1800.0	18.82	97.31	1784.4	-22.7	176.6	178.0	3.00	3.00	0.00	0.00
1900.0	21.82	97.31	1878.1	-27.1	211.0	212.8	3.00	3.00	0.00	0.00
2000.0	24.82	97.31	1970.0	-32.1	250.3	252.3	3.00	3.00	0.00	0.00
2100.0	27.82	97.31	2059.6	-37.7	294.3	296.7	3.00	3.00	0.00	0.00
2173.3	30.02	97.31	2123.8	-42.3	329.4	332.1	3.00	3.00	0.00	-0.02

Section 4 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
2200.0	30.02	97.31	2146.9	-43.9	342.7	345.5	0.00	0.00	0.00	0.00
2300.0	30.02	97.31	2233.4	-50.3	392.3	395.5	0.00	0.00	0.00	0.00
2400.0	30.02	97.31	2320.0	-56.7	441.9	445.5	0.00	0.00	0.00	0.00
2500.0	30.02	97.31	2406.6	-63.0	491.5	495.5	0.00	0.00	0.00	0.00
2600.0	30.02	97.31	2493.2	-69.4	541.1	545.6	0.00	0.00	0.00	0.00
2607.8	30.02	97.31	2500.0	-69.9	545.0	549.5	0.00	0.00	0.00	0.00
2700.0	30.02	97.31	2579.8	-75.8	590.7	595.6	0.00	0.00	0.00	0.00
2800.0	30.02	97.31	2666.4	-82.1	640.4	645.6	0.00	0.00	0.00	0.00
2900.0	30.02	97.31	2753.0	-88.5	690.0	695.6	0.00	0.00	0.00	0.00
3000.0	30.02	97.31	2839.6	-94.9	739.6	745.7	0.00	0.00	0.00	0.00
3100.0	30.02	97.31	2926.1	-101.2	789.2	795.7	0.00	0.00	0.00	0.00
3200.0	30.02	97.31	3012.7	-107.6	838.8	845.7	0.00	0.00	0.00	0.00
3300.0	30.02	97.31	3099.3	-114.0	888.5	895.7	0.00	0.00	0.00	0.00
3400.0	30.02	97.31	3185.9	-120.3	938.1	945.8	0.00	0.00	0.00	0.00
3500.0	30.02	97.31	3272.5	-126.7	987.7	995.8	0.00	0.00	0.00	0.00
3600.0	30.02	97.31	3359.1	-133.0	1037.3	1045.8	0.00	0.00	0.00	0.00
3700.0	30.02	97.31	3445.7	-139.4	1086.9	1095.8	0.00	0.00	0.00	0.00
3800.0	30.02	97.31	3532.3	-145.8	1136.6	1145.9	0.00	0.00	0.00	0.00
3900.0	30.02	97.31	3618.9	-152.1	1186.2	1195.9	0.00	0.00	0.00	0.00
4000.0	30.02	97.31	3705.4	-158.5	1235.8	1245.9	0.00	0.00	0.00	0.00
4100.0	30.02	97.31	3792.0	-164.9	1285.4	1295.9	0.00	0.00	0.00	0.00
4200.0	30.02	97.31	3878.6	-171.2	1335.0	1346.0	0.00	0.00	0.00	0.00
4300.0	30.02	97.31	3965.2	-177.6	1384.6	1396.0	0.00	0.00	0.00	0.00
4400.0	30.02	97.31	4051.8	-184.0	1434.3	1446.0	0.00	0.00	0.00	0.00
4500.0	30.02	97.31	4138.4	-190.3	1483.9	1496.0	0.00	0.00	0.00	0.00
4600.0	30.02	97.31	4225.0	-196.7	1533.5	1546.1	0.00	0.00	0.00	0.00
4700.0	30.02	97.31	4311.6	-203.0	1583.1	1596.1	0.00	0.00	0.00	0.00
4800.0	30.02	97.31	4398.1	-209.4	1632.7	1646.1	0.00	0.00	0.00	0.00
4900.0	30.02	97.31	4484.7	-215.8	1682.4	1696.1	0.00	0.00	0.00	0.00
5000.0	30.02	97.31	4571.3	-222.1	1732.0	1746.2	0.00	0.00	0.00	0.00
5100.0	30.02	97.31	4657.9	-228.5	1781.6	1796.2	0.00	0.00	0.00	0.00
5200.0	30.02	97.31	4744.5	-234.9	1831.2	1846.2	0.00	0.00	0.00	0.00
5300.0	30.02	97.31	4831.1	-241.2	1880.8	1896.2	0.00	0.00	0.00	0.00
5400.0	30.02	97.31	4917.7	-247.6	1930.4	1946.3	0.00	0.00	0.00	0.00
5500.0	30.02	97.31	5004.3	-254.0	1980.1	1996.3	0.00	0.00	0.00	0.00
5600.0	30.02	97.31	5090.8	-260.3	2029.7	2046.3	0.00	0.00	0.00	0.00
5700.0	30.02	97.31	5177.4	-266.7	2079.3	2096.3	0.00	0.00	0.00	0.00
5800.0	30.02	97.31	5264.0	-273.1	2128.9	2146.4	0.00	0.00	0.00	0.00
5841.4	30.02	97.31	5299.9	-275.7	2149.5	2167.1	0.00	0.00	0.00	0.00

Weatherford Planning Report

CONFIDENTIAL

Company: Wolverine Gas & Oil Co of Utah
 Field: Sevier County, Utah
 Site: Pad A-2
 Well: 17-5
 Wellpath: 1

Date: 12/22/2004 Time: 10:23:43 Page: 3
 Co-ordinate(NE) Reference: Well: 17-5, True North
 Vertical (TVD) Reference: SITE 0.0
 Section (VS) Reference: Well (0.00N,0.00E,97.31Azi)
 Plan: 17-5

Section 5 : Start Drop -3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
5900.0	28.26	97.31	5351.1	-279.3	2177.8	2195.6	3.00	-3.00	0.00	180.00
6000.0	25.26	97.31	5440.3	-285.0	2222.4	2240.6	3.00	-3.00	0.00	180.00
6027.2	24.44	97.31	5465.0	-286.5	2233.8	2252.0	3.00	-3.00	0.00	-180.00
6100.0	22.26	97.31	5551.8	-290.2	2262.4	2280.9	3.00	-3.00	0.00	180.00
6119.6	21.67	97.31	5550.0	-291.1	2269.6	2288.2	3.00	-3.00	0.00	180.00
6200.0	19.26	97.31	5625.3	-294.7	2297.5	2316.4	3.00	-3.00	0.00	-180.00
6300.0	16.26	97.31	5720.6	-298.6	2327.8	2346.8	3.00	-3.00	0.00	180.00
6342.0	15.00	97.31	5761.0	-300.0	2339.0	2358.2	3.00	-3.00	0.00	-180.00

Section 6 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
6400.0	15.00	97.31	5817.0	-301.9	2353.9	2373.2	0.00	0.00	0.00	0.00
6500.0	15.00	97.31	5913.6	-305.2	2379.6	2399.1	0.00	0.00	0.00	0.00
6600.0	15.00	97.31	6010.2	-308.5	2405.2	2424.9	0.00	0.00	0.00	0.00
6700.0	15.00	97.31	6106.8	-311.8	2430.9	2450.8	0.00	0.00	0.00	0.00
6800.0	15.00	97.31	6203.4	-315.1	2456.6	2476.7	0.00	0.00	0.00	0.00
6900.0	15.00	97.31	6300.0	-318.4	2482.3	2502.6	0.00	0.00	0.00	0.00
7000.0	15.00	97.31	6396.6	-321.7	2507.9	2528.5	0.00	0.00	0.00	0.00
7100.0	15.00	97.31	6493.2	-325.0	2533.6	2554.3	0.00	0.00	0.00	0.00
7158.8	15.00	97.31	6550.0	-326.9	2548.7	2569.6	0.00	0.00	0.00	0.00

Targets

Name	Description		TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	← Latitude →			← Longitude →				
	Dip.	Dir.						Deg	Min	Sec	Deg	Min	Sec		
NVJ01 1980' FN & 660' FE 17-5 -Rectangle (330x330) -Plan hit target			5761.0	-300.0	2339.0	171879.65	1878754.00	38	48	15.934	N	111	55	31.472	W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
80.0	80.0	20.000	26.000	20"
600.1	600.0	16.000	18.000	16"
2607.8	2500.0	13.375	17.500	13 3/8"
6119.6	5550.0	9.625	12.250	9 5/8"
7158.8	6550.0	7.000	8.500	7"

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
6027.2	5465.0	Twin Creek		0.00	0.00

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 12/30/2004

API NO. ASSIGNED: 43-041-30038

WELL NAME: WOLVERINE FED 17-5

OPERATOR: WOLVERINE GAS & OIL CO (N1655)

CONTACT: RICHARD MORITZ

PHONE NUMBER: 616-458-1150

PROPOSED LOCATION:

SENW 17 230S 010W

SURFACE: 1680 FNL 2281 FWL

SENE BOTTOM: 1980 FNL 0660 FEL

SEVIER

WILDCAT (1)

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU-73528

SURFACE OWNER: 4 - Fee

PROPOSED FORMATION: NAVA

COALBED METHANE WELL? NO

INSPECT LOCATN BY: / /

Tech Review	Initials	Date
Engineering		
Geology		
Surface		

LATITUDE: 38.80554

LONGITUDE: -111.9331

RECEIVED AND/OR REVIEWED:

- Plat
- Bond: Fed[1] Ind[] Sta[] Fee[]
(No. WY 3329)
- Potash (Y/N)
- Oil Shale 190-5 (B) or 190-3 or 190-13
- Water Permit
(No. 63-2529)
- RDCC Review (Y/N)
(Date: _____)
- Fee Surf Agreement (Y/N)
Surface owner is Wolverine

LOCATION AND SITING:

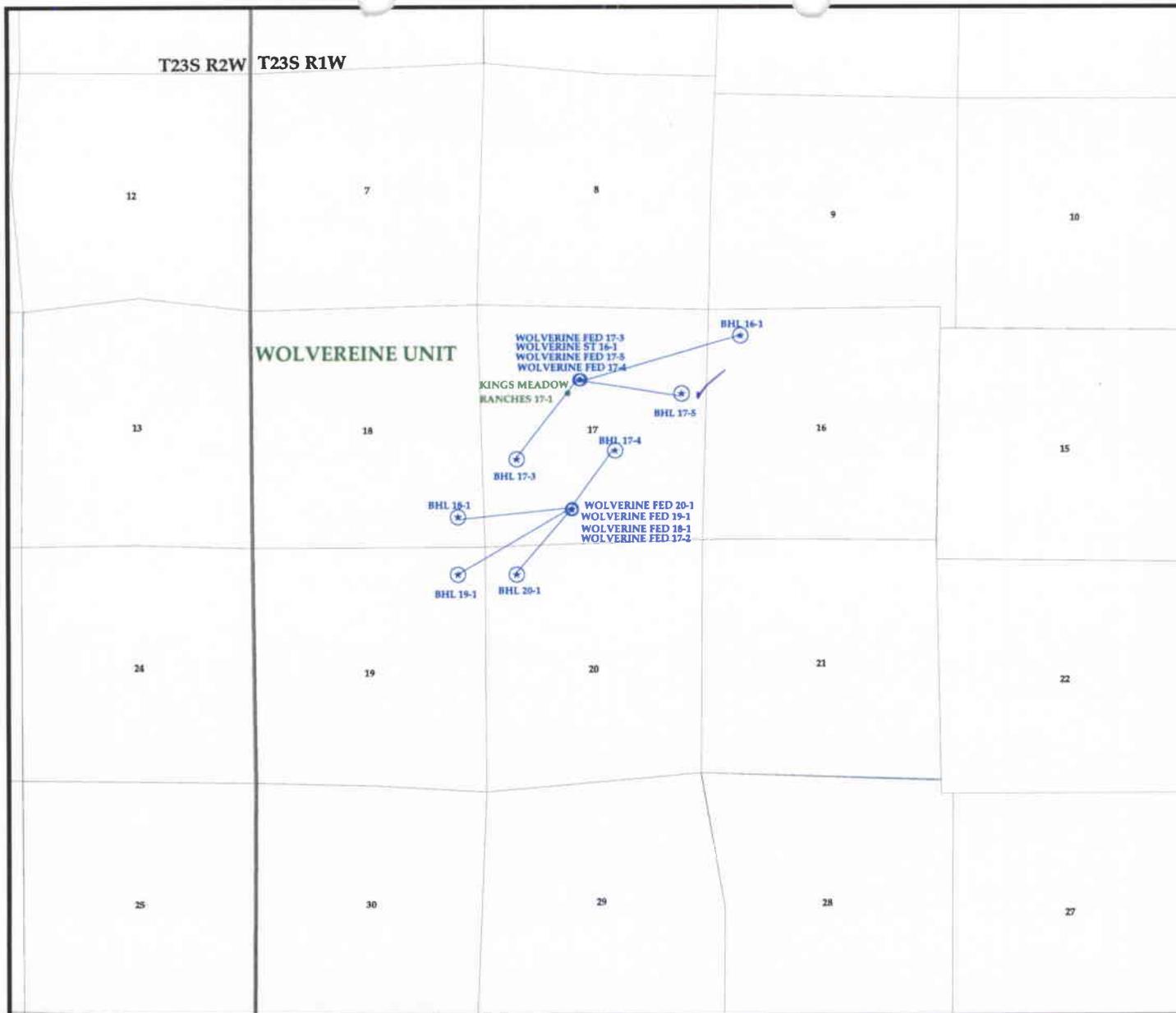
- ___ R649-2-3.
- Unit WOLVERINE
- ___ R649-3-2. General
Siting: 460 From Qtr/Qtr & 920' Between Wells
- ___ R649-3-3. Exception
- ___ Drilling Unit
Board Cause No: _____
Eff Date: _____
Siting: _____
- R649-3-11. Directional Drill

COMMENTS:

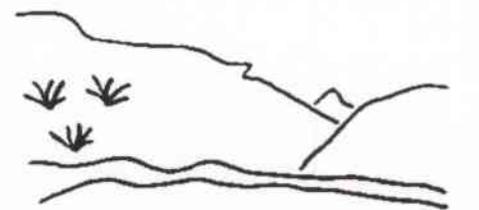
Pres. (Rec'd 9-7-04)

STIPULATIONS:

- 1- Federal Approval*
- 2- Spacing Strip*
- 3- STATEMENT OF BASIS*



OPERATOR: WOLVERINE G&O CO (N1655)
SEC. 17 T.23S R.1W
FIELD: WILDCAT (001)
COUNTY: SEVIER
SPACING: R649-3-11 / DIRECTIONAL DRILLING



Utah Oil Gas and Mining

Wells	Units.shp	Fields.shp
GAS INJECTION	EXPLORATORY	ABANDONED
GAS STORAGE	GAS STORAGE	ACTIVE
LOCATION ABANDONED	NF PP OIL	COMBINED
NEW LOCATION	NF SECONDARY	INACTIVE
PLUGGED & ABANDONED	PENDING	PROPOSED
PRODUCING GAS	PI OIL	STORAGE
PRODUCING OIL	PP GAS	TERMINATED
SHUT-IN GAS	PP GEOTHERML	
SHUT-IN OIL	PP OIL	
TEMP. ABANDONED	SECONDARY	
TEST WELL	TERMINATED	
WATER INJECTION		
WATER SUPPLY		
WATER DISPOSAL		



PREPARED BY: DIANA WHITNEY
 DATE: 12-AUG-2004

ON-SITE PREDRILL EVALUATION
Division of Oil, Gas and Mining

OPERATOR: Wolverine Gas and Oil Company
WELL NAME & NUMBER: Wolverine Federal 17-5
API NUMBER: 43-041-30038
LEASE: Fed **FIELD/UNIT:** _____
LOCATION: 1/4,1/4 SENE Sec: 17 TWP: 23S RNG: 1W 1736 FNL 2268 FWL
LEGAL WELL SITING: 460 F SEC. LINE; 460 F 1/4,1/4 LINE; 920F ANOTHER WELL.
GPS COORD (UTM): X= 430152 E; Y= 4295880 N SURFACE OWNER: Wolverine.

PARTICIPANTS

M. Jones (DOGM), Shaun Burd (Western Land Services), Ed Bonner (SITLA).

REGIONAL/LOCAL SETTING & TOPOGRAPHY

Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat, from where the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area.

SURFACE USE PLAN

CURRENT SURFACE USE: Grazing and wildlife habitat.

PROPOSED SURFACE DISTURBANCE: 180' x 360' w/ 240' x 100' x 10' (excluded) pit.

LOCATION OF EXISTING WELLS WITHIN A 1 MILE RADIUS: 8 proposed, producing, and/or PA wells are within a 1 mile radius of the above proposed well.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: On location and along roadway to production facilities south of 17-1 location.

SOURCE OF CONSTRUCTION MATERIAL: Obtained locally and trucked to site.

ANCILLARY FACILITIES: None anticipated.

WILL DRILLING AT THIS LOCATION GENERATE PUBLIC INTEREST OR CONCERNS? (EXPLAIN): This well will be drilled on a pad consisting of 4 wells, all to be drilled directionally. The pad sits next to a recently drilled vertical well, Kings Meadow Ranches 17-1. Highway 24 runs past all of this activity, therefore any and all activity associated with these wells can be seen by the public, which may increase public interest and/or concern.

WASTE MANAGEMENT PLAN:

Portable chemical toilets will be emptied into the municipal waste treatment system; garbage cans on location will be emptied into centralized dumpsters, which will be emptied into an approved landfill. Drilling fluid, and completion/frac fluid will be removed from the pit upon completion of the well. Cuttings will be buried in the pit unless oil based mud is used. If oil based mud is used disposal of the cuttings should be discussed with the Division. Used oil from drilling operations and support will be hauled to a used oil recycling facility. Produced water will be disposed of at an approved facility.

ENVIRONMENTAL PARAMETERS

AFFECTED FLOODPLAINS AND/OR WETLANDS: Dry washes run throughout the immediate area of the proposed well location.

FLORA/FAUNA: Sagebrush, greasewood, winterfat, 4-wing salt brush, deer rodents, fowl.

SOIL TYPE AND CHARACTERISTICS: Rocky clay.

SURFACE FORMATION & CHARACTERISTICS: Arapien Shale

EROSION/SEDIMENTATION/STABILITY: Erosive upon disturbance.

PALEONTOLOGICAL POTENTIAL: None observed.

RESERVE PIT

CHARACTERISTICS: Dugout earthen, 240'x100'x10', exterior to location.

LINER REQUIREMENTS (Site Ranking Form attached): Liner required.

SURFACE RESTORATION/RECLAMATION PLAN

As per Wolverine.

SURFACE AGREEMENT: Wolverine owns the surface.

CULTURAL RESOURCES/ARCHAEOLOGY: Mountain States Archaeology.

OTHER OBSERVATIONS/COMMENTS

Some alterations are planned to a dry wash on the north side of the location. The appropriate permits with the Division of Water Rights will be obtained prior to any construction.

ATTACHMENTS

Photos of this location were taken and placed on file.

Mark L. Jones
DOGM REPRESENTATIVE

September 7, 2004 / 3:00 pm
DATE/TIME

**Evaluation Ranking Criteria and Ranking Score
For Reserve and Onsite Pit Liner Requirements**

<u>Site-Specific Factors</u>	<u>Ranking</u>	<u>Site Ranking</u>
Distance to Groundwater (feet)		
>200	0	
100 to 200	5	
75 to 100	10	
25 to 75	15	
<25 or recharge area	20	<u>0</u>
Distance to Surf. Water (feet)		
>1000	0	
300 to 1000	2	
200 to 300	10	
100 to 200	15	
< 100	20	<u>0</u>
Distance to Nearest Municipal Well (feet)		
>5280	0	
1320 to 5280	5	
500 to 1320	10	
<500	20	<u>0</u>
Distance to Other Wells (feet)		
>1320	0	
300 to 1320	10	
<300	20	<u>0</u>
Native Soil Type		
Low permeability	0	
Mod. permeability	10	
High permeability	20	<u>10</u>
Fluid Type		
Air/mist	0	
Fresh Water	5	
TDS >5000 and <10000	10	
TDS >10000 or Oil Base Mud Fluid	15	
containing significant levels of hazardous constituents	20	<u>10</u>
Drill Cuttings		
Normal Rock	0	
Salt or detrimental	10	<u>0</u>
Annual Precipitation (inches)		
<10	0	
10 to 20	5	
>20	10	<u>5</u>
Affected Populations		
<10	0	
10 to 30	6	
30 to 50	8	
>50	10	<u>0</u>
Presence of Nearby Utility Conduits		
Not Present	0	
Unknown	10	
Present	15	<u>10</u>

Final Score 35 (Level I Sensitivity)

Sensitivity Level I = 20 or more; total containment is required. consider criteria for excluding pit use.

Sensitivity Level II = 15-19; lining is discretionary.

Sensitivity Level III = below 15; no specific lining is required.

DIVISION OF OIL, GAS AND MINING
APPLICATION FOR PERMIT TO DRILL
STATEMENT OF BASIS

OPERATOR: Wolverine Gas and Oil Company
WELL NAME & NUMBER: Wolverine Federal 17-5
API NUMBER: 43-041-30038
LOCATION: 1/4,1/4 SENE Sec: 17 TWP: 23 S RNG: 1 W 1736 FNL 2268 FWL

Geology/Ground Water:

This location is placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range - Colorado Plateau transition zone. The location is on fee acreage a few miles east of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek, which subsequently flows into the Sevier River. The rancher heavily allocates water rights for the local springs, which arise from the volcanic rocks just to the east, for agriculture.

The well will likely spud into a thin alluvium covering the evaporite-rich Jurassic age Arapien Shale. The proposal calls for a saturated salt mud system from below the surface casing into the Navajo Sandstone. The quality of any surface water that manages to escape upstream allocation is diminished as it flows past the location and into Brine Creek, owing to the evaporite minerals in the Arapien Shale. Any water contained in the Arapien Shale is also likely to be of poor quality. A Division of Water Rights publication notes that aquifers in close proximity to the Arapien Shale are also likely to contain ground water with high TDS levels. Inasmuch as there do not appear to be any intervening aquifers documented in this area, which lie between the Arapien Shale and the underlying Navajo Sandstone, it is unlikely that any high quality ground water will be encountered.

At this location it is unlikely that any high quality ground water resource will be encountered in the Navajo, at that depth, in any strata drilled below the Navajo or at all. The proposed casing, cementing and drilling fluid program should be sufficient to control and isolate the poor quality ground waters expected to be encountered in a well at this location. Two surface water rights, a point to point right and an underground water right are found within a mile to the east. The underground water right is for a 156' deep well more than half a mile east.

Reviewer: Christopher J. Kierst **Date:** October 19, 2004

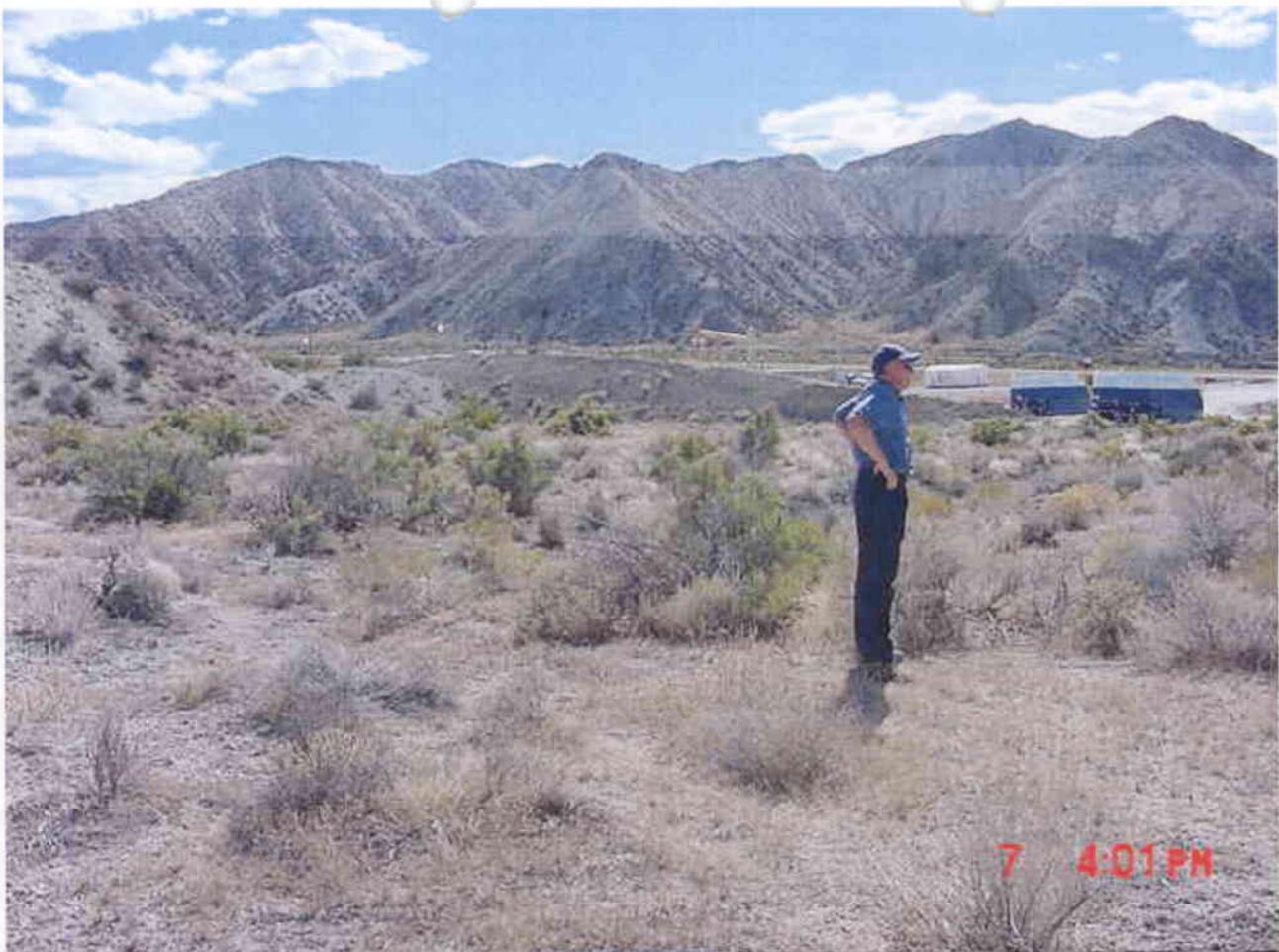
Surface:

Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat from which the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area. Some alterations are planned to a dry wash on the north side of the location. The appropriate permits with the Division of Water Rights will be obtained prior to any construction. Shaun Burd, Western Land Services, represented Wolverine Gas and Oil, while Ed Bonner was in attendance, representing the SITLA royalty interest. Sevier County was invited but chose not to attend this on-site evaluation.

Reviewer: Mark L. Jones **Date:** October 14, 2004

Conditions of Approval/Application for Permit to Drill:

1. A synthetic liner with a minimum thickness of 12 mills shall be properly installed and maintained in the reserve pit.
2. Diversion of drainages around the pad.
3. Berm the location.



7 4:01 PM



7 4:02 PM





State Online Services

Agency List

Business.utah.gov

Search Utah.gov

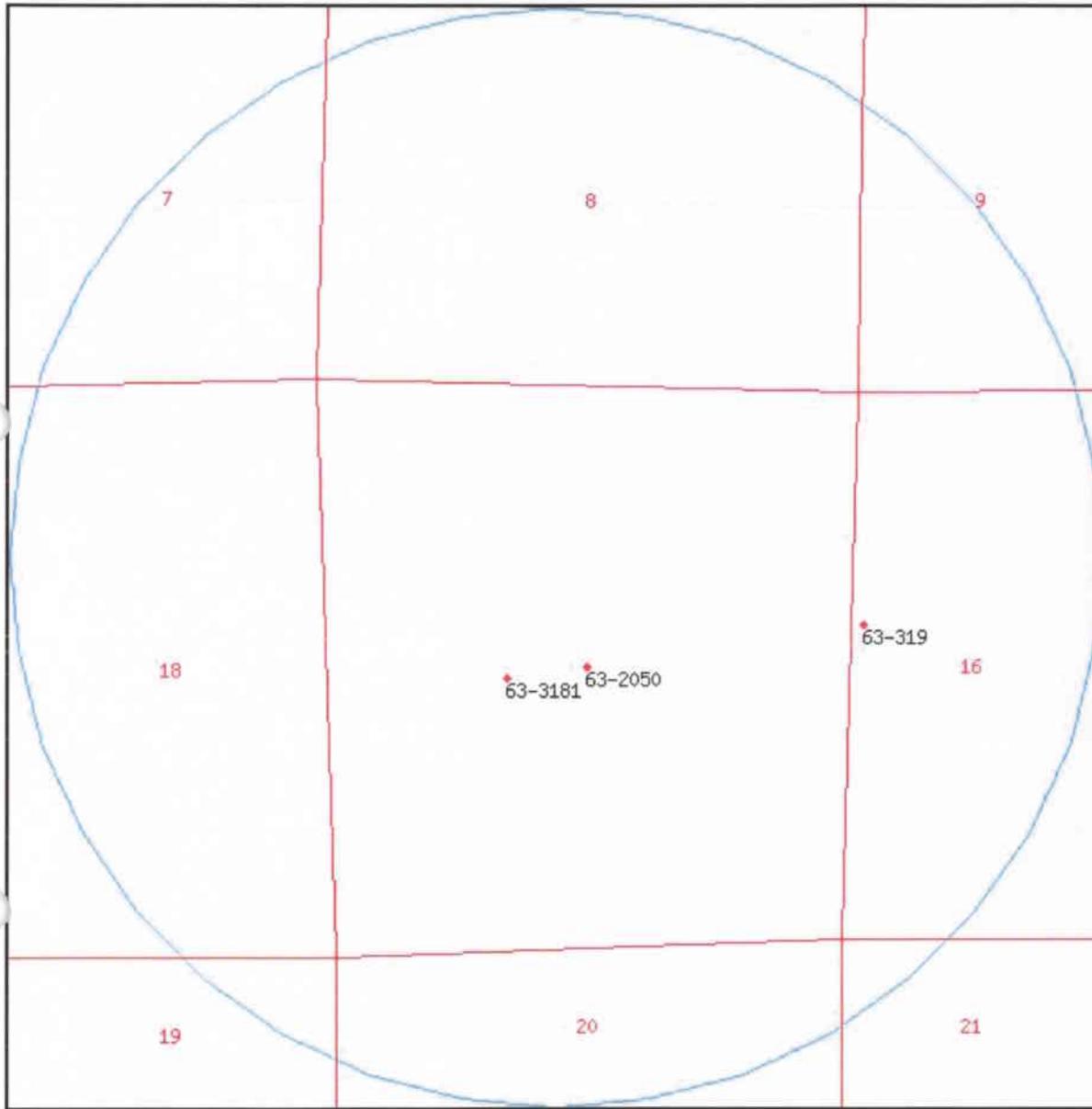


UTAH DIVISION OF WATER RIGHTS

WRPLAT Program Output Listing

Version: 2004.03.26.00 Rundate: 10/20/2004 09:49 AM

Radius search of 5280 feet from a point S1736 E2268 from the NW corner, section 17, Township 23S, Range 1W, SL
b&m Criteria:wrtypes=W,C,E podtypes=all status=U,A,P usetypes=all



Water Rights

WR Number	Diversion Type/Location	Well Log	Status	Priority	Uses	CFS	ACFT	Owner Name
<u>63-2050</u>	Point to Point 0 0 17 23S 1W SL		P	19030000	OS	0.010	0.000	RICHFIELD DISTRICT USA BUREAU OF LAND MANAGEMENT 150 EAST 900 NORTH
<u>63-3180</u>	Surface S2900 E1800 NW 17 23S 1W SL		P	18700000	I	3.160	0.000	G. W. NEBEKER SIGURD UT 84657
<u>63-3181</u>	Surface S2900 E1800 NW 17 23S 1W SL		P	18700000	DS	0.010	0.000	G. W. NEBEKER SIGURD UT 84657
<u>63-319</u>	Underground N330 E100 W4 16 23S 1W SL		P	19560121	S	0.015	0.000	A. BRYANT AND J. LLEWELLYN YOUNG RICHFIELD UT 84701

[Natural Resources](#) | [Contact](#) | [Disclaimer](#) | [Privacy Policy](#) | [Accessibility Policy](#)

STATE OF UTAH – DIVISION OF WATER RIGHTS – DATA PRINT OUT for 63-319(A27813)

(WARNING: Water Rights makes NO claims as to the accuracy of this data.) RUN DATE: 10/20/2004 Page 1

WRNUM: 63-319 APPLICATION/CLAIM NO.: A27813 CERT. NO.:

OWNERSHIP*****

NAME: A. Bryant and J. Llewellyn Young
ADDR: Richfield UT 84701

LAND OWNED BY APPLICANT?

DATES, ETC.*****

FILED: 01/21/1956 | PRIORITY: 01/21/1956 | PUB BEGAN: | PUB ENDED: | NEWSPAPER:
ProtestEnd: | PROTESTED: [No] | HEARNG HLD: | SE ACTION: [] | ActionDate:02/28/1957 | PROOF DUE:
EXTENSION: | ELEC/PROOF: [] | ELEC/PROOF: | CERT/WUC: | LAP, ETC: | PROV LETTER:
RENOVATE: | RECON REQ: | TYPE: []

PD Book No. Map:

Type of Right: Application to Appropriate Source of Info: Application to Appropriate Status: No Prf Req

LOCATION OF WATER RIGHT*****

FLOW: 0.015 cfs SOURCE: Underground Water Well

COUNTY: Sevier COMMON DESCRIPTION:

POINT OF DIVERSION -- UNDERGROUND:
(1) N 330 ft E 100 ft from W4 cor, Sec 16, T 23S, R 1W, SLBM
Comment:

USES OF WATER RIGHT*****

WATER RIGHT CLAIMS IN COMMON: 319

###STOCKWATERING: 250 Cattle or Equivalent Diversion Limit: PERIOD OF USE: 01/01 TO 12/31
*****E N D O F D A T A*****



State of Utah

Department of
Natural Resources

ROBERT L. MORGAN
Executive Director

Division of
Oil, Gas & Mining

MARY ANN WRIGHT
Acting Division Director

OLENE S. WALKER
Governor

GAYLE F. McKEACHNIE
Lieutenant Governor

December 30, 2004

Wolverine Gas & Oil Company of Utah, LLC
One Riverfront Plaza
Grand Rapids, MI 49503

Re: Wolverine Federal 17-5 Well, Surface Location 1680' FNL, 2281' FWL, SE NW, Sec. 17, T. 23 South, R. 1 West, Bottom Location 1980' FNL, 660' FEL, SE NE, Sec. 17, T. 23 South, R. 1 West, Sevier County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. § 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-041-30038.

Sincerely,

John R. Baza
Associate Director

pab

Enclosures

cc: Sevier County Assessor
Bureau of Land Management, Moab District Office

Operator: Wolverine Gas & Oil Company of Utah, LLC
Well Name & Number Wolverine Federal 17-5
API Number: 43-041-30038
Lease: UTU-73528

Surface Location: SE NW **Sec.** 17 **T.** 23 South **R.** 1 West
Bottom Location: SE NE **Sec.** 17 **T.** 23 South **R.** 1 West

Conditions of Approval

1. General

Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

2. Notification Requirements

Notify the Division within 24 hours of spudding the well.

- Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.

- Contact Dan Jarvis at (801) 538-5338

3. Reporting Requirements

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. State approval of this well does not supersede the required federal approval, which must be obtained prior to drilling.

5. In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

6. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)

7. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

CONFIDENTIAL

DIVISION OF OIL, GAS AND MINING**SPUDDING INFORMATION**Name of Company: WOLVERINE GAS & OIL COMPANY OF UT LLCWell Name: WOLVERINE FED 17-5Api No: 43-041-30038 Lease Type: FEDERAL - FEE SURFACESection 17 Township 23S Range 01W County SEVIERDrilling Contractor UNIT RIG # 111**SPUDDED:**Date 03/14/05Time 7:00 AMHow DRY**Drilling will Commence:** _____Reported by STEVE HASHTelephone # 1-918-599-9400Date 03/17/2005 Signed CHD

COPY

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OM B No. 1004-0137
Expires: March 31, 2007

007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator **Wolverine Gas & Oil Co of Utah, LLC**

3a. Address
One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI

3b. Phone No. (include area code)
616-458-1150

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
**SHL: 1680' FNL & 2281' FWL
 BHL: 1300' FNL & 1180' FEL (chg fr 1980' FNL & 660' FEL)
 23S 1W 17**

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Fed Exploration Unit

8. Well Name and No.
Wolverine Federal #17-5

9. API Well No.
43-041-30038

10. Field and Pool, or Exploratory Area
Exploratory

11. County or Parish, State
Sevier Co, UT

CONFIDENTIAL

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other file corrected svy plat & adjust BHL
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Permission is requested to amend the approved drilling & casing program (ver4 2004.12.23) as shown below to (ver5 2005.03.10); submit a corrected survey plat for minor lat/long correction.

Surface Csg>>> FR: 16" 65ppf H40 BTC @ 0-600' in fresh mud system TO: 13-3/8" 68ppf J55 BTC @ 0-2000' in salt mud sys using 20" 2M diverter; cmt to surf with 1500 sx lead lite weight (12.8ppg; 1.97 yld) plus 350 sx tail Prem G (15.8ppg; 1.15 yld) must circ to surface, top out cmt if reqd

Protection Csg>>> FR: 9-5/8" 47ppf N80 LTC @ 0-5825' (csg pt in Arapien) in salt mud system using 20" 2M diverter TO: 9-5/8" 47ppf N80 LTC @ 0-5900' (csg pt in Twin Creek) in salt mud system using 13-5/8" 5M dbl ram BOP w/ 5M annular; lift 1900' cmt to 4000' with 450 sx 50:50 POZ (13.0 ppg; 1.71 yld)

Production Csg>>> FR: 5-1/2" 17ppf N80 LTC @ 0-6970' TO: 7" 26ppf N80 LTC @ 0-7000' in fresh mud system cmt to 5400' in 9-5/8" with 400 sx 50/50 POZ (14.35ppg; 1.27 yld)

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - Thank you

Accepted by the
Utah Division of
Oil, Gas and Mining

Federal Approval Of This
Action Is Necessary

SENT TO OPERATOR
3-12-05

Date: 3/16/05
By: [Signature]

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)
Steven R Hash - EXACT Engineering Inc

Title
Consulting Engineer (918) 599-9400

Signature *Steven R. Hash*

Date 03/11/2005

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

RECEIVED

Approved by _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title _____ Date **MAR 15 2005**
Office _____

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

CONFIDENTIAL

Section 17, T.23 S., R.1 W., S.L.B. & M.

PROJECT Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE
NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.
SEVIER COUNTY, UTAH

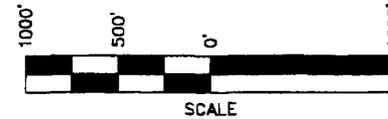
LEGEND

- ⊕ = SECTION CORNERS LOCATED
- ⊖ = QUARTER SECTION CORNERS LOCATED
- = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT
THE WOLVERINE FEDERAL #17-5 LOCATION.
LOCATED IN THE SE 1/4 OF THE NW 1/4
OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.
SEVIER COUNTY.

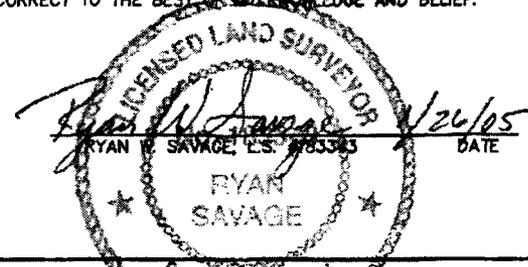
BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN
THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM
FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER
MY SUPERVISION, AND THAT THE SAME ARE TRUE AND
CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

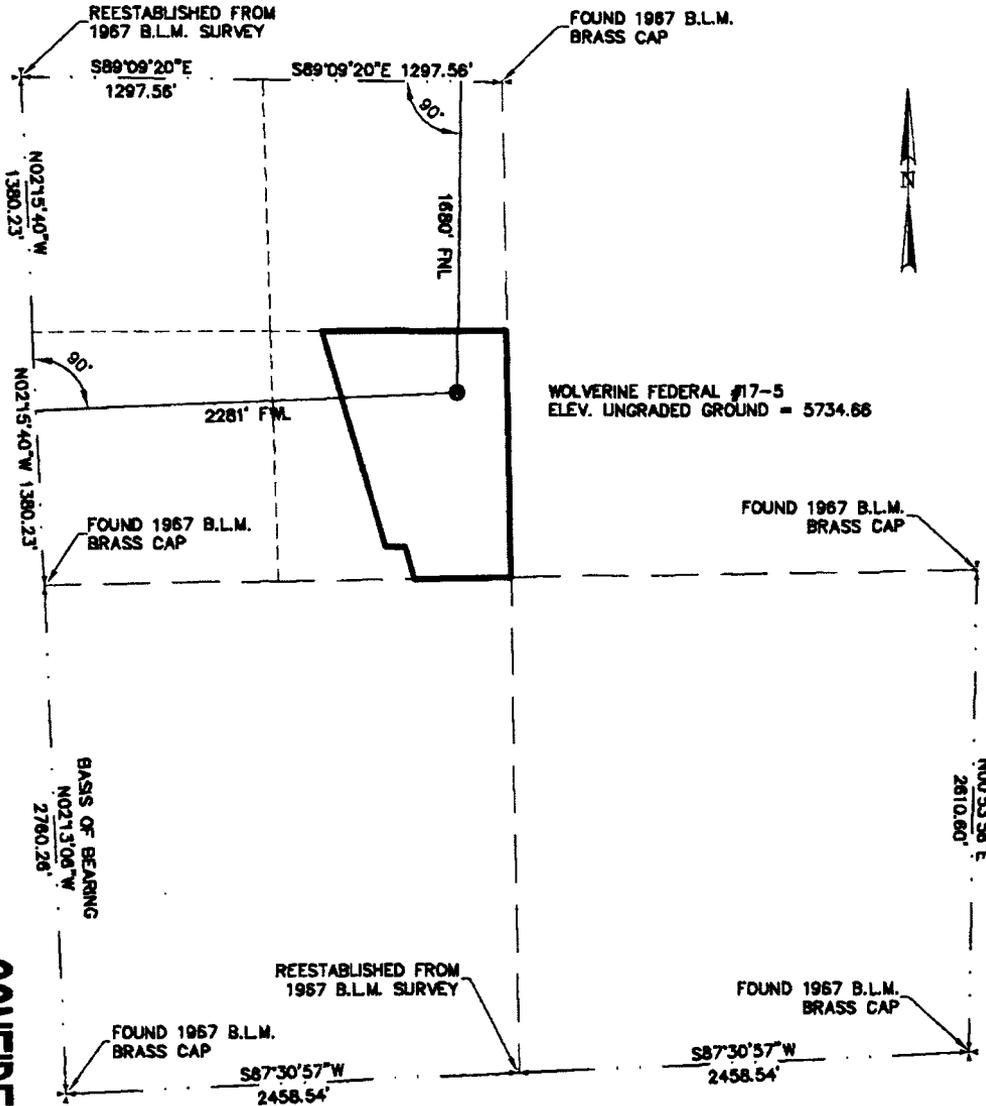


Jones & Demille Engineering
135 South 100 West, Richfield, Utah 84701
Phone (801) 886-8288
Fax (435) 886-8288
www.jonesanddemille.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

DESIGNED	SURVEYED T.W.G.	CHECKED R.W.S.	DRAWN K.B.B.	PROJECT NO.	SHEET NO.
DATE Oct. 2004		DWG NAME Wells	SCALE 1" = 1000'	0406-160	1



BASIS OF BEARINGS

BASIS OF BEARING USED WAS N02°13'06"W BETWEEN THE SOUTHWEST CORNER
AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.

LATITUDE = 38°48'19.4600" (38.805405556)
LONGITUDE = -111°56'02.0708" (111.933908556)

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COPY

COPY

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WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

DRILLING PROGNOSIS

Wolverine Federal # 17-5
NE NE SEC 17-T23S-R1W
SEVIER CO., UTAH

BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 7000' MD (6650'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 (b) located in SE NW of Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location: 1680' fnl & 2281' fwl of Sec 17 T23N – R01W
BHL @ top of NVJO1 (5918' TVD) 1300' fnl & 1180' fel of Sec 17 T23N – R01W

20" conductor casing will be cemented to surface at approximately 120 ft BGL. 13-3/8" surface csg will be set & cemented to surface in a 17-1/2" hole deviated to approximately 22 deg at +/- 2000' MD (+/- 1970' TVD). A 12-1/4" hole will then be drilled to +/- 5900' MD (5600' TVD) maintaining approximately a 22 deg tangent section. 9-5/8" protective casing will be set from surface to TD & cemented over the lower 2000'. An 8-1/2" hole will then be drilled to +/- 7000' (6650' TVD). 7" production casing will then be run from TD back to surface & cemented to approximately 500' into the 9-5/8" protective casing.

EMERGENCY NUMBERS

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896-5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

CONFIDENTIAL

United States Bureau of Land Management

Contact Al McKee (801) 539-4045 24 hrs prior to spudding

Utah Division of Oil, Gas and Mining

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

GENERAL INFORMATION

OBJECTIVE: Navajo 1 @ 5918' (TVD) **ELEVATION:** 5736' GL (actual) 5753' KB

PROJECTED TOTAL DEPTH: 7000' MD; 6650' TVD

SURFACE LOCATION: 1680' FNL & 2281' FWL
Section 17-23S-1W

COUNTY: Sevier **STATE:** Utah

DIRECTIONS TO LOCATION: From the town of Sigurd, Utah go south
approximately 3.5 miles on Hwy #24 to location on
the left side of the road.

PROPOSED CASING PROGRAM:

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Measured Depth Set
30"	20"	.25 wall	X42	PE welded	120'
17-1/2"	13-3/8"	68#	J-55	BTC	0'-2000'
12-1/4"	9-5/8"	* 47#	N-80	LTC	0'-5900'
8-1/2"	7"	** 26#	N-80	LTC	0'-7000'

* due to availability 47# HCP-110 may be substituted for N80
 ** due to availability 23# HCP-110 may be substituted for N80

Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
30"	20"	Conductor	Na			
17-1/2"	13-3/8"	12.259	14.375	.6946	1.0982	.8406
12 1/4"	9-5/8"	8.525	10.625	0.3127	0.4659	0.4340
8-1/2"	7"	6.250	7.656	.1268	.1438	.2148

GEOLOGIC FORMATIONS:

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	Abnormal Psi
Arapien	Surf – 5539'	Surf – 5840'	sh, siltstone, salt, evaporites		
TwinCreek1	5539- 5918'	5840' – 6243'	Carbonates	X	
Navajo 1	5918' - 6650'	6243' – 7000'	Sandstone w/ minor shale	X	
Total Depth	6650'	7000'			

CONSTRUCTION OF SURFACE LOCATION

360' x 180' Pad
 150' x 100' x 10' Reserve Pit with a 12 mil synthetic liner
 96" diameter tin horn cellar, 10' deep.
 Flare pit a minimum of 100' from wellhead.

SURFACE HOLE: 0' to 2000'

Directionally drill a 17-1/2" hole with a PDC bit, mud motor & MWD equipment to approximately 2000' using salt mud system from prior well (make hole to fit 13-3/8" casing). Loss circulation could be a problem in this interval and, if such occurs, begin pumping LCM sweeps. If loss circulation cannot be healed with +25 ppb LCM, consider dry drilling (no returns). Maintain hole angle and direction in keeping with the attached directional plan.

PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

Bottom to Top (see attached 2M Diverter diagram)

20" 2M x 20" SOW flange
 20" 2M x 20" 2M mud cross w/ (2) 7-1/16" 2M side outlets
 one outlet 7-1/16" HCR valve w/ 6" blooie line to mud separator & flare pit
 one outlet (blank)
 20" 2M Annular Preventer
 20" 2M flanged btm drilling nipple w/ fillup line
 Upper kelly cock valves with handles available
 Safety valves and subs to fit all drill string connections in use
 Inside BOP or float sub available

Testing Procedure:

Annular Preventer & HCR Valve

The annular preventer will be pressure tested to 500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 1) When the annular is initially installed

- 2) Whenever any seal subject to test pressure is broken
 - 3) Following related repairs and at 30 day intervals
- The annular preventer will be functionally operated once per week. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

MUD PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>FLUID LOSS</u>
0 -2000'	9.6 – 10.2	Salt mud	40-55	N/C

Note: Sweep hole every 100 – 200 feet or as needed for hole cleaning. Maintain maximum flowrates for hole cleaning. Use salt gel and FlowZan polymer to maintain properties. Reduce fluid loss with Anco-Phalt and/or Gilsonite for lubricity.

CASING PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0 - 2000'	13-3/8"	2000'	68#	J-55	BT&C	

Casing Running Sequence:

guide shoe, 1 jt of 13-3/8" 68# J55 BT&C, Float collar, balance of 13-3/8" 68# J55 BT&C, centralizers as reqd. RU cement co., hold safety meeting, test lines, cement 13-3/8" casing per cement company recommendation and the cementing guide below. Displace with fresh water or mud.

CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

1500 sx lite weight

Mixed at: 12.8 ppg
Yield: 1.97 ft³/sx

Tail: 350 sx Premium G

Mixed at: 15.8 ppg
Yield: 1.15 ft³/sx

MUST CIRCULATE CEMENT TO SURFACE If the cement does **not** circulate to surface contact the BLM and UDOGM office for further instructions and remedial actions. Be prepared to top out with premium cement.

WOC A TOTAL OF 24 HOURS:

Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on a 13-5/8" 5M x 13-3/8" SOW casing head w/ MBS spool configured to hang both 9-5/8" and 7" csg strings without nipling down BOPE. NU a 13-5/8" 5M double ram BOP w/ 5M annular and 5M choke manifold rigged to mud/gas separator, mud tanks and flare pit.

PROTECTIVE CASING HOLE: 2000' to 5900'

Trip in the hole with a 12-1/4" bit, mud motor & MWD. Drill float, shoe and 20' of new hole. Perform a formation integrity test to 10.5 ppg mud weight equivalent. Directionally drill a 12-1/4" hole with a PDC and/or a TCI rock bit, mud motor & MWD equipment to approximately 5900' MD using same salt mud system as above. Loss circulation, moving salt, gypsum and anhydrite stringers may be a problem in this interval. Maintain hole angle and azimuth in keeping with the attached directional plan. Protective casing should be set into the top of the Twin Creek interval.

**PRESSURE CONTROL AND SAFETY EQUIPMENT FOR
PROTECTIVE CASING STRING**

Bottom to Top (see attached 5M BOP diagram)

13-5/8" 5M x 13-3/8" SOW casing head w/ (2) 2-1/16" SSO's (for 9-5/8")

13-5/8" 5M x 13-5/8" 5M multi-bowl casing spool (for 7")

13-5/8" 5M x 13-5/8" spacer spool

13-5/8" 5M x 13-5/8" 5M mud cross with (2) side outlets:

one outlet 2-1/16" kill line

one outlet 2-1/16" choke line

13-5/8" 5M double ram BOP w/ 5" pipe rams top & CSO rams btm

13-5/8" 5M Annular Preventer

13-5/8" 5M rotating head

Connect BOP to choke manifold with pressure guage

Upper kelly cock valves with handles available

Safety valves and subs to fit all drill string connections in use

Inside BOP or float sub available

Testing Procedure:

Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 1) When the annular is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

Blowout Preventer

The BOP, choke manifold and related equipment will be pressure tested to 4500 psi, or 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

- 1) When the BOP is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and

will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller.

A flare line will be installed after the choke manifold, extending 100 feet from the center of the drill hole to a separate flare pit.

MUD PROGRAM FOR PROTECTIVE CASING HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>FLUID LOSS</u>
2000' – 5900'	9.8 – 10.2	Salt Mud	36 - 50	20-30cc or less

Maintain a salt mud system as salt and gypsum sections are drilled. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole.

CASING PROGRAM FOR PROTECTIVE CASING HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0' – TD'	9-5/8"	5900'	* 47#	N-80	LT&C	

Rig up casing tools and run 9-5/8" protective casing as follows:

Float shoe, 2 joint of 9-5/8" * 47.0# N-80 LT&C casing, float collar, 6 centralizers, middle shoe joint and one every other joint for 12 jts, run balance of 9-5/8" 47# N-80

* due to availability 47# HCP-110 may be substituted

CEMENT PROGRAM FOR PROTECTIVE CASING

450 sx 50:50 POZ

Weight: 13.0 ppg

Yield: 1.71 ft³/sx

TOC at ~ 4000'; Calculate cement volume based on gauge hole plus 30% excess. Displace with mud. Land 9-5/8" csg with casing mandrel. Lay down landing joint. Clean pits and prepare for next hole section.

PRODUCTION HOLE: 5900 to 7000'

Trip in the hole with an 8-1/2" insert bit, mud motor & MWD. Drill float, shoe and 20' of new hole. Perform an integrity test to 10 ppg mud weight equivalent.

PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION CASING STRING

Same as Protective String above due to utilization of Multi-Bowl Casing Head Assembly – Land 9-5/8" through BOPE with casing mandrel, release, test & proceed to drilling production hole section – Nipple down & nipple up NOT required – all BOPE remains intact – normal periodic pressure testing remains on schedule

MUD PROGRAM FOR PRODUCTION HOLE

<u>DEPTH</u>	<u>MUD WEIGHT</u>	<u>TYPE</u>	<u>VISC</u>	<u>pH</u>	<u>FLUID LOSS</u>
5900' - 7000'	8.3 – 9.0	LC Polymer	34-50	9.0-10.0	10cc or Less

EVALUATION PROGRAM FOR PRODUCTION HOLE

At TD, circulate and condition hole clean for logs. Short trip to the intermediate casing monitoring well closely. TOH for logs. Run Induction tool as run #1 to determine hole conditions for logging. Adjust tool configurations depending on hole condition.

Mudlogger: From 2000' to total depth.

Electric Logs:

Tool	PCP to TD
SDL/DSN/GR (DSN PCP to surface casing)	Yes
HRI/GR/SP (DLL/MSFL/SP/GR available if brine system)	Yes
EMI	Yes
NMR	Yes

DST: none planned

Cores: none planned

CASING PROGRAM FOR PRODUCTION HOLE

<u>DEPTH</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>WT</u>	<u>GRADE</u>	<u>THREAD</u>	<u>REMARKS</u>
0' - TD'	7"	7000'	* 26#	N-80	LT&C	

* due to availability 23# HCP-110 may be substituted for N-80

Rig up casing tools and run 7" production casing as follows:

Float shoe, 1 joint of 7" 26# N-80 LT&C casing, Float collar, Run balance of 7" 26# N80.

CEMENT PROGRAM FOR PRODUCTION CASING

400 sx (50:50) POZ Premium	Weight:	14.35 ppg
2 % Bentonite	Yield:	1.27 ft ³ /sx
Friction reducer, salt & flocele		

TOC at \pm 5400 ft in 9-5/8" csg

Calculate cement volume based on log caliper +/- 25%. Displace cement w/water.

Hang 85-90% casing weight in slips, ND, cut off, install B-section and night cap. Clean pits and release rig.

SCHEDULE

Location preparation is presently scheduled to begin on or about March 10, 2005

Drilling operations are anticipated to begin on or about March 12, 2005

end

PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by:
 EXACT Engineering, Inc
 Tulsa, OK (918) 599-9400

2M Diverter Stack --- to be utilized while drilling holes for surface and protective casing thru Arapien formation section

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Wolverine Federal #17-5

Max. anticipated surface pressure 2000 psi

Annular B.O.P. 20" 2M W.P.

B.O.P. none Rams none" na W.P.
 (Pipe/Blind)

B.O.P. none Rams _____" _____ W.P.
 (Pipe/Blind)

Check Valve none" _____ W.P.

Valve none" _____ W.P.

Valve blind flange W.P.

Valve 7-1/16" 2M "HCR"

Valve none

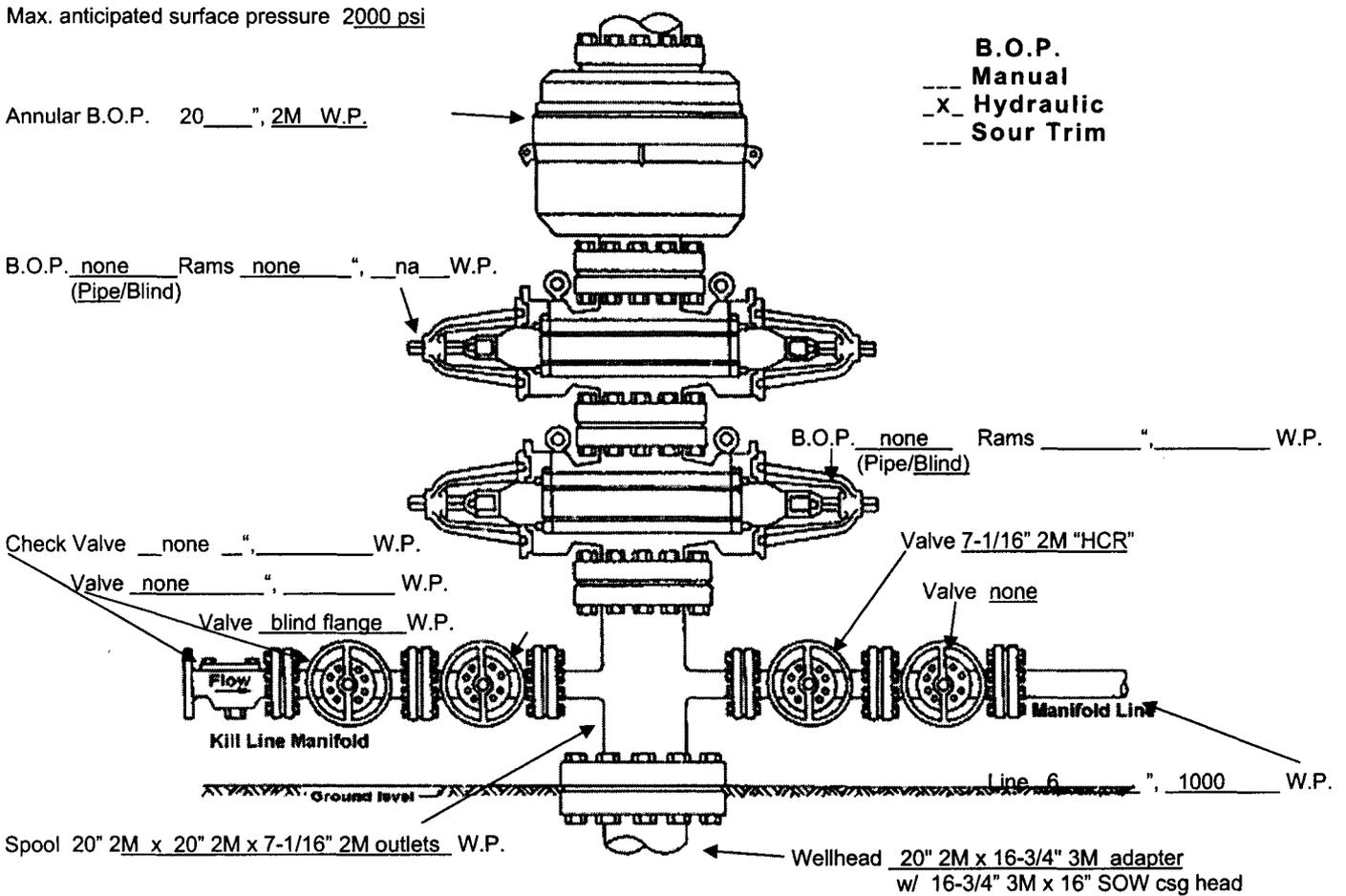
Ground level

Line 6" _____ W.P.

Spool 20" 2M x 20" 2M x 7-1/16" 2M outlets W.P.

Wellhead 20" 2M x 16-3/4" 3M adapter
 w/ 16-3/4" 3M x 16" SOW csg head

B.O.P.
 ___ Manual
 Hydraulic
 ___ Sour Trim



PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by:
 EXACT Engineering, Inc
 Tulsa, OK (918) 599-9400

Operator:
 Wolverine Gas & Oil Co. of Utah, LLC

Well name and number
 Wolverine Federal #17-5

5M BOP Stack --- to be utilized while drilling holes for production casing thru Twin Creek & Navajo intervals

Max. anticipated surface pressure 3000 psi

B.O.P.
 --- **Manual**
 Hydraulic
 --- **Sour Trim**

Annular B.O.P. 11" - 5M WP

B.O.P. 4-1/2" pipe Rams 11" - 5M W.P.
 (Pipe/Blind)

B.O.P. blind Rams 11" - 5M W.P.
 (Pipe/Blind)

Check Valve 2-1/16" 5M WP

Valve 2-1/16" 5M WP

Valve 2-1/16" 5M WP

Valve 3-1/16" 5M WP

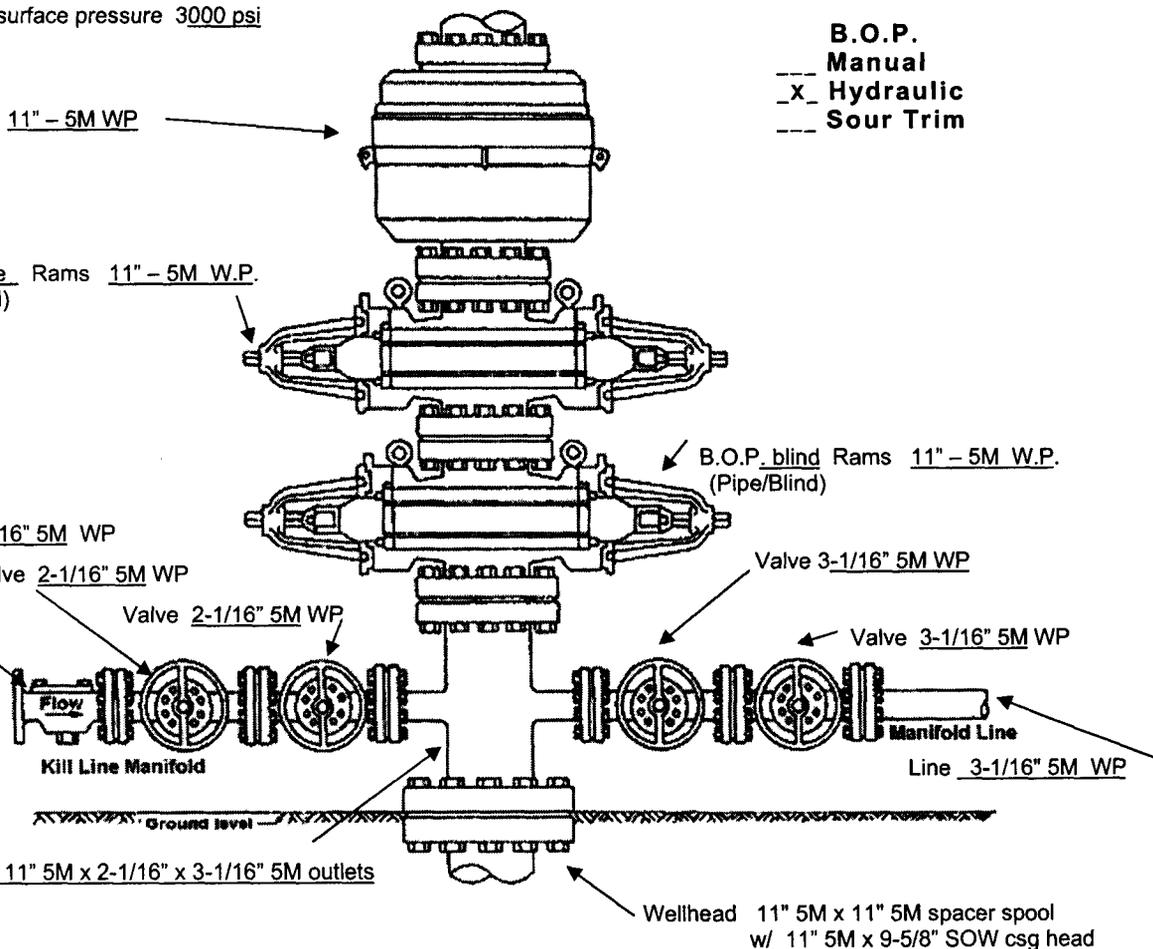
Valve 3-1/16" 5M WP

Manifold Line
 Line 3-1/16" 5M WP

Ground level

Spool 11" 5M x 11" 5M x 2-1/16" x 3-1/16" 5M outlets

Wellhead 11" 5M x 11" 5M spacer spool w/ 11" 5M x 9-5/8" SOW csg head





Wolverine Gas & Oil Co of Utah, LLC

SITE DETAILS

Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

Azimuths to True North
Magnetic North: 12.95°

WELL DETAILS

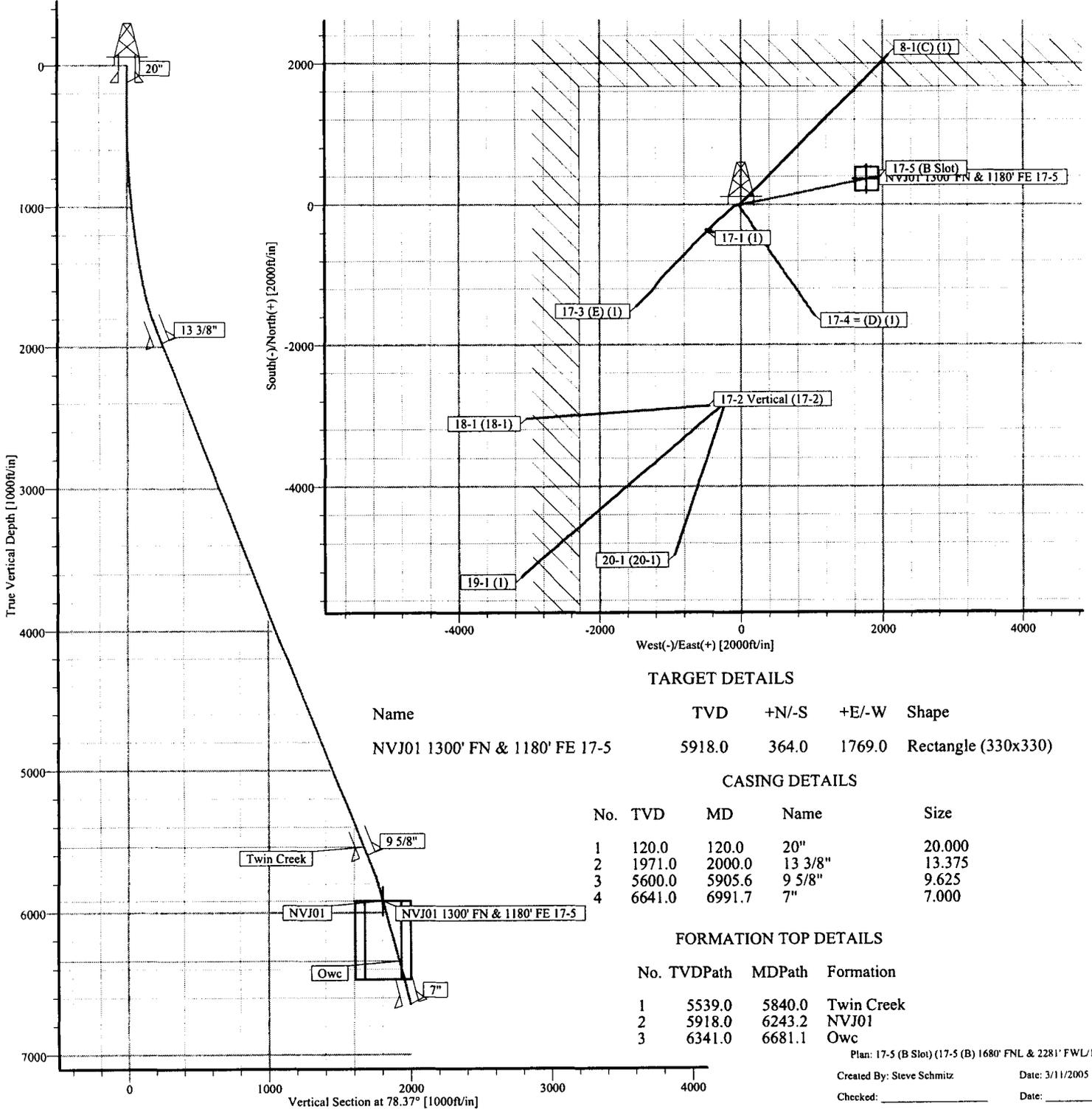
Magnetic Field
Strength: 52133nT
Dip Angle: 64.57°
Date: 7/6/2004
Model: igrf2005

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Site Centre	Latitude: 38°48'19.460N	Longitude: 111°56'02.879W
17-5 (B) 1680' FNL & 2281' FWL	0.0	64.0	6733931.69	1516756.09	38°48'19.460N	111°56'02.071W	N/A		

Water Depth: 0.0
Positional Uncertainty: 0.0
Convergence: -0.28

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	78.37	300.0	0.0	0.0	0.00	78.37	0.0	
3	1506.1	10.00	78.37	1500.0	21.2	102.8	0.83	78.37	105.0	
4	1896.0	21.70	78.37	1874.4	42.6	206.9	3.00	0.00	211.3	
5	6020.0	21.70	78.37	5706.3	349.9	1700.2	0.00	0.00	1735.8	
6	6243.2	15.00	78.37	5918.0	364.0	1769.0	3.00	180.00	1806.1	NVJ01 1300' FN & 1180' FE 17-5
7	6991.7	15.00	78.37	6641.0	403.0	1958.8	0.00	0.00	1999.8	



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
NVJ01 1300' FN & 1180' FE 17-5	5918.0	364.0	1769.0	Rectangle (330x330)

CASING DETAILS

No.	TVD	MD	Name	Size
1	120.0	120.0	20"	20.000
2	1971.0	2000.0	13 3/8"	13.375
3	5600.0	5905.6	9 5/8"	9.625
4	6641.0	6991.7	7"	7.000

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	5539.0	5840.0	Twin Creek
2	5918.0	6243.2	NVJ01
3	6341.0	6681.1	Owc

Plan: 17-5 (B Slot) (17-5 (B) 1680' FNL & 2281' FWL/1)

Created By: Steve Schmitz

Date: 3/11/2005

Checked: _____

Date: _____



Volverine Gas & Oil Co of Utah, LLC

SITE DETAILS

Pad A-1
 T23S R01W Sevier County, Utah
 NW/4 SE/4 Sec 17
 Site Centre Latitude: 38°48'19.460"N
 Longitude: 111°56'02.879"W
 Water Depth: 0.0
 Positional Uncertainty: 0.0
 Convergence: -0.28

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	78.37	300.0	0.0	0.0	0.00	78.37	0.0	
3	1506.1	10.00	78.37	1500.0	21.2	102.8	0.83	78.37	105.0	
4	1896.0	21.70	78.37	1874.4	42.6	206.9	3.00	0.00	211.3	
5	6020.0	21.70	78.37	5706.3	349.9	1780.2	0.00	0.00	1735.8	
6	6243.2	15.00	78.37	5918.0	364.0	1769.0	3.00	180.00	1806.1	NVJ01 1300' FN & 1180' FE 17-5
7	6991.7	15.00	78.37	6641.0	403.0	1958.8	0.00	0.00	1999.8	

CASING DETAILS

No.	TVD	MD	Name	Size
1	120.0	120.0	20"	20.000
2	1971.0	2000.0	13 3/8"	13.375
3	5600.0	5905.6	9 5/8"	9.625
4	6641.0	6991.7	7"	7.000

WELL DETAILS

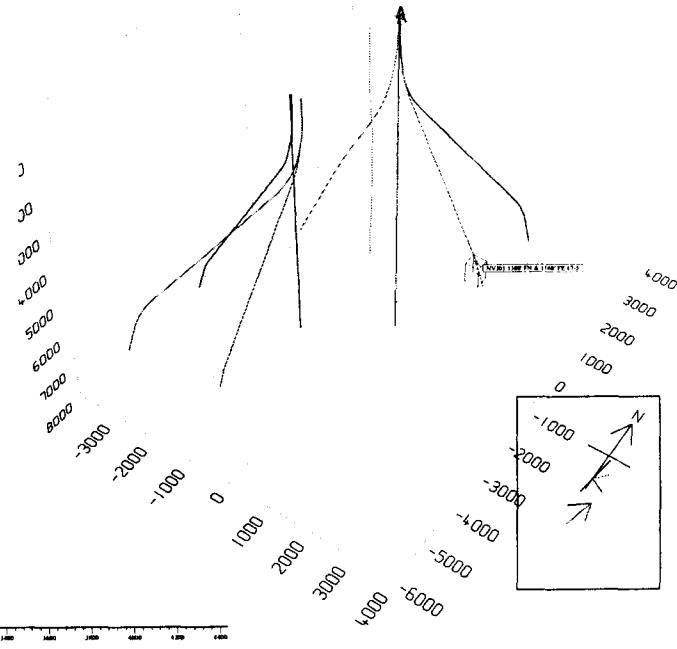
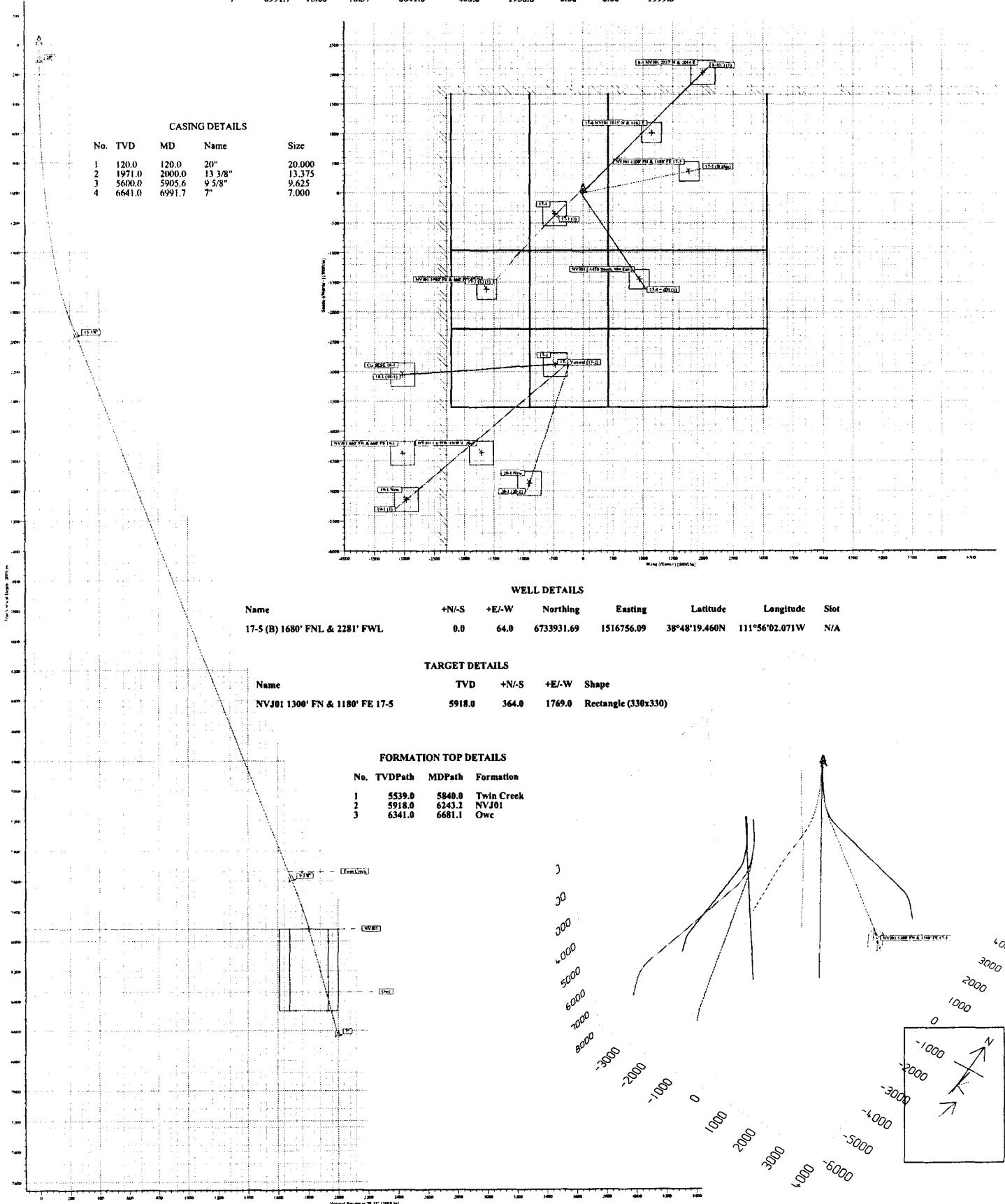
Name	+N/-S	+E/-W	Northng	Easting	Latitude	Longitude	Slot
17-5 (B) 1680' FNL & 2281' FWL	0.0	64.0	6733931.69	1516756.09	38°48'19.460N	111°56'02.071W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
NVJ01 1300' FN & 1180' FE 17-5	5918.0	364.0	1769.0	Rectangle (330x330)

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	5539.0	5840.0	Twin Creek
2	5918.0	6243.2	NVJ01
3	6341.0	6681.1	Owc



Weatherford Planning Report

Company: Wolverine Gas & Oil Co of Utah	Date: 3/11/2005	Time: 19:00:34	Page: 1
Field: Sevier County, Utah	Co-ordinate(NE) Reference: Well: 17-5 (B) 1680' FNL & 2281' FWL	Vertical (TVD) Reference: SITE 0.0	
Site: Pad A-2	Section (VS) Reference: Well (0.00N,0.00E,78.37Azi)	Plan: 17-5 (B Slot)	
Well: 17-5 (B) 1680' FNL & 2281' FWL			
Wellpath: 1			

Field: Sevier County, Utah

Map System: US State Plane Coordinate System 1983	Map Zone: Utah, Central Zone
Geo Datum: GRS 1980	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: igrf2005

Site: Pad A-2
T23S R01W Sevier County, Utah
NW/4 SE/4 Sec 17

Site Position: From: Geographic	Northing: 6733932.00 ft	Latitude: 38 48 19.460 N
	Easting: 1516692.09 ft	Longitude: 111 56 2.879 W
Position Uncertainty: 0.0 ft		North Reference: True
Ground Level: 0.0 ft		Grid Convergence: -0.28 deg

Well: 17-5 (B) 1680' FNL & 2281' FWL

Slot Name:

Well Position: +N/-S 0.0 ft	Northing: 6733931.69 ft	Latitude: 38 48 19.460 N
+E/-W 64.0 ft	Easting: 1516756.09 ft	Longitude: 111 56 2.071 W
Position Uncertainty: 0.0 ft		

Wellpath: 1

Current Datum: SITE	Height: 0.0 ft	Drilled From: Surface
Magnetic Data: 7/6/2004		Tie-on Depth: 0.0 ft
Field Strength: 52133 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)		Declination: 12.95 deg
ft	+N/-S ft	Mag Dip Angle: 64.57 deg
0.0	0.0	+E/-W ft
		Direction deg
		0.0
		78.37

Plan: 17-5 (B Slot)

Date Composed: 7/6/2004
Version: 1
Tied-to: From Surface

Principal: Yes

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	78.37	300.0	0.0	0.0	0.00	0.00	0.00	78.37	
1506.1	10.00	78.37	1500.0	21.2	102.8	0.83	0.83	0.00	78.37	
1896.0	21.70	78.37	1874.4	42.6	206.9	3.00	3.00	0.00	0.00	
6020.0	21.70	78.37	5706.3	349.9	1700.2	0.00	0.00	0.00	0.00	
6243.2	15.00	78.37	5918.0	364.0	1769.0	3.00	-3.00	0.00	180.00	NVJ01 1300' FN & 1180' FE
6991.7	15.00	78.37	6641.0	403.0	1958.8	0.00	0.00	0.00	0.00	

Section 1 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	78.37	100.0	0.0	0.0	0.0	0.00	0.00	0.00	78.37
120.0	0.00	78.37	120.0	0.0	0.0	0.0	0.00	0.00	0.00	78.37
200.0	0.00	78.37	200.0	0.0	0.0	0.0	0.00	0.00	0.00	78.37
300.0	0.00	78.37	300.0	0.0	0.0	0.0	0.00	0.00	0.00	78.37

Section 2 : Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
400.0	0.83	78.37	400.0	0.1	0.7	0.7	0.83	0.83	0.00	0.00
500.0	1.66	78.37	500.0	0.6	2.8	2.9	0.83	0.83	0.00	0.00
600.0	2.49	78.37	599.9	1.3	6.4	6.5	0.83	0.83	0.00	0.00
700.0	3.32	78.37	699.8	2.3	11.3	11.6	0.83	0.83	0.00	0.00
800.0	4.15	78.37	799.6	3.6	17.7	18.1	0.83	0.83	0.00	0.00
900.0	4.97	78.37	899.2	5.2	25.5	26.0	0.83	0.83	0.00	0.00
1000.0	5.80	78.37	998.8	7.1	34.7	35.4	0.83	0.83	0.00	0.00

Weatherford Planning Report

Company: Wolverine Gas & Oil Co of Utah
Field: Sevier County, Utah
Site: Pad A-2
Well: 17-5 (B) 1680' FNL & 2281' FWL
Wellpath: 1

Date: 3/11/2005 **Time:** 19:00:34 **Page:** 2
Co-ordinate(NE) Reference: Well: 17-5 (B) 1680' FNL & 2281' FWL
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,78.37Azi)
Plan: 17-5 (B Slot)

Section 2 : Start Build 0.83

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1100.0	6.63	78.37	1098.2	9.3	45.3	46.3	0.83	0.83	0.00	0.00
1200.0	7.46	78.37	1197.5	11.8	57.3	58.5	0.83	0.83	0.00	0.00
1300.0	8.29	78.37	1296.5	14.6	70.7	72.2	0.83	0.83	0.00	0.00
1400.0	9.12	78.37	1395.4	17.6	85.6	87.4	0.83	0.83	0.00	0.00
1506.1	10.00	78.37	1500.0	21.2	102.8	105.0	0.83	0.83	0.00	0.00

Section 3 : Start Build 3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1600.0	12.82	78.37	1592.0	24.9	121.0	123.6	3.00	3.00	0.00	0.00
1700.0	15.82	78.37	1688.9	29.9	145.2	148.3	3.00	3.00	0.00	0.00
1800.0	18.82	78.37	1784.4	35.9	174.4	178.0	3.00	3.00	0.00	0.00
1896.0	21.70	78.37	1874.4	42.6	206.9	211.3	3.00	3.00	0.00	0.02

Section 4 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
1900.0	21.70	78.37	1878.1	42.9	208.4	212.8	0.00	0.00	0.00	0.00
2000.0	21.70	78.37	1971.0	50.3	244.6	249.7	0.00	0.00	0.00	0.00
2100.0	21.70	78.37	2064.0	57.8	280.8	286.7	0.00	0.00	0.00	0.00
2200.0	21.70	78.37	2156.9	65.2	317.0	323.7	0.00	0.00	0.00	0.00
2300.0	21.70	78.37	2249.8	72.7	353.2	360.6	0.00	0.00	0.00	0.00
2400.0	21.70	78.37	2342.7	80.1	389.4	397.6	0.00	0.00	0.00	0.00
2500.0	21.70	78.37	2435.6	87.6	425.6	434.6	0.00	0.00	0.00	0.00
2600.0	21.70	78.37	2528.5	95.0	461.9	471.5	0.00	0.00	0.00	0.00
2700.0	21.70	78.37	2621.5	102.5	498.1	508.5	0.00	0.00	0.00	0.00
2800.0	21.70	78.37	2714.4	109.9	534.3	545.5	0.00	0.00	0.00	0.00
2900.0	21.70	78.37	2807.3	117.4	570.5	582.4	0.00	0.00	0.00	0.00
3000.0	21.70	78.37	2900.2	124.8	606.7	619.4	0.00	0.00	0.00	0.00
3100.0	21.70	78.37	2993.1	132.3	642.9	656.4	0.00	0.00	0.00	0.00
3200.0	21.70	78.37	3086.0	139.7	679.1	693.3	0.00	0.00	0.00	0.00
3300.0	21.70	78.37	3179.0	147.2	715.3	730.3	0.00	0.00	0.00	0.00
3400.0	21.70	78.37	3271.9	154.6	751.5	767.3	0.00	0.00	0.00	0.00
3500.0	21.70	78.37	3364.8	162.1	787.7	804.2	0.00	0.00	0.00	0.00
3600.0	21.70	78.37	3457.7	169.5	823.9	841.2	0.00	0.00	0.00	0.00
3700.0	21.70	78.37	3550.6	177.0	860.2	878.2	0.00	0.00	0.00	0.00
3800.0	21.70	78.37	3643.5	184.4	896.4	915.1	0.00	0.00	0.00	0.00
3900.0	21.70	78.37	3736.4	191.9	932.6	952.1	0.00	0.00	0.00	0.00
4000.0	21.70	78.37	3829.4	199.3	968.8	989.1	0.00	0.00	0.00	0.00
4100.0	21.70	78.37	3922.3	206.8	1005.0	1026.1	0.00	0.00	0.00	0.00
4200.0	21.70	78.37	4015.2	214.2	1041.2	1063.0	0.00	0.00	0.00	0.00
4300.0	21.70	78.37	4108.1	221.7	1077.4	1100.0	0.00	0.00	0.00	0.00
4400.0	21.70	78.37	4201.0	229.2	1113.6	1137.0	0.00	0.00	0.00	0.00
4500.0	21.70	78.37	4293.9	236.6	1149.8	1173.9	0.00	0.00	0.00	0.00
4600.0	21.70	78.37	4386.9	244.1	1186.0	1210.9	0.00	0.00	0.00	0.00
4700.0	21.70	78.37	4479.8	251.5	1222.3	1247.9	0.00	0.00	0.00	0.00
4800.0	21.70	78.37	4572.7	259.0	1258.5	1284.8	0.00	0.00	0.00	0.00
4900.0	21.70	78.37	4665.6	266.4	1294.7	1321.8	0.00	0.00	0.00	0.00
5000.0	21.70	78.37	4758.5	273.9	1330.9	1358.8	0.00	0.00	0.00	0.00
5100.0	21.70	78.37	4851.4	281.3	1367.1	1395.7	0.00	0.00	0.00	0.00
5200.0	21.70	78.37	4944.4	288.8	1403.3	1432.7	0.00	0.00	0.00	0.00
5300.0	21.70	78.37	5037.3	296.2	1439.5	1469.7	0.00	0.00	0.00	0.00
5400.0	21.70	78.37	5130.2	303.7	1475.7	1506.6	0.00	0.00	0.00	0.00
5500.0	21.70	78.37	5223.1	311.1	1511.9	1543.6	0.00	0.00	0.00	0.00
5600.0	21.70	78.37	5316.0	318.6	1548.1	1580.6	0.00	0.00	0.00	0.00
5700.0	21.70	78.37	5408.9	326.0	1584.3	1617.5	0.00	0.00	0.00	0.00
5800.0	21.70	78.37	5501.9	333.5	1620.6	1654.5	0.00	0.00	0.00	0.00
5840.0	21.70	78.37	5539.0	336.4	1635.0	1669.3	0.00	0.00	0.00	0.00
5900.0	21.70	78.37	5594.8	340.9	1656.8	1691.5	0.00	0.00	0.00	0.00
5905.6	21.70	78.37	5600.0	341.3	1658.8	1693.6	0.00	0.00	0.00	0.00
6000.0	21.70	78.37	5687.7	348.4	1693.0	1728.4	0.00	0.00	0.00	0.00
6020.0	21.70	78.37	5706.3	349.9	1700.2	1735.8	0.00	0.00	0.00	0.00

Weatherford Planning Report

Company: Wolverine Gas & Oil Co of Utah
Field: Sevier County, Utah
Site: Pad A-2
Well: 17-5 (B) 1680' FNL & 2281' FWL
Wellpath: 1

Date: 3/11/2005
Co-ordinate(NE) Reference: Well: 17-5 (B) 1680' FNL & 2281' FWL
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,78.37Azi)
Plan: 17-5 (B Slot)

Page: 3

Section 4 : Start Hold

MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	TFO
----	------	------	-----	-------	-------	----	-----	-------	------	-----

Section 5 : Start Drop -3.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
6100.0	19.30	78.37	5781.2	355.5	1727.7	1763.8	3.00	-3.00	0.00	180.00
6200.0	16.30	78.37	5876.4	361.7	1757.6	1794.4	3.00	-3.00	0.00	180.00
6243.2	15.00	78.37	5918.0	364.0	1769.0	1806.1	3.00	-3.00	0.00	180.00

Section 6 : Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
6300.0	15.00	78.37	5972.9	367.0	1783.4	1820.8	0.00	0.00	0.00	0.00
6400.0	15.00	78.37	6069.5	372.2	1808.7	1846.6	0.00	0.00	0.00	0.00
6500.0	15.00	78.37	6166.0	377.4	1834.1	1872.5	0.00	0.00	0.00	0.00
6600.0	15.00	78.37	6262.6	382.6	1859.5	1898.4	0.00	0.00	0.00	0.00
6681.1	15.00	78.37	6341.0	386.8	1880.0	1919.4	0.00	0.00	0.00	0.00
6700.0	15.00	78.37	6359.2	387.8	1884.8	1924.3	0.00	0.00	0.00	0.00
6800.0	15.00	78.37	6455.8	393.0	1910.2	1950.2	0.00	0.00	0.00	0.00
6900.0	15.00	78.37	6552.4	398.3	1935.5	1976.1	0.00	0.00	0.00	0.00
6991.7	15.00	78.37	6641.0	403.0	1958.8	1999.8	0.00	0.00	0.00	0.00

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec	<--- Longitude ---> Deg Min Sec
NVJ01 1300' FN & 1180' FE 17-5			5918.0	364.0	1769.0	6734287.11	1518526.84	38 48 23.057 N	111 55 39.725 W
-Rectangle (330x330)									
-Plan hit target									

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
120.0	120.0	20.000	26.000	20"
2000.0	1971.0	13.375	17.500	13 3/8"
5905.6	5600.0	9.625	12.250	9 5/8"
6991.7	6641.0	7.000	8.500	7"

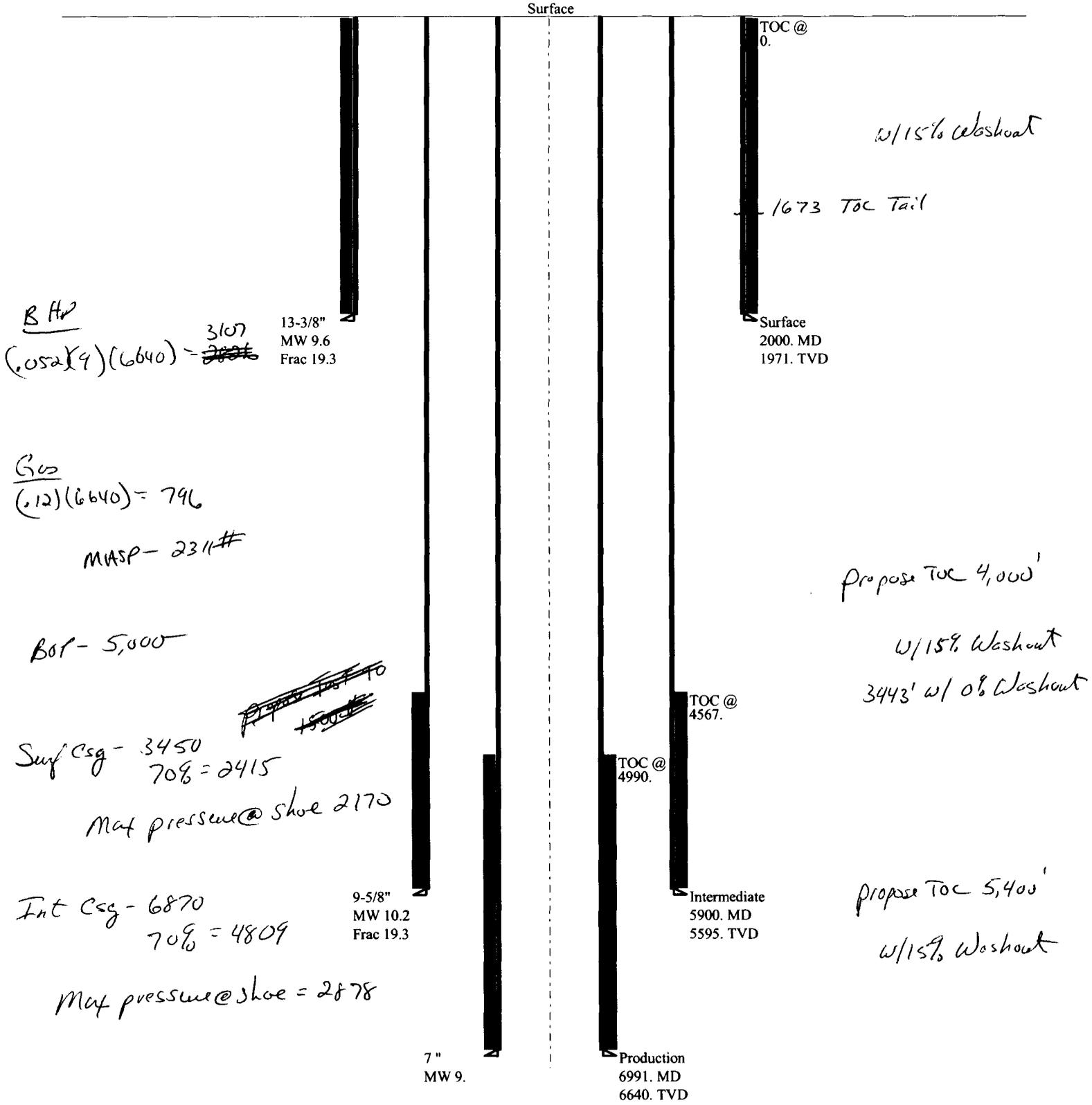
Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
5840.0	5539.0	Twin Creek		0.00	0.00
6243.2	5918.0	NVJ01		0.00	0.00
6681.1	6341.0	Owc		0.00	0.00

03-05 Wolverine Rederal 17

Casing Schematic

Surface



Well name:	03-05 Wolverine Rederal 17-5	
Operator:	Wolverine Gas & Oil	Project ID:
String type:	Surface	43-041-30038
Location:	Sevier County	

Design parameters:

Collapse
Mud weight: 9.600 ppg
Design is based on evacuated pipe.

Minimum design factors:

Collapse:
Design factor 1.125

Environment:

H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 103 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 1,500 ft

Burst

Max anticipated surface pressure: 1,760 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 1,997 psi

Burst:
Design factor 1.00

Cement top: Surface

Tension:
8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Directional well information:
Kick-off point 0 ft
Departure at shoe: 250 ft
Maximum dogleg: 3 °/100ft
Inclination at shoe: 21.7 °

Tension is based on buoyed weight.
Neutral point: 1,701 ft

Re subsequent strings:
Next setting depth: 5,900 ft
Next mud weight: 10.200 ppg
Next setting BHP: 3,126 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 2,000 ft
Injection pressure 2,000 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	2000	13.375	68.00	J-55	Buttress	1971	2000	12.29	270

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	983	1950	1.984	1997	3450	1.73	115	1069	9.31 B

Prepared by: Clinton Dworshak
Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: March 16, 2005
Salt Lake City, Utah

Remarks:
Collapse is based on a vertical depth of 1971 ft, a mud weight of 9.6 ppg. The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	03-05 Wolverine Rederal 17-5	
Operator:	Wolverine Gas & Oil	Project ID:
String type:	Intermediate	43-041-30038
Location:	Sevier County	

Design parameters:

Collapse
Mud weight: 10.200 ppg
Design is based on evacuated pipe.

Burst
Max anticipated surface pressure: 2,433 psi
Internal gradient: 0.120 psi/ft
Calculated BHP: 3,104 psi

No backup mud specified.

Minimum design factors:

Collapse:
Design factor: 1.125

Burst:
Design factor: 1.00

Tension:
8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Tension is based on buoyed weight.
Neutral point: 4,979 ft

Environment:

H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 153 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 1,500 ft

Cement top: 4,567 ft

Directional well information:
Kick-off point: 0 ft
Departure at shoe: 1692 ft
Maximum dogleg: 3 °/100ft
Inclination at shoe: 21.7 °

Re subsequent strings:
Next setting depth: 7,000 ft
Next mud weight: 9.000 ppg
Next setting BHP: 3,273 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 5,900 ft
Injection pressure: 5,900 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	5900	9.625	47.00	N-80	LT&C	5595	5900	8.625	556.1

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	2964	4760	1.606	3104	6870	2.21	223	905	4.06 J

Prepared by: Clinton Dworshak
Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: March 16, 2005
Salt Lake City, Utah

Remarks:
Collapse is based on a vertical depth of 5595 ft, a mud weight of 10.2 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.

Well name:

03-05 Wolverine Federal 17-5

Operator: **Wolverine Gas & Oil**

String type: Production

Project ID:

43-041-30038

Location: Sevier County

Design parameters:

Collapse

Mud weight: 9.000 ppg
Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 168 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 1,500 ft

Cement top: 4,990 ft

Burst

Max anticipated surface pressure: 2,308 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 3,105 psi

No backup mud specified.

Tension:

8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Directional well information:

Kick-off point 0 ft
Departure at shoe: 2000 ft
Maximum dogleg: 3 °/100ft
Inclination at shoe: 15 °

Tension is based on buoyed weight.

Neutral point: 6,055 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	6991	7	26.00	N-80	LT&C	6640	6991	6.151	366.5
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	3105	5410	1.743	3105	7240	2.33	149	519	3.48 J

Prepared by: Clinton Dworshak
Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: March 16, 2005
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 6640 ft, a mud weight of 9 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.

009

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

FORM 6

ENTITY ACTION FORM

Operator: Wolverine Gas and Oil Company of Utah, LLC Operator Account Number: N 1655
 Address: 55 Campau NW, One Riverfront Plaza
 city Grand Rapids
 state MI zip 49503-2616 Phone Number: (616) 458-1150

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130038	Wolverine Federal 17-5		NENE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
A	99999	14626	3/14/2005		3/24/05		
Comments: <u>NAVA</u> CONFIDENTIAL							

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
Comments:							

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
Comments:							

ACTION CODES:

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

Steven R Hash - Consulting Engineer

Name (Please Print)

Steven R. Hash

Signature

EXACT (918) 599-9400

3/21/2005

Title

Date

(5/2000)

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MAR 21 2005

DIV. OF OIL, GAS & MINING

EXACT Engineering, Inc.

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
 Registered Professional Engineer
 stevehash@exactengineering.com

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March 22, 2005

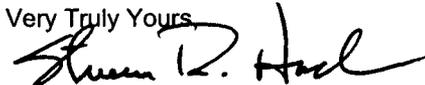
Mr. Dustin Doucet
 Utah Division of Oil, Gas & Mining
 1594 West North Temple, Suite 1210
 Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-5 well
 Sec 17 T23S R01W
 Sevier Co., UT
 API# 43-041-30038

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from inception on March 12, 2005 through March 21, 2005. The well was spudded at 7:00am on March 14, 2005. We are presently drilling 17-1/2" hole at 1896' expecting to set 13-3/8" csg immediately below 2000'. We respectfully request that the enclosed information remain confidential.

Very Truly Yours,



Steven R. Hash
 Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Sue Benson
 EXACT Engineering, Inc. well file

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DIV. OF OIL, GAS & MINING

Petroleum Engineering Consulting, Personnel & Jobsite Supervision
 complete well design, construction & management, drilling, completion, production, pipelines, appraisals,
 due diligence, acquisitions, procedures, temporary personnel and field supervision

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE 03/21/05	WELL Wolverine Federal 17-5	CONTRACTOR Unit Rig #111	COUNTY, STATE Sevier, UT	SPUD DATE 3/14/05	API# 43-041-30038	SUPERVISOR Darren Naylor	
DAYS F/ SPUD 8	PRESENT OPERATIONS @ MIDNIGHT Drilling	TOTAL DEPTH 1,896	PROGRESS 80	DRILLING TIME 12.00	ROP 6.7	FORMATION Arapiean	AUTH. DEPTH 7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
8.6	31	nc	tr.	7.0	tr	1.6	5	5	3/4	1820	3/21/09.00	8,000	500		13,200

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA	IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM	WOB	DULL CONDITION		
															T	B	G
RR2	17.500	DPI	SC65	427	1961943	2.15		1816		80	12.00		120	15			

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	SLOW PUMP		
													60 spm	80 spm	100 spm
1	National	6	8	2.96	70	207							1		
2	National	6	8	2.96	70	207							2		
Both				5.92	140	414				250					

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.
17 1/2" Bit	1.50		
Directional Assembly	110.00		
5 - 6 5/8" SWDP	150.00		
19 - 5" SWDP	570.00		
Jars	32.00		
4 - 5" HWDP	120.00		
Total BHA:	983.50		
STRING WT.	BHA WT.	PU WT.	SO WT.
85	70	90	80

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapiean			
GAS DATA			
BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS
SHOWS			
GAS UNITS	FROM	TO	ROP (FT/HR)
GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO	
Rig No	Unit 111
Cell Narren	918-645-6671
Last BOP Test	
Next BOP Test	
Last Safety Meeting	
Last BOP Drill	
Last Operate Pipe Rar	
Last Operate Blind Ra	
Last Operate Annular	
LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
1,592	14.90	79.90	1574	147	18	146	1.60	MWD	1,687	16.40	79.40	1666	172	23	171	1.60	MWD
1,780	16.00	81.70	1755	198	27	197	0.80	MWD	1,874	16.70	81.20	1845	224	31	223	0.76	MWD

DAILY ACTIVITY

FROM	TO	LAST 24 HOURS:
0:00	3:00	3.00 POOH for directional assembly
3:00	5:00	2.00 PU directional tools & bit
5:00	8:00	3.00 RIH
8:00	19:30	11.50 Drill & surveys 1816 to 1894, lost returns
19:30	23:00	3.50 Build volume, mix mud & LCM to 40%. Trying to drill when volume allowed.
23:00	0:00	1.00 Drill & surveys 1894 to 1896
0:00		
0:00		
21:30		
0:00		
0:00		
0:00		
0:00		
0:00		6am Drilling @ 1934
0:00		
0:00		
Daily Total	24.00	

CONFIDENTIAL

COST DATA

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR	
03/19/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	Darren Naylor	
DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
6	Build volume mix LCM	1,775	30	7.50	4.0	Arapiean	7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
9.3	31	nc	tr.	7.0	0.50	4.8	2	6	4/5	1770	3/19/12:30	33,000	2000		54,450

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd" or TFA)			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM	WOB	DULL CONDITION		
						T	B	G											
3	17.500	STC	FDS	427	RR	28	28	28	1745		30	7.50	4.0	N	45	38			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	SLOW PUMP		
													60 spm	80 spm	100 spm
1	National	6	8	2.96	70	207							1		
2	National	6	8	2.96	70	207							2		
Both				5.92	140	414			250						

DRILL STRING

DRILL STRING				GEOLOGIC				GENERAL INFO			
BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.	FORMATION	MD	TVD	LITHOLOGY	RIG INFO			
17 1/2" Bit	1.50			Arapiean				Rig No	Unit 111		
8" DC	30.00							Cell Nnrren	918-645-6671		
5 - 6 5/8" SWDP	150.00							Last BOP Test			
19 - 5" SWDP	570.00							Next BOP Test			
Jars	32.00							Last Safety Meeting			
4 - 5" HWDP	120.00							Last BOP Drill			
								Last Operate Pipe Rar			
								Last Operate Blind Ra			
								Last Operate Annular			
Total BHA:	903.50							Last CASING	NEXT CASING		
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG			
85	70	90	80	300	5,736	17	5,753		20" @ 121 13-3/8" @ 2700		

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
1,120	11.90	87.80	1115	39	10	37	1.80	MWD	1,246	12.30	88.00	1239	65	11	64	0.20	MWD
1,309	12.60	88.70	1300	78	11	78	1.50	MWD	1,372	13.50	84.70	1361	93	12	92	2.30	MWD

DAILY ACTIVITY

FROM	LAST 24 HOURS:		
0:00	1:30	1.50	POOH LD MWD stand mtr. & monels back
1:30	4:30	3.00	PU 8" DC & bit sub, RIH
4:30	5:30	1.00	W&R 1645 to 1745
5:30	8:00	2.50	Drill 1745 to 1757, lost 50% returns
8:00	8:30	0.50	Rig service
8:30	10:30	2.00	Build volume, mix mud & LCM to 20%
10:30	13:00	2.50	Drill 1757 to 1772, lost 100% returns
13:00	19:00	6.00	Build volume, mix mud & LCM to 35%
19:00	21:30	2.50	Drill 1772 to 1775, pumping 400 gpm. Increased rate to 550 gpm. Lost 100% returns
21:30	0:00	2.50	Build volume, mix mud & LCM to 40%
0:00			
0:00			
0:00			
0:00			6am Building volume pumping LCM
0:00			
0:00			
0:00			
Daily Total	24.00		

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COST DATA

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR	
03/18/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	Darren Naylor	
DAYS F/SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
5	POOH to LD Directional assembly	1,745	361	16.50	21.9	Arapiean	7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
9.6	28	nc	tr.	8.0	0.50	6.0	2	6	2/3	1185	3/17/08:30	48,000	1400		79,200

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd" or TFA)	IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM	WOB	DULL CONDITION			
															T	B	G	
2	17.500	DPI	SC65	427	1961943	2.15		1050	1745	695	38.00	18.3	Y	150	12	1		I
												#DIV/0!						
												#DIV/0!						
												#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	SLOW PUMP		
													60 spm	80 spm	100 spm
1	National	6	8	2.96	125	370							1		
2	National	6	8	2.96	125	370							2		
Both				5.92	250	740	65	75	1000	300					

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.	
17 1/2" Bit	1.50			
Directional Assembly	110.00			
5 - 6 5/8" SWDP	150.00			
19 - 5" SWDP	570.00			
Jars	32.00			
4 - 5" HWDP	120.00			
Total BHA:	983.50			
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE
95	85	100	85	200

GEOLOGIC

FORMATION	MD	TVD	LITHOLOGY
Arapiean			
GAS DATA			
BOTTOMS UP TIME	BG GAS	CONN GAS	TRIP GAS
SHOWS			
GAS UNITS	FROM	TO	ROP (FT/RR)
GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG
5,736	17	5,753	

GENERAL INFO

RIG INFO	
Rig No	Unit 111
Cell Narren	918-645-6671
Last BOP Test	
Next BOP Test	
Last Safety Meeting	
Last BOP Drill	
Last Operate Pipe Ran	
Last Operate Blind Ra	
Last Operate Annular	
LAST CASING	NEXT CASING
20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
1,120	11.90	87.80	1115	39	10	37	1.80	MWD	1,246	12.30	88.00	1239	65	11	64	0.20	MWD
1,309	12.60	88.70	1300	78	11	78	1.50	MWD	1,372	13.50	84.70	1361	93	12	92	2.30	MWD

DAILY ACTIVITY

FROM	TO	LAST 24 HOURS:
0:00	13:00	13.00 Drill & survey 1384 to 1650
13:00	13:30	0.50 Rig service
13:30	15:30	2.00 Drill & survey 1650 to 1713
15:30	19:30	4.00 Work tight hole 1678 to 1695, W&R 1652 to 1713, Work pipe up to 1620, hole clean & free
19:30	21:00	1.50 Drill & survey 1713 to 1745, Hit 150' hr. break @ 1742 lost returns.
21:00	22:00	1.00 Circulate & spot 30 ppbl. LCM pill on btm.
22:00	0:00	2.00 POOH to LD directional assembly
0:00		
0:00		
17:00		
0:00		
0:00		
0:00		
0:00		
0:00		6am Building volume pumping LCM
0:00		
0:00		
0:00		
Daily Total	24.00	

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COST DATA

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	APW	SUPERVISOR	
03/15/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	Darren Naylor	
DAYS / SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
2	Drilling	765	426	19.50	21.8	Arapiean	7150

MUD DATA

WT	VIS	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
8.8	27	nc	tr.	9.0	0.00	0.8				537	3/15/8:15	48,000	1500		79,200

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd" or TFA)		IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM	WOB	DULL CONDITION			
						RT+MTR	T									B	G		
1	17.500	STC	FDS+	417	81270		1.5		137		628	30.00	20.9	Y	150	25			
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	SLOW PUMP			
1	National	6	8	2.96	125	370							1	60 spm	80 spm	100 spm
2	National	6	8	2.96	125	370							2			
Both				5.92	250	740	65	75	750	100						

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.	FORMATION	MD	TVD	LITHOLOGY	RIG INFO	
17 1/2" Bit	1.50			Arapiean				Rig No	Unit 111
Directional Assembly	110.00							Cell Narren	918-645-6671
5 - 6 5/8" SWDP	150.00							Last BOP Test	
19 - 5" SWDP	570.00							Next BOP Test	
Jars	32.00							Last Safety Meeting	
4 - 5" HWDP	120.00							Last BOP Drill	
								Last Operate Pipe Rar	
								Last Operate Blind Ra	
								Last Operate Annular	
Total BHA:	983.50							LAST CASING	NEXT CASING
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG	
75	75	79	72	150	5,736	17	5,753		

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
418	2.10	270.80	418	-11.63	0.30	-11.63	2.60	MWD	539	0.80	333.00	539	-13.29	1.16	-14.71	0.47	MWD
660	1.20	327.20	659	-13.54	3.60	-14.54	1.17	MWD	751	1.50	48.10	750	-12.94	5.51	-14.34	3.30	MWD

DAILY ACTIVITY

FROM	TO	LAST 24 HOURS:
0:00	10:00	10.00 Drill & survey 339 to 579
10:00	10:30	0.50 Rig service
10:30	17:00	6.50 Drill & survey 579 to 719
17:00	19:30	2.50 POOH adjust motor to 2.5 deg. Bend, RIH
19:30	20:30	1.00 Wash 100' to btm.
20:30	22:00	1.50 Drill & survey 719 to 741
22:00	22:30	0.50 Work on # 2 pump
22:30	0:00	1.50 Drill & survey 741 to 765
0:00		
17:00		
0:00		
0:00		
0:00		
0:00		
0:00		6am drilling @ 865
0:00		
0:00		
Daily Total	24.00	

CONFIDENTIAL

COST DATA

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE 03/14/05	WELL Wolverine Federal 17-5	CONTRACTOR Unit Rig #111	COUNTY, STATE Sevier, UT	SPUD DATE 3/14/05	AP# 43-041-30038	SUPERVISOR Darren Naylor	
DAYS / SPUD 1	PRESENT OPERATIONS @ MIDNIGHT Drilling	TOTAL DEPTH 339	PROGRESS 202	DRILLING TIME 10.50	ROP 19.2	FORMATION Arapien	AUTH. DEPTH 7150

MUD DATA

WT 8.7	VIS. 27	WL nc	CK tr.	PH 11.0	SAND 0.00	SOLIDS % 0.5	PV	YP	GELS	DEPTH 172	DATE/TIME 3/14/10:00	CHLORIDES 50,000	CALCIUM 1600	MBT	SALT PPM 82,500
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BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd" or TFA)		IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION		
																T	B	G
1	17.500	STC	FDS+	417	81270		1.5		137	202	10.50	19.2	Y	150	25			
												#DIV/0!						
												#DIV/0!						
												#DIV/0!						

HYDRAULICS

SLOW PUMP

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	SLOW PUMP		
													60 spm	80 spm	100 spm
1	National	6	8	2.96	125	370							1		
2	National	6	8	2.96	125	370							2		
Both				5.92	250	740	65	75	750	100					

DRILL STRING

GEOLOGIC

GENERAL INFO

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.	FORMATION	MD	TVD	LITHOLOGY	RIG INFO		
17 1/2" Bit	1.50			Arapien				Rig No Unit 111		
Directional Assembly	110.00							Cell Narren 918-645-6671		
6 - 6 5/8" SWDP	180.00							Last BOP Test		
16 - 5" SWDP	480.00							Next BOP Test		
								Last Safety Meeting		
								Last BOP Drill		
								Last Operate Pipe Ran		
								Last Operate Blind Ra		
								Last Operate Annular		
Total BHA:	771.50									
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG	LAST CASING	NEXT CASING
55	55	55	55	150	5,736	17	5,753		20" @ 121	13-3/8" @ 2700

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
172	0.80	264.30	172	-1.19	-0.12	-1.90	0.50	MWD									
297	2.80	271.00	297	-5.23	-0.21	-5.29	1.70	MWD									

DAILY ACTIVITY

FROM	TO	LAST 24 HOURS:
0:00	1:00	1.00 Nipple up diverter, Fill mud tanks
1:00	2:00	1.00 Cut drlg. Line
2:00	3:00	1.00 Torque kelly, PU mousehole
3:00	6:00	3.00 PU directional assembly
6:00	7:00	1.00 Prime & test pumps, mud lines
7:00	11:00	4.00 Drlg 137 to 200 Spud 17 1/2" hole 07:00 3/14/05
11:00	12:00	1.00 POOH change MWD
12:00	13:00	1.00 Drlg 200 to 230
13:00	17:00	4.00 POOH change MWD
17:00	18:00	1.00 Drlg 230 to 263
18:00	19:30	1.50 Align Diverter & work on flowline
19:30	0:00	4.50 Drlg & survey 263 to 339
0:00		
0:00		
0:00		6am drilling @ 476
0:00		
0:00		
Daily Total	24.00	

CONFIDENTIAL

COST DATA

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3180-3 (APD) for such proposals.

011

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator: Wolverine Gas & Oil Co of Utah, LLC

3a. Address: One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI

3b. Phone No. (include area code): 616-450-1150

4. Location of Well (Footage, Sec., T., R., M., or Survey Description):
SHL: 1680' FNL & 2281' FWL
BHL: 1300' FNL & 1180' FEL
23 S 1W 17

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CVA Agreement, Name and/or No.
Wolverine Fed Exploration Unit

8. Well Name and No.
Wolverine Federal #17-5

9. API Well No.
43-041-30038

10. Field and Pool, or Exploratory Area
Exploratory

11. County or Parish, State
Sevier Co, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recombine	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recomple in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Reference Conditions of Approval dated March 16, 2005

Permission is requested to alter top of cement behind 9-5/8" intermediate csg FROM 200' into the 13-3/8" surface casing shoe TO 1000' of cement column (measured depth) above brn of 9-5/8" csg - est TOC to be ~ 5000'. This request is to allow option of removing uncemented 9-5/8" casing above the top of cement in the event a sidetrack of the 12-1/4" hole is required at ~ 4000-5000' to a different bottom hole target.

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

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

Name (Printed/Typed): Steven R Hush - EXACT Engineering Inc Title: Consulting Engineer (918) 599-9400

Signature: Steven R. Hush Date: 4/7/05 04/07/2005

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title: Accepted by the Date: _____

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office: Utah Division of Oil, Gas and Mining Federal Approval Of This Action is Necessary

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

COPIES TO OPERATOR
Date: 4-12-05
Initial: CHD

By: [Signature]

RECEIVED
APR 0 / 2005
DIV. OF OIL, GAS & MINING

TO: AL MCKEE

FAX 801-539-4200

FR: STEVE HASH

918-599-9801

Callig? - Thy

XC: Dustin Dorell - UDOGM FYI
801-359-3940

RECEIVED

APR 0 / 2005

DIV. OF OIL, GAS & MINING

012

EXACT Engineering, Inc.

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

CONFIDENTIAL

April 7, 2005

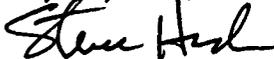
Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-5 well
Sec 17 T23S R01W
Sevier Co., UT
API# 43-041-30038

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from March 22, 2005 through April 6, 2005. We are presently drilling at 5662' expecting to set 9-5/8" intermediate csg near 6000'. We respectfully request that the enclosed information remain confidential.

Very Truly Yours,



Steven R. Hash
Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Helene Bardolph
EXACT Engineering, Inc. well file

RECEIVED

APR 11 2005

DIV. OF OIL, GAS & MINING

Petroleum Engineering Consulting, Personnel & Jobsite Supervision
complete well design, construction & management, drilling, completion, production, pipelines, appraisals,
due diligence, acquisitions, procedures, temporary personnel and field supervision

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR	
04/04/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	Darren Naylor	
DAYS F/ SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
22		5,177	149	14.50	10.3	Arapien	7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
10.2	33	n/c	2/32	9.0	0.50	3.2	4	11	6/10	5111	4/4/09:00	184,000	2460		303,600

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd" or TFA)			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM	WOB	DULL CONDITION		
																	T	B	G
7	12.25	SEC	SX16S	437	10687151	24	24	24	4691	5177	486	42.00	11.6	Y	150	40	8	E	I
8	d	RTC	EHP53KPH	537	ER5818	24	24	24	5177				#DIV/O!						
													#DIV/O!						
													#DIV/O!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	SLOW PUMP			
													60 spm	80 spm	100 spm	
1	National	6	8	2.96	125	370							1	210		
2	National	6	8	2.96	125	370							2	250		
Both				5.92	250	740	145	171	1500	250						

DRILL STRING

DRILL STRING					GEOLOGIC				GENERAL INFO			
BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.		FORMATION	MD	TVD	LITHOLOGY	RIG INFO			
12.25	1.00				Arapien				Rig No	Unit 111		
1.5 deg. 7 3/4" Motor	30.00								Cell Narren	918-645-6671		
Directional Assembly	90.00								Last BOP Test	3/25		
5 - 6 5/8 SWDP	150.00								Next BOP Test	4/24		
19 - 5" SWDP	570.00								Last Safety Meeting	4/4		
Jars	32.00								Last BOP Drill	4/4		
4 - 5" HWDP	120.00								Last Operate Pipe Ran	4/4		
									Last Operate Blind Ra	4/4		
Total BHA:	993.00								Last Operate Annular	4/4		
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG	LAST CASING NEXT CASING			
155	70	210	135	300	5,736	17	5,753		13-3/8" @ 2019 9 5/8" @ 6000'			

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
5,087	19.40	77.60	4804	1468	303	1436	0.80	MWD									MWD
								MWD									MWD

DAILY ACTIVITY

FROM	LAST 24 HOURS:		
0:00	3:00	3.00	Drill & surveys 5028 to 5057, hard ratty drilling, fractured
3:00	4:00	1.00	Work on pumps
4:00	11:30	7.50	Drill & surveys 5057 to 5144, hard ratty drilling, fractured
11:30	12:00	0.50	Rig service
12:00	16:00	4.00	Drill & surveys 5144 to 5177, hard ratty drilling, fractured
16:00	17:00	1.00	Build & pump pill
17:00	21:00	4.00	POOH for poor p rate, Bit was bald, Went back with a harder shortet tooth bit, 537
21:00	23:00	2.00	Change bit Motor check MWD
23:00	RIH	1.00	RIH
RIH			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total	24.00		

COST DATA

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	AP#	SUPERVISOR	
03/25/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	Darren Naylor	
DAYS F/SPUD	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
12	Drilling	2,209	190	7.50	25.3	Arapiean	7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
8.7	36	n/c	2/32	7.0	0.00	2.0	6	1	4/5	2019	3/25/08:00	7,000	500		

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") or TFA		IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM	WOB	DULL CONDITION			
																T	B	G	
4	12.250	DPI	MP45B2	437	A63786		5x18		2019		190	7.50	25.3	Y	120	15	6		I
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF. PRESS.	HHP / IN ²	ECO	SLOW PUMP		
													60 spm	80 spm	100 spm
1	National	6	8	2.96	125	370							1		
2	National	6	8	2.96	125	370							2		
Both				5.92	250	740			250						

DRILL STRING

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.	FORMATION	MD	TVD	LITHOLOGY	GENERAL INFO				
12	1.00			Arapiean				RIG INFO				
Directional Assembly	110.00							Rig No Unit 111				
5 - 6 5/8" SWDP	150.00							Cell Narren 918-645-6671				
19 - 5" SWDP	570.00							Last BOP Test 3/25				
Jars	32.00							Next BOP Test 4/24				
4 - 5" HWDP	120.00							Last Safety Meeting 3/25				
								Last BOP Drill 3/25				
								Last Operate Pipe Rar 3/25				
								Last Operate Blind Ra 3/25				
Total BHA:	983.00							Last Operate Annular 3/25				
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG	LAST CASING NEXT CASING			
103	70	110	100	200	5,736	17	5,753		13-3/8" @ 2019 9 5/8" @ 6000'			

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
2,062	17.70	79.20	2025	280	40	277	0.80	MWD									
2,188	19.30	77.80	2145	320	48	317	0.80	MWD									

DAILY ACTIVITY

FROM	LAST 24 HOURS:		
0:00	1:30	1.50	Repair seals on ram shaft
1:30			Test BOPE. Pipe rams, blind rams, choke line, kill line, choke manifold, upper & lower kelly & safety valves to 5000 psi. f/1
	7:00	5.50	Annular to 2500 psi. f/10 min. Casing to 1500 f/30 min.
7:00	9:00	2.00	Pu directional assembly
9:00	12:30	3.50	
12:30	14:00	1.50	RIH to 1968
14:00	16:30	2.50	Drill float collar @ 1975, 44' cement & shoe @ 2019'
16:30	0:00	7.50	Drill & surveys 2019 to 2209
0:00			
21:30			
0:00			
0:00			
0:00			
0:00			8 am drilling @ 2288
0:00			
0:00			
0:00			
Daily Total	24.00		

COST DATA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

013

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well Oil Well Gas Well Other

2. Name of Operator **Wolverine Gas & Oil Co of Utah, LLC**

3a. Address **One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI** 3b. Phone No. (include area code) **616-458-1150**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
* SHL: 1680' FNL & 2281' FWL
* BHL: 1300' FNL & 1180' FEL
235 IW 17

5. Lease Serial No. **UTU-73528**

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No. **Wolverine Fed Exploration Unit**

8. Well Name and No. **Wolverine Federal #17-5**

9. API Well No. **43-041-30038**

10. Field and Pool, or Exploratory Area **Exploratory**

11. County or Parish, State **Sevier Co, UT**

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompletable horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletable in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Reference Conditions of Approval dated March 16, 2005

Permission is requested to alter top of cement behind 9-5/8" intermediate csg FROM 200' into the 13-3/8" surface casing shoe TO 1000' of cement column (measured depth) above btm of 9-5/8" csg - est TOC to be ~ 5000'. This request is to allow option of removing uncemented 9-5/8" casing above the top of cement in the event a sidetrack of the 12-1/4" hole is required at ~ 4000-5000' to a different bottom hole target.

RECEIVED

APR 21 2005

DIV. OF OIL, GAS & MINING

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

CONFIDENTIAL

SENT TO OPERATOR
DATE: 5-4-05

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed) **Steven R Hash - EXACT Engineering Inc** Title **Consulting Engineer (918) 599-9400**

Signature *Steven R. Hash* Date **04/07/2005**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title **Accepted by the Utah Division of Oil, Gas and Mining** Date **5/2/05** Federal Approval Of This Action is Necessary

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

014

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
Wolverine Gas & Oil Co of Utah, LLC

3a. Address
One Riverfront Plaza, 55 Campau NW, Grand Rapids, MI

3b. Phone No. (include area code)
616-458-1150

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
**SHL: 1680' FNL & 2281' FWL
 BHL: 1300' FNL & 1180' FEL**

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Fed Exploration Unit

8. Well Name and No.
Wolverine Federal #17-5

9. API Well No.
43-041-30038

10. Field and Pool, or Exploratory Area
Exploratory

11. County or Parish, State
Sevier Co, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal
			<input type="checkbox"/> Water Shut-Off
			<input type="checkbox"/> Well Integrity
			<input checked="" type="checkbox"/> Other suspend operations

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Drilling operations were completed on April 14, 2005

Operations will be suspended until additional (total 5) permitted wells can be drilled from the same drilling pad location, at which time, completion operations will commence as soon thereafter as a well service rig becomes available. This well is secured with a cap flange.

PLEASE MAINTAIN ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL - thank you

COPIES SENT TO OPERATOR
 DATE: 5-4-05
 BY: CHD

RECEIVED
 APR 21 2005
 DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
 Name (Printed/Typed) **Steven R Hash - EXACT Engineering Inc** Title **Consulting Engineer (918) 599-9400**

Signature *Steven R. Hash* Date **04/18/2005**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title **Accepted by the** Date _____
 Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Office **Utah Division of Oil, Gas and Mining** Federal Approval of This Action Is Necessary

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

By: *[Signature]* Date: **5/2/05**

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EXACT Engineering, Inc.

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
 Registered Professional Engineer
 stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

April 30, 2005

Mr. Dustin Doucet
 Utah Division of Oil, Gas & Mining
 1594 West North Temple, Suite 1210
 Salt Lake City, UT 84114-5801

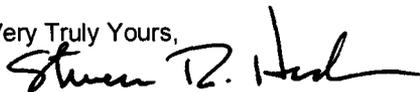
Re: Wolverine Federal 17-5 well
 Sec 17 T23S R01W
 Sevier Co., UT
 API# 43-041-30038

RECEIVED
 MAY 05 2005
 DIV. OF OIL, GAS & MINING

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from April 7, 2005 through April 14, 2005. Production casing was run and cemented on April 13, 2005 and the rig released to the next well on April 14, 2005. Well completion is estimated to begin in July 2005 upon completion of drilling the remaining wells from this drill pad. We respectfully request that the enclosed information remain confidential.

Very Truly Yours,



Steven R. Hash
 Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Richard Moritz, Helene Bardolph
 EXACT Engineering, Inc. well file

Petroleum Engineering Consulting, Personnel & Jobsite Supervision
 complete well design, construction & management, drilling, completion, production, pipelines, appraisals,
 due diligence, acquisitions, procedures, temporary personnel and field supervision

Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	AP#	SUPERVISOR
04/14/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	Rodger Rebsom
32	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION
	RIG IDLE-WAIT ON DAYLIGHT	7,000	0	0.00	#DIV/0!	Arapien
						AUTH. DEPTH
						7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd") of TFA	IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT-MTR	WOB	DULL CONDITION		
															T	B	G
											#DIV/0!						
											#DIV/0!						
											#DIV/0!						

HYDRAULICS

SLOW PUMP

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ³	ECD	SLOW PUMP		
													63 spm	73 spm	100 spm
1	National	6	8	2.96									1	400	
2	National	6	8	2.96									2		480
Both				5.92											

DRILL STRING

GEOLOGIC

GENERAL INFO

DRILL STRING					GEOLOGIC				GENERAL INFO			
BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.		FORMATION	MD	TVD	LITHOLOGY	RIG INFO			
					Twin Creek	5,963	5,550	limestone	Rig No Unit 111			
					Navajo	6,347	6,031	oil stain sand stone	Cell Narren 918-645-6671			
									Last BOP Test 3/25			
									Next BOP Test 4/24			
									Last Safety Meeting 4/14			
									Last BOP Drill 4/9			
									Last Operate Pipe Ran 4/9			
									Last Operate Blind Ran 4/12			
									Last Operate Annular 4/9			
Total BHA:									Last Operate Annular 4/9			
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG	LAST CASING		NEXT CASING	
					5,736	17	5,753	9 5/8" @ 5954	13-3/8" @ 2019		7" @ 7000	

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL

DAILY ACTIVITY

FROM	LAST 24 HOURS:		
0:00	3:00	3:00	Nippel Down Lift BOP-Set 7" Casing Slips @ 170,000-Make Rough Cut On 7" Casing 12" Above Slips.
3:00	10:30	7:50	Finish Nippeling Down-Set Out Same-Clean Mud Tanks-Lay Down Kelly & Swivel & All Subs & X-Over Subs-For Inspectio
7:30			RELEASE RIG @ 10:30 AM 4/14/2005.
10:30	20:00	9:50	Rig Down-Skid Rig 16' Ahead-Relevel Sub & Center Over Hole-Start Setting In Back End In Place.
20:00	0:00	4:00	Rig Idle-Wait On Daylight-To Finish Setting Rest Of Rig in Place...
0:00			
0:00			
0:00			
22:30			
0:00			
0:00			
0:00			
0:00			
0:00			Production casing and casing running cost will be included with Well Completion Cost on the completion report
0:00			
0:00			FINAL DRLG REPORT THIS WELL - OFF REPT UNTIL COMPLETION BEGINS AFTER ALL WELLS DRILLED THIS PAD A-2
0:00			
Daily Total	24.00		

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Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	AP#	SUPERVISOR	
04/12/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	DL Naylor / R Rebsom	
30	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
	LD drill pipe	7,000	0	0.00	#DIV/0!	Arapien	7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
8.8	33	8.0	1/32	8.8	0.75	1.8	5	7	3/5	7000	4/11/09:00	26,000	850		42,900

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd" of TFA)			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION		
						T	B	G											
9	8.50	SEC	SX30S	537	10411496	11	11	11	5963	7000	1037	36.00	28.8	Y	100	40	8	E	I
													#DIV/0!						
													#DIV/0!						
													#DIV/0!						

HYDRAULICS

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	SLOW PUMP			
													63 spm	73 spm	100 spm	
1	National	6	8	2.96	0								1	400		
2	National	6	8	2.96	125								2		480	
Both				5.92	125	370	140	140	1500	200	1.95	9				

DRILL STRING

GEOLOGIC

GENERAL INFO

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.	FORMATION	MD	TVD	LITHOLOGY	RIG INFO		
8.50	1.00			Twain Creek	5,963	5,550	limestone	Rig No	Unit 111	
1.25 deg. 6 1/2" Motor	22.00			Navajo	6,347	6,031	oil stain sand stone	Cell Nnrren	918-645-6671	
Directional Assembly	90.00			GAS DATA				Last BOP Test	3/25	
				BOTYDMS UP TIME	BG GAS	CONN GAS	TRIP GAS	Next BOP Test	4/24	
19 - 5" SWDP	570.00			40	0	0	0	Last Safety Meeting	4/12	
Jars	32.00			SHOWS				Last BOP Drill	4/9	
4 - 5" HWDP	120.00			GAS UNITS	FROM	TO	ROP (FT/HR)	Last Operate Pipe Rar	4/9	
								Last Operate Blind Ra	4/12	
Total BHA:	835.00							Last Operate Annular	4/9	
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG	LAST CASING	NEXT CASING
175	55	250	142	270	5,736	17	5,753	9 5/8" @ 5954	13-3/8" @ 2019	7" @ 7000

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL
6,957	9.90	63.80	6671	1834	309	1808	0.80	MWD									

DAILY ACTIVITY

FROM	TO	LAST 24 HOURS:
0:00	0:00	17.00
		Logging Run # 1 DILT/MSFL 92' LONG, WT. 1530# Run # 2 Triple combo 78' long 1312# Run # 3 EMI 58' long 818#
0:00		Run #4 MRIL 66' long 1590 #.
17:00	18:00	1.00
		Pull wear bushing.
18:00	21:00	3.00
		RIH
21:00	21:30	0.50
		Fill Pipe
21:30	22:30	1.00
		Finish Trip In
22:30	23:30	1.00
		Circ. & Pump Pill
23:30	0:00	0.50
		Lay Down Drill Pipe
0:00		
0:00		
0:00		
0:00		
0:00		
0:00		
0:00		
0:00		
0:00		
0:00		
Daily Total	14.00	

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Operator: Wolverine G&O Co of Utah, LLC

DAILY DRILLING REPORT

24 hrs - midnight to midnight

DATE	WELL	CONTRACTOR	COUNTY, STATE	SPUD DATE	API#	SUPERVISOR	
04/08/05	Wolverine Federal 17-5	Unit Rig #111	Sevier, UT	3/14/05	43-041-30038	Darren Naylor	
26	PRESENT OPERATIONS @ MIDNIGHT	TOTAL DEPTH	PROGRESS	DRILLING TIME	ROP	FORMATION	AUTH. DEPTH
	RIH w/directional ass.	5,963	0	0.00	#DIV/OI	Arapien	7150

MUD DATA

WT	VIS.	WL	CK	PH	SAND	SOLIDS %	PV	YP	GELS	DEPTH	DATE/TIME	CHLORIDES	CALCIUM	MBT	SALT PPM
10.6	32	n/c	2/32	9.0	0.50	5.0	7	13	6/8	5963	4/8/09:00	200,000	2650		330,000

BIT DATA

BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERIAL NO.	JETS (1/32nd" or TFA)			IN	OUT	FOOTAGE	HOURS	ROP	MTR	RPM RT+MTR	WOB	DULL CONDITION			
						T	B	G												
9	8.50	SEC	SX30S	537	10411496	11	11	11	5963				#VALUE!	Y						
													#DIV/OI							
													#DIV/OI							
													#DIV/OI							

HYDRAULICS

SLOW PUMP

PUMP NO.	MANUFACTURER	LINER	STROKE LENGTH	GAL / STK	SPM	GPM	AV DP	AV DC	PUMP PRESS.	MTR DIFF PRESS.	HHP / IN ²	ECD	60 spm	80 spm	100 spm
1	National	6	8	2.96	0								1	210	
2	National	6	8	2.96	0								2	250	
Both				5.92	0	0	145	171	1500	250					

DRILL STRING

GEOLOGIC

GENERAL INFO

BOTTOMHOLE ASSEMBLY	LENGTH	O.D.	I.D.	FORMATION	MD	TVD	LITHOLOGY	RIG INFO		
12.25	1.00			Arapiean				Rig No	Unit 111	
1.5 deg. 6 1/2" Motor	22.00							Cell Narren	918-645-6671	
Directional Assembly	90.00							Last BOP Test	3/25	
								Next BOP Test	4/24	
19 - 5" SWDP	570.00							Last Safety Meeting	4/8	
Jars	32.00							Last BOP Drill	4/4	
4 - 5" HWDP	120.00							Last Operate Pipe Ra	4/6	
								Last Operate Blind Ra	4/6	
Total BHA:	835.00							Last Operate Annular	4/4	
STRING WT.	BHA WT.	PU WT.	SO WT.	ROT. TORQUE	GRD. ELEVATION	GL TO KB	KB ELEVATION	INTERMEDIATE CSG	LAST CASING	NEXT CASING
155	55	200	125	250	5,736	17	5,753	9 5/8" @ 5954	13-3/8" @ 2019	9 5/8" @ 6000'

SURVEYS

MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL	MD	INCL.	AZIMUTH	TVD	SECTION	N+ / S-	E+ / W-	DLS	TOOL

DAILY ACTIVITY

FROM	LAST 24 HOURS:		
0:00	1:00	1.00	LD Directional assembly
1:00	2:00	1.00	Pull wear bushing & clean floor
2:00	6:00	4.00	RU csng. Crew LD machiene, Hold safety meeting
6:00	13:30	7.50	Run 136 jts.47# 9 5/8 csng. To 5954
13:30	14:30	1.00	Circ. Csng.
14:30	15:30	1.00	Rig up & test haliburton
15:30	16:30	1.00	Mix & pump 350 sks. 50/50 pos. Plug down @ 14:30
16:30	17:00	0.50	RD Haliburton
17:00	20:00	3.00	Set pack off on MBS system & test same, instal wear bushing
20:00	21:30	1.50	PU Directional assembly
21:30	0:00	2.50	RIH
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
0:00			
Daily Total	24.00		

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EXACT Engineering, Inc.

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

September 6, 2005

Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-5 well
Sec 17 T23S R01W
Sevier Co, UT
API# 43-041-30038
BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our daily completion activity reports for the subject well. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truly Yours,



Chris Nicely
Engineering Technician

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph
EXACT Engineering, Inc. well file

RECEIVED

SEP 09 2005

DIV. OF OIL, GAS & MINING

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due diligence, acquisitions, procedures, temporary personnel and field supervision

Daily Completion Report

Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-5 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

New Completion
7" 23# HCP110 @ 6999' TD
PBTD 6955' on 4/13/05; CBL TD 6914'
Perfs - 6748-6752 on 7/26/05

ESP set @ na
GL to RKB: 17'

"TIGHT HOLE"

07/25/05 **FIRST COMPLETION REPORT** - during July cleaned location, installed 11" 5m x 7-1/16" 5m tbg head with (2) 2-1/16" 5m gate valves w/ single valve tree, move in 4% KCL treating fluid and flowback tanks. Offload 2-7/8" 6.5ppf N80 EUE 8rd new tbg. MIRU Pool Well Service Unit @ 3pm from WF 17-3. ND wellhead & flowline, NU 7-1/16" 5m BOP, set up pipe racks & load with tbg & strap. Note: CBL log run on 7/21/05 found good cement w/ TOC @ 4450'. Tomorrow's plan: TIH & pickle tbg. CMOL: Steve Hash
Est Daily Completion Cost \$ [REDACTED] (incl csg,FL,WH,tbg)
Est Cumulative Comp Cost \$ [REDACTED] Completion AFE \$ [REDACTED]
Est Dryhole Cost \$ [REDACTED] Dryhole AFE \$ [REDACTED]
Est Total Well Cost to date \$ [REDACTED] Total Well Cost AFE \$ [REDACTED]

07/26/05 RU lines, PT BOPE & csg to 4000 psi, OK. Make up 6-1/4" bit, 7" csg scraper, xo & pick up 225 jts tbg, tag btm @ 6923' kb. Pull up to 6904', close rams & PT to 2500 psi, OK. RU Halco, Hold safety mtg, pump tubular cleanup job consisting of 15 bbls caustic wash, 12 bbls chemical wash, 15 bbl gel water, 10 bbl FW spacer, 7 bbl 7.5% HCL. Displace down tbg @ 2 bpm with 188 bbl FW to surface, switch lines to csg, reverse hole @ 3 bpm with 270 bbl 4% KCL sending dirty acid water to pit. Hole clean after 240 bbls, RD Halco. POOH w/ tbg, RU WellServ WLU, perforate Lwr Navajo 1 interval 6748-6752' w/ 4" slick gun, 4 jpf, 90 degr phase, 39gm, .43 hole, 59" penetration. POOH, RD WLU, SWI&SDFN. Tomorrow's plan: Breakdown perfs. CMOL: Steve Hash
Est Daily Completion Cost \$ [REDACTED] Completion AFE \$ [REDACTED]
Est Cumulative Comp Cost \$ [REDACTED] Dryhole AFE \$ [REDACTED]
Est Dryhole Cost \$ [REDACTED] Total Well Cost AFE \$ [REDACTED]
Est Total Well Cost to date \$ [REDACTED]

07/27/05 SICP = zero, Make up 2 jts tbg as tailpipe, 7" HD pkr, 1 jt tbg, 2.25" SN & TIH w/ 216 jts tbg, set EOT @ 6749' kb, RU Halco, hold safety mtg & test P&L to 6000 psi. Spot 500 gal 7-1/2% NeFe HCL acid across perfs, pull 1 std tbg, set pkr @ 6621, let acid set 30 min, attempt to displace acid into perfs 6748-52 @ 2700 psi, no rate, pressure to 2700 and bled to 2000 for 11 attempts over 30 min period, displaced 1 bbl fluid total, bled back to zero and attempted 3 more times to 2800 psi, maintaining less than formation frac pressure, no break. Reverse acid to pit. Spot 15% HCL similarly, let soak 30 min, pressure to 2800 psi for 4 attempts bleeding off to 2000 psi after each attempt. Pressure to 3000 psi and began taking fluid, displaced 500 gal acid into perfs and overflushed 5 bbls 4% @ 1/2 to 1 bpm @ 3000 to 2800 psi. Max 3000 psi, max rate 1 bpm @ end, avg 1/2 bpm. ISDP 2312, 5 min = 1392, 10 min = 1088, 15 min = 903. RD Halco. 53 BLWTR. Flow back 4 bbl, RU swab, BFL zero, made 8 swab runs and recovered 57 bbls fluid. Began cutting oil on 7th run after 48 bbls recovered, FL 4000'. 7th & 8th swab run cut 10% oil, 90% load water, ph 4.2, CI 32,000ppm. EFL 4600' fs, pulling from 6100'. SWI&SDFN @ 8pm. Plan: continue testing oil/wtr contact interval. This am SITP 60 psi. CMOL: Steve Hash
Est Daily Completion Cost \$ [REDACTED]
Est Cumulative Comp Cost \$ [REDACTED]

EXACT Engineering, Inc. 415 S. Boston, Suite 734, Tulsa, OK 74103 (918) 599-9400

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due diligence, acquisitions, procedures, temporary personnel and field supervision

Daily Completion Report

Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-5 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

New Completion
7" 23# HCP110 @ 6999' TD
PBTD 6955' on 4/13/05; CBL TD 6914'
Perfs - 6748-6752 on 7/26/05

ESP set @ na
GL to RKB: 17'

"TIGHT HOLE"

- 07/28/05 SITP 60 psi, bled off, RU swab. BFL 600' fs, swabbed well down in 6 runs in 2 hrs & recovered 30 bbl water, samples increased from 25% oil to 50% oil cut, water ph 5.5. Swabbed from SN next 4-1/2 hrs and recovered 23 bbls fluid, samples 50% oil cut, avg 5 bbl fluid per hr (projected rate of 60 BO & 60 BWPD). Made 15 swab runs for day. Chlorides 22,000 ppm & ph 6. EFL 6000' fs, pulling from 6500'. At 2:30pm swab swivel parted and left sinker bars, jars & swab in hole. Clean break in swivel pin, left no sandline. Release pkr to pull tbg, reverse killed well with 40 bbls, POOH with wet string, recover swab tools, SWI&SDFN @ 8pm. Plan: run pkr & continue swab testing. CMOL: Steve Hash
Est Daily Completion Cost \$ ██████████
Est Cumulative Comp Cost \$ ██████████

- 07/29/05 SICP zero, make up ArrowSet 1X pkr, 1 jt 2-7/8" tbg, 2.25" SN & TIH with 216 jts tbg, set pkr @ 6678'. RU to swab, BFL 200' fs, swabbed well down in 4 hrs and recv 37 bbls water, swab was hard to get down, reset tbg with less weight down, ok. Swab from SN next 3-1/2 hrs and recv 23 bbls fluid, avg 6.5 bbls bfph, 50% oil cut, water ph 8, SG 1.018, will run chloride check and report. SWI&SDFN @ 6pm. Plan: 3 day weekend for crew, finish perf remainder Lwr NVJO on Tuesday, CMOL: Steve Hash
Est Daily Completion Cost \$ ██████████
Est Cumulative Comp Cost \$ ██████████

- 07/30/05 SITP 90 psi, yesterday water sample 28,000 ppm Cl, ph 7.5

- 07/31/05 SITP 90 psi

- 08/01/05 SITP 95 psi, prep to perf additional intervals today

- 08/02/05 Swabbed well down to 2500'. POOH w/ tbg, RU WellServ WLU, perforate Lwr Navajo 1 intervals 6714-6723',6695-6704',6675-6684',6636-6653' w/ 4" slick gun, 4 jpf, 90 degr phase, 39gm, .43 hole, 59" penetration. Fluid level came up to 2300' after 1st. perforation. POOH, RD WLU.PU PIP tool assy TIH set tools above perfs. EOT @ 6607, RU & swab, made 4 runs recy. 39bbl. fluid level 2000' Flow well on 1" choke thru out night, made 2.5 bfph, no water in sample. Tomorrow's plan: Flowtest , Plan to acidize Thursday am. 8/4/05. CMOL: DL Naylor
Est Daily Completion Cost \$ ██████████
Est Cumulative Comp Cost \$ ██████████

- 08/03/05 Continue to flow test well, From 6am. flowed 18 bbls fluid until 2pm, FTP zero. Continued to flow well on open" chk w FTP zero from 2pm to 10pm. Recovered 12 bbls, samples 100% oil, no water, well avg. 2 BOPH. SWIFPBU. 10 pm to 6am, 8hr. 240 psi. Released crew @ 5pm. CMOL: DL Naylor. Plan to acidize this am. CMOL: DL Naylor
Est Daily Completion Cost \$ ██████████
Est Cumulative Comp Cost \$ ██████████

- 08/04/05 SICP 50 psi. Halliburton not able to arrive until 10 am. Drop SV, set packers, Not holding, Discovered SN was inadvertently installed 1 jt. Above PIP. Put Halbt on stdby. POOH remove SN. Send packers to get redressed. SWI&SDFN. Plan to acidize this am. CMOL: DL Naylor
Est Daily Completion Cost \$ ██████████
Est Cumulative Comp Cost \$ ██████████

EXACT Engineering, Inc. 415 S. Boston, Suite 734, Tulsa, OK 74103 (918) 599-9400
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Complete well design, construction & management, drilling, completion, production, pipelines, evaluations, due diligence, acquisitions, procedures, temporary personnel and field supervision

Daily Completion Report
Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-5 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

page 3 of 5

New Completion
7" 23# HCP110 @ 6999' TD
PBTD 6955' on 4/13/05; CBL TD 6914'
Perfs - 6748-6752 on 7/26/05

"TIGHT HOLE"

ESP set @ na
GL to RKB: 17'

08/05/05 14hr SITP 10 psi, bled off. TIH w/ redressed pip tools and straddled perf set #4 6707-6729; RU Halco, QC 7-1/2% acid mix @ 1.15 sg and 4% KCl @ 1.04 sg, OK. Hold safety mtg & test P&L to 6000 psi. Spot 500 gal acid to pkr, . Individually acidize each interval as follows:

#	Ft	Plan gals	Pmpd Gals	Break psi	BD bpm	ATR bpm	ATP psi	ISDP psi	5m psi	10m psi	15m psi	Comments
4	7	900	300	2400	1	.8	2100	2000				Communicated
3	9	900	200	1900	.6	.6	1900	1650				Communicated
2	9	900	550	1200	.5	.5	1900	1700				Communicated
1	17	1700	3150	2200	1	3	2300	2300	2150	1560	1200	Took remaining acid

Release pkr and reset above all perfs w/ EOT @ 6606'. Well flowing, 400psi SICP. RU sandline overshot, retrieve SV from upper pkr. Well flowed 20 BLWTR, RU to swab, made 17 swab runs in 5 hrs, 1st oil cut on 3rd run, 25%. Recovered 190 bbls fluid to tank. EFL 1400', pulling from 4500' fs, well trying to flow. Last sample 100% oil. CMOL: DL Naylor

Well flowed 10 bbl. in 13 hrs. by heads. This am. LD pip tools.

Est Daily Completion Cost \$ [REDACTED]
 Est Cumulative Comp Cost [REDACTED]

08/06/05 Well flowed 10 bbl. in 13 hrs. by heads, on an open chk, rec 10 bbls in 13 hrs flowing, 100% oil samples, avg .77 bphr. Released pkr, reversed oil from tbg with 48 bbls KCl, well dead. POOH w/ 214 jts tbg & pip, PU 7" Arrow set pkr, run perf tailpipe with digital BHP instruments in place, 2.25" SN min id, set pkr with EOT & gauges @ 6602' kb w 15k down. ND BOP, NU 3m adapter & tree, hook up flowlines and rig up swab. Swabbed 68 bbls fluid in 6 runs, last sample 100% oil, EFL 1400', slight gas show, RD swab, RD rig while well building up. Move rig to WF 17-6 well. Well kicked off flowing @ 6:00pm. till 9 pm recovered 4 BO, On open choke and monitored hourly overnight as follows:

Time	chk	ftp	Bbl per hr	Sample description & comments
9:00p	Open	0	2	100% oil; slight show gas
10:00p	Open	0	1	ditto
11:00p	Open	0	1	ditto
12:00a	Open	0	2	ditto
1:00a	Open	0	2	ditto
2:00a	Open	0	2	ditto
3:00a	Open	0	2	Ditto
4:00a	Open	0	2	90%
5:00a	Open	0	2	80%

Total daily recovery 20 BO. Plan: Continue to flow well CMOL: DL Naylor

Est Daily Completion Cost \$ [REDACTED]
 Est Cumulative Comp Cost \$ [REDACTED]

08/07/05 Continue to flow well, Recovered 24 bbf 60% water in samples

EXACT Engineering, Inc. 415 S. Boston, Suite 734, Tulsa, OK 74103 (918) 599-9400
Petroleum Engineering Consulting, Personnel & Jobsite Supervision
 Complete well design, construction & management, drilling, completion, production, pipelines, evaluations,
 due diligence, acquisitions, procedures, temporary personnel and field supervision

Daily Completion Report
Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-5 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

page 4 of 5

New Completion
7" 23# HCP110 @ 6999' TD
PBDT 6955' on 4/13/05; CBL TD 6914'
Perfs - 6748-6752 on 7/26/05

"TIGHT HOLE"

ESP set @ na
GL to RKB: 17'

08/08/05 Continue to flow well, Recovered 7 bbf 60% water in samples, SWIFPBU, @08:00, 08/08/05

08/09/05 SWIFPBU.

8/14/05 SITP 50 psi. Total production to date 318 BO. Total sales 272 bbl

8/17/05 SITP 60 psi. Total production to date 318 BO. Total sales 272 bbl
NOTE: **FIRST OIL SALES FROM WF17-5 TO HOLLY REFINERY ON 08/10/05**

8/18/05 SITP 60 psi

8/19/05 SITP 70 psi

8/20/05 SITP 80 psi

8/21/05 SITP 85 psi

8/22/05 SITP 90 psi

8/23/05 SITP 100 psi

8/24/05 MIRU, pump 40 bbls Kcl down tbg @ 2bpm @ 2200 psi. ND wellhead, NU BOP, reverse 40 bbls KCL, release pkr & POOH w/ tools, remove BHP instrument & send to PLS, Vernal. RU WLU, set 7" HEII WLSRBP @ 6738', top of plug @ 6736. RD WLU. TIH w/ 7" ASIX csg pkr w/ perf mud anchor, set pkr @ 6586' & EOT @ 6602'. Test pkr to 500 psi, ND BOP, NU wellhead, leave open to tank overnight, SDFN @ 6:30pm. This am, no recovery Plan: swab CMOL: SRHash
Est Daily Completion Cost \$ [REDACTED] Est Cumulative Comp Cost \$ [REDACTED]

8/25/05 No flow overnight, RU swab, rec 253 bbls in 23 swab runs in 11 hrs, 80-90% oil, EFL 1200' fs, well would not flow, leave well open to tank, SDFN CMOL: SRHash
Est Daily Completion Cost \$ [REDACTED] Est Cumulative Comp Cost \$ [REDACTED]

8/26/05 Flwd 2 BO and no water in 10 hrs overnight, RD WSU & move to WF 17-4. Flwd 1 BO in 8 hrs until 2pm. SWI@ 2pm. This am SITP 30 psi. Will pull RBP & run ESP ~ 9/6/05.

8/27/05 SITP 55 psi; preliminary BHP 2613 psi @ 6602'

8/28/05 SITP 70 psi

8/29/05 SITP 60 psi

8/30/05 SITP 60 psi

8/31/05 SITP 60 psi

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Petroleum Engineering Consulting, Personnel & Jobsite Supervision
Complete well design, construction & management, drilling, completion, production, pipelines, evaluations, due diligence, acquisitions, procedures, temporary personnel and field supervision

Daily Completion Report
Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-5 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

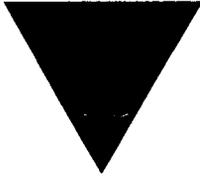
page 5 of 5

New Completion
7" 23# HCP110 @ 6999' TD
PBD 6955' on 4/13/05; CBL TD 6914'
Perfs - 6748-6752 on 7/26/05

ESP set @ na
GL to RKB: 17'

"TIGHT HOLE"

9/01/05	SITP 60 psi
9/02/05	SITP 60 psi
9/03/05	SITP 50 psi
9/04/05	SITP 50 psi
9/05/05	SITP 50 psi
9/06/05	SITP 50 psi



WOLVERINE GAS AND OIL COMPANY
of Utah, LLC

Energy Exploration in Partnership with the Environment

September 12, 2005

Ms. Carol Daniels
Utah Division of Oil, Gas & Mining
1594 W.N. Temple
Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-5 Well
Completion Report

Dear Carol:

Enclosed please find the Completion Report (form #8) for the captioned well. Attached to the report are the following documents:

- Directional Survey
- Geologic Report
- Logs
 1. Mudlog
 2. Electric Micro Imager Monitor Log
 3. Spectral Density/DSN/GR - TVD
 4. Spectral Density/DSN/GR - MD
 5. Dual Laterolog MSFL DFL - TVD
 6. Dual Laterolog MSFL DFL - MD

Please keep this report and all attachments confidential. If you have any questions or concerns, please feel free to contact me.

Sincerely,

Helene Bardolph

enclosures

RECEIVED

SEP 15 2005

DIV. OF OIL, GAS & MINING

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

AMENDED REPORT FORM 8
(highlight changes)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER:
UTU-73528

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT OR CA AGREEMENT NAME
Wolverine Fed Exploration Unit

8. WELL NAME and NUMBER:
Wolverine Federal #17-5

9. API NUMBER:
4304130038

10. FIELD AND POOL, OR WILDCAT
Covenant Field

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
SENW 17 23S 1W 26

12. COUNTY
Sevier

13. STATE
UTAH

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

b. TYPE OF WORK: NEW WELL HORIZ. LATS. DEEP-EN RE-ENTRY DIFF. RESVR OTHER **Well Completion**

2. NAME OF OPERATOR:
Wolverine Gas and Oil Co. of Utah, LLC

3. ADDRESS OF OPERATOR: **55 Campau NW** CITY **Grand Rapids** STATE **MI** ZIP **49503** PHONE NUMBER: **(616) 458-1150**

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: **1680' FNL & 2281' FWL, Sec 17, T23S, R1W**
AT TOP PRODUCING INTERVAL REPORTED BELOW: **1156' FEL & 1,402' FNL, Sec 17, T23S, R1W**
AT TOTAL DEPTH: **1034' FEL & 1361' FNL, Sec 17, T23S, R1W**

14. DATE SPUNDED: **3/14/2005** 15. DATE T.D. REACHED: **4/11/2005** 16. DATE COMPLETED: **8/10/2005** ABANDONED READY TO PRODUCE

17. ELEVATIONS (DF, RKB, RT, GL): **5752, 5753, 5753, 5736**

18. TOTAL DEPTH: MD **7,000** 19. PLUG BACK T.D.: MD **6,955** 20. IF MULTIPLE COMPLETIONS, HOW MANY? *
TVD **6,671** TVD **6,627**

21. DEPTH BRIDGE MD PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
Dual Laterolog-MD&TVD, Spectral Density/DSN/GR-MD/TVD, Dipmeter Monitor

23. WAS WELL CORED? NO YES (Submit analysis)
WAS DST RUN? NO YES (Submit report)
DIRECTIONAL SURVEY? NO YES (Submit copy)

24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
30"	20" x42		0	121		Class G 620	127	Surface CIR	
17 1/2	13 3/8 J55	68	0	2,019		HiFillV 1,070	422	Surface CIR	
12 1/4	9 5/8	47	0	5,954		50/50 350	89	4720 CAL	
8 1/2	7	23	0	6,999		50/50 290	74	5200 CAL	

HC P110 LTC

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8	5,346							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
(A) Navajo	6,339	7,000	6,022	6,671	6.748 6.752	.43	16	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(B)					6.714 6.723	.43	36	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(C)					6.695 6.704	.43	36	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(D)					6.675 6.684	.43	36	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6748-6752	15% HCL acid and 4% KCl, 710 gal total
6707-6729	7 1/2% acid mix @ 1.15 sq and 4% KCl @ 1.04 sq, 4200 gal total

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29. ENCLOSED ATTACHMENTS:

ELECTRICAL/MECHANICAL LOGS GEOLOGIC REPORT DST REPORT DIRECTIONAL SURVEY
 SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION CORE ANALYSIS OTHER: _____

30. WELL STATUS:
PROD

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED: 8/6/2005		TEST DATE: 9/11/2005		HOURS TESTED: 48		TEST PRODUCTION RATES: →	OIL - BBL: 473	GAS - MCF:	WATER - BBL: 167	PROD. METHOD: Pumping
CHOKE SIZE: 12/64"	TBG. PRESS.	CSG. PRESS.	API GRAVITY 42.00	BTU - GAS	GAS/OIL RATIO 0	24 HR PRODUCTION RATES: →	OIL - BBL: 473	GAS - MCF:	WATER - BBL: 167	INTERVAL STATUS: Producing

INTERVAL B (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

INTERVAL C (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

INTERVAL D (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

Venting (gas too small to measure)

33. SUMMARY OF POROUS ZONES (Include Aquifers):

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.

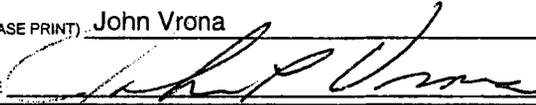
34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
Arapien	1,645	1,896	Lost circulation Oil & water	Arapien Twin Creek Navaio	0
Navaio	6,339	7,000			6.003 6.339

35. ADDITIONAL REMARKS (Include plugging procedure)

During the initial test, we realized the pump needed replacing. The new pump was installed and test was run on Sept. 11-12.

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

NAME (PLEASE PRINT) John Vrona TITLE Manager of Geology
 SIGNATURE  DATE 9/12/2005

This report must be submitted within 30 days of

- completing or plugging a new well
- reentering a previously plugged and abandoned well
- drilling horizontal laterals from an existing well bore
- significantly deepening an existing well bore below the previous bottom-hole depth
- recompleting to a different producing formation
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top - Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

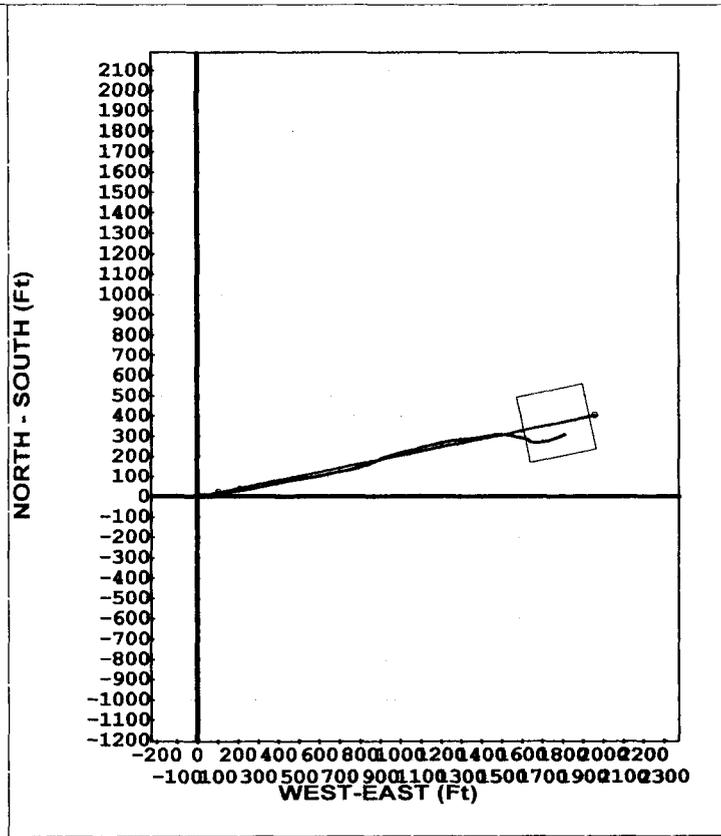
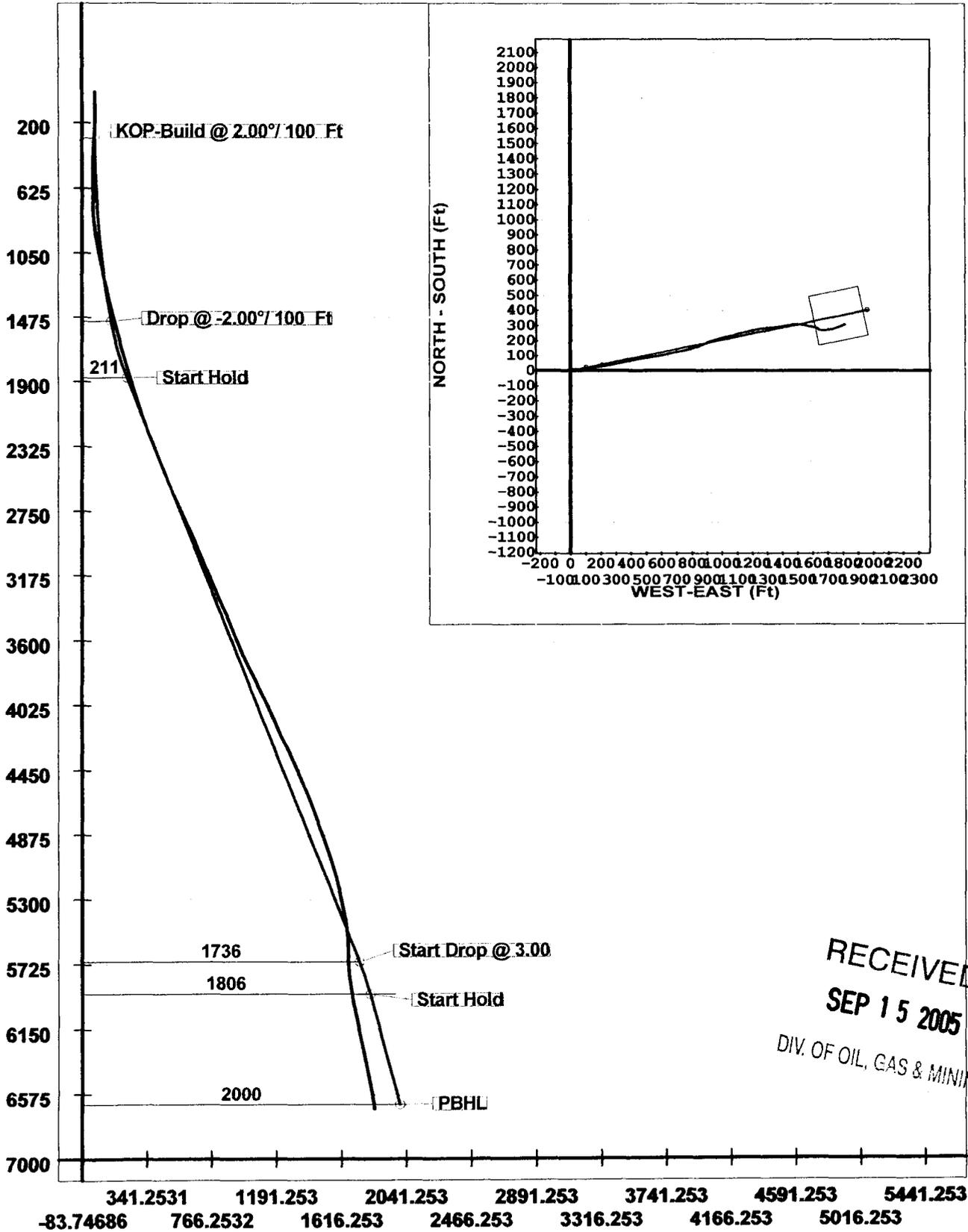
Send to: Utah Division of Oil, Gas and Mining
 1594 West North Temple, Suite 1210
 Box 145801
 Salt Lake City, Utah 84114-5801
 Phone: 801-538-5340
 Fax: 801-359-3940

CONFIDENTIAL

Company: Wolverine Oil & Gas Co of Utah, LLC
 Lease/Well: Federal 17-5
 Location: Covenant Field
 State/Country: Sevier Co. Ut.



TRUE VERTICAL DEPTH (Ft)



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° - Working -- Plain

VERTICAL SECTION (Ft) @ 78.37°



Job Number: WYL0305D040

State/Country: Sevier Co. Ut.

Company: Wolverine Oil & Gas Co of Utah, LLC Declination: 12.95

Lease/Well: Federal 17-5

Grid:

Location: Covenant Field

File name: C:\MARSHA~1\ENDOFW~1\WOLVER~1\FEDERA~311

Rig Name: Unit 111

Date/Time: 12-Jul-05 / 13:24

RKB:

Curve Name: Working

G.L. or M.S.L.:

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 78.38
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Dogleg Severity Deg/100	CLOSURE Distance FT	Direction Deg
.00	.00	.00		.00	.00	.00	.00	.00	.00	.00
172.00	.80	264.30	172.00	171.99	-1.19	-.12	-1.19	.47	1.20	264.30
203.00	1.40	270.60	31.00	202.99	-1.78	-.14	-1.79	1.97	1.79	265.63
233.00	2.00	269.60	30.00	232.98	-2.65	-.14	-2.68	2.00	2.68	267.08
266.00	2.30	266.40	33.00	265.95	-3.87	-.18	-3.92	.98	3.92	267.34
297.00	2.80	271.00	31.00	296.92	-5.23	-.21	-5.29	1.74	5.30	267.75
327.00	3.50	276.10	30.00	326.88	-6.81	-.10	-6.94	2.51	6.94	269.19
357.00	3.80	273.60	30.00	356.81	-8.65	.06	-8.84	1.13	8.84	270.40
387.00	2.90	276.30	30.00	386.76	-10.33	.21	-10.59	3.04	10.59	271.12
418.00	2.10	270.80	31.00	417.73	-11.63	.30	-11.93	2.69	11.94	271.45
448.00	1.00	285.90	30.00	447.72	-12.40	.38	-12.73	3.88	12.74	271.71
478.00	.90	285.10	30.00	477.72	-12.84	.51	-13.21	.34	13.22	272.23
509.00	.90	326.40	31.00	508.71	-13.15	.78	-13.58	2.05	13.61	273.29
539.00	.80	333.00	30.00	538.71	-13.29	1.16	-13.81	.47	13.86	274.81
569.00	1.40	357.10	30.00	568.71	-13.29	1.72	-13.92	2.48	14.03	277.02
600.00	1.20	339.00	31.00	599.70	-13.29	2.40	-14.06	1.46	14.26	279.68
630.00	1.30	342.70	30.00	629.69	-13.37	3.02	-14.27	.43	14.59	281.93
660.00	1.20	327.20	30.00	659.68	-13.52	3.60	-14.54	1.17	14.98	283.92
691.00	1.50	1.50	31.00	690.68	-13.54	4.28	-14.71	2.73	15.32	286.23
721.00	1.10	6.60	30.00	720.67	-13.37	4.96	-14.67	1.39	15.48	288.69
751.00	1.50	48.10	30.00	750.66	-12.94	5.51	-14.34	3.31	15.36	291.02
782.00	2.60	72.90	31.00	781.64	-11.89	5.99	-13.37	4.48	14.65	294.13
812.00	4.50	76.90	30.00	811.58	-10.03	6.45	-11.57	6.38	13.25	299.16
843.00	5.70	79.00	31.00	842.46	-7.28	7.02	-8.87	3.92	11.32	308.36
875.00	6.90	83.10	32.00	874.27	-3.77	7.56	-5.40	4.00	9.29	324.43

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Dogleg Severity Deg/100	CLOSURE	
									Distance FT	Direction Deg
904.00	8.40	84.50	29.00	903.01	.07	7.97	-1.57	5.21	8.12	348.88
935.00	9.00	82.70	31.00	933.65	4.74	8.50	3.09	2.13	9.04	20.00
964.00	9.70	85.20	29.00	962.26	9.43	8.99	7.78	2.79	11.89	40.87
994.00	10.40	85.60	30.00	991.80	14.62	9.41	13.00	2.34	16.04	54.10
1026.00	10.70	88.70	32.00	1023.26	20.41	9.70	18.84	2.01	21.19	62.77
1057.00	11.20	88.90	31.00	1053.70	26.20	9.82	24.73	1.62	26.61	68.35
1089.00	11.40	89.20	32.00	1085.08	32.36	9.92	31.00	.65	32.55	72.25
1120.00	11.90	87.80	31.00	1115.44	38.53	10.09	37.26	1.85	38.60	74.85
1184.00	12.40	88.50	64.00	1178.01	51.80	10.52	50.72	.81	51.80	78.28
1246.00	12.30	88.00	62.00	1238.57	64.87	10.93	63.98	.24	64.90	80.31
1278.00	12.90	87.10	32.00	1269.80	71.76	11.23	70.95	1.97	71.83	81.01
1309.00	12.60	88.70	31.00	1300.04	78.50	11.48	77.79	1.49	78.63	81.61
1341.00	13.10	87.30	32.00	1331.23	85.52	11.73	84.90	1.84	85.70	82.14
1372.00	13.50	84.70	31.00	1361.40	92.59	12.23	92.01	2.32	92.82	82.43
1403.00	13.70	84.30	31.00	1391.53	99.84	12.93	99.27	.71	100.10	82.58
1435.00	13.70	84.50	32.00	1422.62	107.37	13.67	106.81	.15	107.68	82.71
1498.00	14.60	85.70	63.00	1483.71	122.67	14.98	122.15	1.50	123.07	83.01
1592.00	14.90	79.90	94.00	1574.62	146.50	17.98	145.87	1.60	146.97	82.97
1687.00	16.40	79.40	95.00	1666.09	172.12	22.59	171.07	1.59	172.56	82.48
1780.00	16.00	81.70	93.00	1755.40	198.04	26.86	196.66	.81	198.49	82.22
1874.00	16.70	81.20	94.00	1845.60	224.47	30.79	222.83	.76	224.95	82.13
1960.00	17.00	80.70	86.00	1927.91	249.37	34.72	247.45	.39	249.87	82.01
2062.00	17.70	79.20	102.00	2025.27	279.77	40.03	277.39	.81	280.27	81.79
2125.00	18.80	78.20	63.00	2085.10	299.50	43.90	296.74	1.82	299.97	81.58
2188.00	19.30	77.80	63.00	2144.65	320.06	48.18	316.85	.82	320.49	81.35
2283.00	21.00	77.10	95.00	2233.83	352.78	55.30	348.79	1.81	353.15	80.99
2346.00	21.50	76.80	63.00	2292.55	375.61	60.45	371.04	.81	375.93	80.75
2440.00	22.00	77.30	94.00	2379.85	410.43	68.26	404.98	.57	410.69	80.43
2535.00	22.10	78.90	95.00	2467.91	446.09	75.61	439.88	.64	446.33	80.25
2629.00	22.40	80.80	94.00	2554.91	481.67	81.88	474.91	.83	481.92	80.22
2724.00	22.80	81.50	95.00	2642.61	518.13	87.49	510.98	.51	518.42	80.28
2818.00	24.50	80.60	94.00	2728.71	555.80	93.37	548.23	1.85	556.12	80.33
2913.00	24.50	78.90	95.00	2815.16	595.18	100.38	586.99	.74	595.51	80.30
3007.00	24.50	77.60	94.00	2900.70	634.16	108.32	625.15	.57	634.47	80.17
3102.00	23.40	78.70	95.00	2987.52	672.72	116.24	662.89	1.25	673.01	80.05
3196.00	22.40	79.60	94.00	3074.11	709.29	123.13	698.81	1.13	709.58	80.01
3291.00	23.10	77.30	95.00	3161.72	746.02	130.50	734.80	1.19	746.30	79.93
3385.00	24.00	74.80	94.00	3247.89	783.54	139.57	771.24	1.43	783.76	79.74
3480.00	24.30	73.80	95.00	3334.58	822.31	150.08	808.65	.53	822.46	79.49
3574.00	23.60	68.20	94.00	3420.49	860.11	162.47	844.70	2.53	860.18	79.11
3669.00	22.00	66.70	95.00	3508.07	896.26	176.57	878.70	1.79	896.27	78.64
3764.00	22.10	68.30	95.00	3596.12	931.28	190.22	911.65	.64	931.28	78.21
3858.00	23.50	71.80	94.00	3682.78	967.31	202.61	945.88	2.07	967.34	77.91
3953.00	25.40	74.80	95.00	3769.26	1006.46	213.87	983.54	2.39	1006.53	77.73
4047.00	27.70	76.40	94.00	3853.34	1048.43	224.29	1024.24	2.56	1048.51	77.65

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	Course Length FT	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Dogleg Severity Deg/100	CLOSURE Distance FT	Direction Deg
4142.00	27.70	76.60	95.00	3937.45	1092.56	234.60	1067.18	.10	1092.66	77.60
4235.00	24.40	75.00	93.00	4021.00	1133.35	244.59	1106.77	3.63	1133.48	77.54
4330.00	23.40	76.70	95.00	4107.85	1171.80	254.01	1144.09	1.28	1171.94	77.48
4424.00	24.60	78.20	94.00	4193.72	1210.03	262.30	1181.41	1.43	1210.17	77.48
4519.00	26.30	77.80	95.00	4279.50	1250.85	270.79	1221.33	1.80	1250.99	77.50
4613.00	25.00	81.20	94.00	4364.24	1291.51	278.23	1261.32	2.09	1291.64	77.56
4709.00	23.60	84.70	96.00	4451.74	1330.88	283.11	1300.51	2.09	1330.97	77.72
4803.00	22.20	83.60	94.00	4538.33	1367.27	286.83	1336.89	1.56	1367.32	77.89
4898.00	21.40	82.60	95.00	4626.53	1402.42	291.06	1371.92	.93	1402.45	78.02
4992.00	20.00	79.20	94.00	4714.47	1435.60	296.28	1404.72	1.96	1435.62	78.09
5087.00	19.40	77.60	95.00	4803.91	1467.62	302.72	1436.08	.85	1467.64	78.10
5182.00	20.00	80.80	95.00	4893.35	1499.63	308.70	1467.53	1.30	1499.65	78.12
5276.00	18.50	94.20	94.00	4982.13	1530.06	310.18	1498.29	4.95	1530.06	78.30
5371.00	17.90	101.40	95.00	5072.39	1558.00	306.19	1527.64	2.45	1558.02	78.67
5465.00	16.50	102.40	94.00	5162.19	1583.49	300.47	1554.84	1.52	1583.60	79.06
5559.00	14.60	106.80	94.00	5252.74	1606.11	294.18	1579.22	2.38	1606.38	79.45
5654.00	12.30	99.60	95.00	5345.14	1626.07	289.03	1600.66	2.99	1626.55	79.76
5748.00	11.80	97.70	94.00	5437.07	1644.48	286.07	1620.06	.68	1645.12	79.99
5842.00	4.80	121.80	94.00	5530.05	1656.42	282.70	1632.95	8.16	1657.24	80.18
5915.00	3.70	141.30	73.00	5602.85	1659.71	279.26	1637.02	2.47	1660.66	80.32
6012.00	4.30	140.30	97.00	5699.61	1662.85	274.02	1641.29	.62	1664.01	80.52
6107.00	6.20	108.40	95.00	5794.23	1668.97	269.66	1648.44	3.59	1670.35	80.71
6201.00	10.10	96.40	94.00	5887.27	1681.21	267.13	1661.45	4.50	1682.79	80.87
6295.00	10.70	85.60	94.00	5979.73	1697.70	266.88	1678.35	2.17	1699.43	80.96
6390.00	11.30	77.60	95.00	6072.99	1715.76	269.56	1696.23	1.72	1717.52	80.97
6485.00	12.10	75.30	95.00	6166.02	1735.01	274.08	1714.95	.97	1736.72	80.92
6579.00	11.90	74.70	94.00	6257.96	1754.52	279.14	1733.83	.25	1756.16	80.85
6673.00	12.00	73.20	94.00	6349.93	1773.92	284.52	1752.53	.35	1775.48	80.78
6769.00	11.20	68.00	96.00	6443.97	1793.03	290.90	1770.73	1.37	1794.47	80.67
6862.00	10.70	63.00	93.00	6535.28	1810.24	298.20	1786.80	1.15	1811.51	80.53
6957.00	9.90	63.80	95.00	6628.75	1826.65	305.81	1801.99	.86	1827.75	80.37
Projection to TD										
7000.00	9.90	63.80	43.00	6671.11	1833.81	309.08	1808.62	.00	1834.84	80.30

WOLVERINE GAS & OIL COPORATION

**WOLVERINE FEDERAL #17-5
C/NE SEC.17.T23S,R1W
SEVIER CO., UT**

**RECEIVED
SEP 15 2005
DIV. OF OIL, GAS & MINING**

GEOLOGIC REPORT

ON

**WOLVERINE FEDERAL #17-5
C/NE SEC.17, T23S,R1S
SEVIER CO., UT**

FOR

**WOLVERINE GAS & OIL CORPORATION
ONE RIVER FRONT PLAZA
55 CAMPAU NW
GRAND RAPIDS, MI 49503-2616**

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WELL DATA SUMMARY

WELL NAME	WOLVERINE FEDERAL #17-5
OPERATOR	WOLVERINE GAS & OIL CORP
API #	043 - 041 - 30038
WELL CLASSIFICATION	DEVELOPMENT COVENANT FIELD
DRILLING CONTRACTOR	UNIT #111
WELL LICENSE #	043 -041 -30038
ELEVATION - GROUND LEVEL KELLY BUSHING	5736' 5753'
SPUD DATE	3-14-05
SURFACE CASING	2017' OF 13 3/8 "
INTERMEDIATE CASING	5963' OF 9 5/8"
PRODUCTION CASING	7000' OF 7"
HOLE SIZE	16", 12 1/4", 8 1/2"
SAMPLE INTERVAL	2050' - 7000'
GAS DETECTION	2004' - 7000'
OPEN HOLE LOGS	GR,CAL,SP,DLL,MFSL,DIP METER, EMI
MUD TYPE	SALT GEL, FLOWZAN
WELL STATUS	AWAITING COMPLETION

Kelly Bushing 5753'

Formation	Prog.(tvd)	Spl. Top(md)	Spl. Top(tvd)	Log Top(md)	Log Top(tvd)	Sub Sea
Arapien	Surface					
Twin Creek	5539	6002	5697	6002	5697	56
Navajo	5918	6347	6129	6340	6125	+372

**WOLVERINE GAS & OIL CORPORATION
WOLVERINE FEDERAL #17-5
C/NE SEC. 17,T23S,R1W
SEVIER COUNTY, UTAH**

The Wolverine Federal #17-5 was the fifth well drilled in the Covenant Field. Decollement Consulting began sample coverage at 2050' under 2017' of 13 3/8" surface casing. Gas detection was rigged up on Unit Rig #111 on March 24, 2005. Crews collected 30' lagged samples to total depth (7000'). Intermediate hole was drilled (12 1/4") to 5963' and 9 5/8" casing run. The hole was drilled to total depth (8 1/2") and 7" casing set to total depth. A full suite of logs was run including Dip Meter and EMI. Gas Detection was run from 2017' to total depth.

NAVAJO SANDSTONE 6125' TVD Log +372' SS

The Navajo was white, clear, quartzose, light brown, fine (upper) to medium (upper) grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous, cement, friable, predominantly unconsolidated, rainbows on the wash water, strong hydrocarbon odor, brown oil stain, yellow gold oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity. There was 300' of oil saturated oil column.

CONCLUSION: Oil saturated reservoir-Awaiting Completion

BIT RECORD

WELL NAME

WOLVERINE FEDERAL #17-5

LOCATION

C/NE SEC.17, T23S, R1W

SURFACE CASING

2017' OF 13 7/8

SPUD DATE

3-14-05

TD DATE

4-11-05

BIT	1	2	3RR	2RR	4	5
SIZE	17 ½	17 ½	17 ½	17 ½	12 ¼	12 ¼
MAKE	SEC	DPI	STC	DPI	DPI	RTC
TYPE	FAST	SC65	STXRTC	SC65	MP45B2	HP43A
SERIAL #	WMR-812	1961943	MR414163	191943	1963786	B73556
JETS	OPM	5 X 16	4 X 28	5 X 18	5 X 18	3 X 22
OUT @	1050	1745	1816	2017	3018	4242
FOOTAGE	913	695	58	124	996	1161
HOURS	46 ½	25 ½	16	18 ½	73	46 ½
ACC HRS	46 ½	72	88	106 ½	179 ½	226
WT	42	12	31	20	15	30
RPM	0/30	0/30	0/32	0/45	0/40	0/30
PP	1250	1250	1250	1250	1400	1700
MUD WT	8.7	8.8	8.6	8.5	9.3	9.8+
VIS	36	33	30	31	28	31
DEV	17.7	18.8	17.7	17.6	22.4	26.4

BIT	6	7	8	9
SIZE	12 ½	12 ¼	12 ½	8 ½
MAKE	RTC	SEC	RTC	SEC
TYPE	HP43AKPR	EBX5165	EHP53KFP	EBX503
SERIAL #	B7326	10687151	ER5818	
JETS	3 X 22	3 X 24	3 X 24	3 X 11
OUT @	4691	5177	5963	7000
FOOTAGE	449	486	729	1046
HOURS	31	41	49 ½	35 ½
ACC. HRS	257	298	348 ½	384
WT	30	40	4	32
RPM	0/30	0/35	0/35	0/30
PP	1530	1880	1880	1450
MUD WT	10.2	10.2+	8.8	8.8
VIS	31	33	32	32
DEV	23.6	20	6.2	9.9

DAILY DRILLING SUMMARY

DATE	DEPTH	PROG.	HRS	MUD	VIS	WL	PH	ACTIVITY
3-14-05	263	126	6	8.7	34	NC	8.5	Nipple up, Drill

3-15-05	719	456	21	8.8	30	NC	8.8	Drill
3-16-05	1047	328	20 ½	9.0	33	NC	8.5	Drill, Work on pump
3-17-05	1340	295	16 ½	9.2	34	NC	9.0	Drill, Bit Trip
3-18-05	1713	473	21	9.4	30	NC	8.5	Drill
3-19-05	1772	59	6	9.1	33	NC	9.5	Drill, Trip Bit, Drill
3-20-05	1803	31	11	9.2	34	NC	9.5	RIH, Drill
3-21-05	1903	100	16	9.4+	33	NC	10	Drill, Trip, MWD
3-22-05	2019	119	20	9.3	32	NC	9.5	RIH, Drill, Trip ,Casing
3-23-05	2019	Nil	Nil	9.4	33	NC	10	Cement, Pres test, Nipple up
3-24-05	2019	Nil	Nil	9.6	34	NC	10.5	Wait on BOP Parts
3-25-05	2019	Nil	Nil	8.7	36	NC	7.0	RIH, Drill Shoe, Drill
3-26-05	2510	491	23	8.7	28	NC	10	Drill
3-27-05	2815	305	24	9.3	28	NC	7.0	Drill
3-28-05	3015	200	23 ½	9.6	30	NC	10	Drill
3-29-05	3422	407	16 ½	9.6	31	NC	8.0	Drill, Bit Trip
3-30-05	4084	622	23 ½	9.8+	31	NC	9.8	Drill
3-31-05	4283	99	14 ½	10	33	NC	9.5	Drill, Trip Bit
4-01-05	4666	383	23 ½	10.2	32	NC	9.5	Drill
4-02-05	4734	67	8	10.2	32	NC	9.0	Drill, Trip Bit
4-03-05	4957	223	19	10.2	33	NC	9.5	Drill, Work on Pump
4-04-05	5177	220	20 ½	10.2	33	NC	9.0	Drill, Trip Bit
4-05-05	5582	405	15	10.2	30	NC	8.5	RIH, Drill, Trip MWD
4-06-05	5953	371	22 ½	10.4	30	NC	9.5	Drill
4-07-05	5963	10	1	10.6	29	NC	9.0	Drill, Trip Run 9 5/8"
4-08-05	5999	36	2 ½	10.6	33	NC	9.5	Nipple up, Drill
4-09-05	6599	600	23 ½	8.8	32	8.8	11.2	Drill
4-10-05	7000	401	10	8.7	32	12.0	10.6	Drill, CO Logs
4-11-05	7000	Nil	Nil	8.8	32	8.0	8.5	Logging w/Halliburton

DEVIATION SURVEYS

DEPTH	INCLINATION	DIRECTION
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172.00	.80	264.30
203.00	1.40	270.60
233.00	2.00	269.60
266.00	2.30	266.40
297.00	2.80	271.00
327.00	3.50	276.00
357.00	3.80	273.60
387.00	2.90	276.30
418.00	2.10	270.80
448.00	1.00	285.90
478.00	.90	285.10
509.00	.90	326.40
539.00	.80	333.00
569.00	1.40	357.10
600.00	1.20	339.00
630.00	1.30	342.70
660.00	1.20	327.20
691.00	1.50	1.50
721.00	1.10	6.60
751.00	1.50	48.10
782.00	2.60	72.90
782.00	2.60	72.90
812.00	4.50	76.90
843.00	5.70	79.00
875.00	6.90	83.10
904.00	8.40	84.50
DEPTH	INCLINATION	DIRECTON
935.00	9.00	82.70
964.00	9.70	85.20
994.00	10.40	85.60
1026.00	10.70	88.70

1057.00	11.20	88.90
1057.00	11.20	88.90
1089.00	11.40	89.20
1120.00	11.90	87.80
1184.00	12.40	88.50
1246.00	12.30	88.00
1278.00	12.90	87.10
1309.00	12.60	88.70
1341.00	13.10	87.30
1372.00	13.50	84.70
1592.00	14.90	79.90
1687.00	16.40	79.40
1780.00	16.00	81.70
1874.00	16.60	81.20
1960.00	17.00	80.70
2062.00	17.70	79.20
2125.00	18.80	78.20
2188.00	19.30	77.80
2629.00	22.40	80.80
2724.00	22.80	81.50
2818.00	24.50	80.60
2818.00	24.50	80.60
2913.00	24.50	78.90
3007.00	24.50	77.60
3007.00	24.50	77.60
3102.00	23.40	78.70
DEPTH	INCLINATION	DIRECTION
3291.00	23.10	77.30
3385.00	24.00	74.80
3480.00	24.30	73.8
3574.00	23.60	68.20
3669.00	22.00	66.70

3669.00	22.00	66.70
3764.00	22.10	68.30
3858.00	23.50	71.80
3953.00	25.40	74.80
4047.00	27.70	76.40
4142.00	27.70	76.60
4142.00	27.70	76.70
4235.00	24.40	75.00
4330.00	23.40	76.70
4424.00	24.60	78.20
4424.00	24.60	78.20
4519.00	23.60	77.80
4613.00	25.00	81.20
4613.00	25.00	81.20
4709.00	23.60	84.70
4709.00	23.60	84.70
4803.00	22.20	83.60
4898.00	21.40	82.60
4898.00	21.40	82.60
4992.00	20.00	79.20
5087.00	19.40	77.06
5087.00	19.40	77.06
5182.00	20.00	80.80
5276.00	18.50	94.20
5371.00	17.90	101.40
5371.00	17.90	101.40
DEPTH	INCLINATION	DIRECTION
5465.00	16.50	102.40
5559.00	14.60	106.00
5654.00	12.30	99.60
5654.00	12.30	99.60
5748.00	11.80	97.70

5842.00	4.80	121.80
5915.00	3.70	141.30
5915.00	3.70	141.30
6012.00	4.30	140.30
6107.00	6.20	108.40
6201.0	10.10	96.40
6201.00	10.10	96.40
6295.00	10.70	85.60
6390.00	11.30	77.60
6485.00	12.10	75.30
6579.00	11.90	74.70
6673.00	12.00	73.20
6769.00	11.20	68.00
6862.00	10.70	63.00
6957.00	9.90	63.80

SAMPLE DESCRIPTIONS

**Wolverine Gas & Oil Corporation
Wolverine Federal #17-5
C/NE Sec. 17, T23S, R1W
Sevier Co., Utah**

- 2050-80** **SHALE- 30%** Red brown, silty, blocky, slightly calcareous.
LIMESTONE- 70% Light to medium gray, argillaceous, soft to firm, lithographic, mudstone.
- 2080-2110** **LIMESTONE- 100%** Light to medium gray, argillaceous, soft to firm, lithographic, mudstone.
- 2110-40** **SANDSTONE- 50%** White, clear, light red, fine to coarse grained, sub angular to rounded, fair to poor sorting, unconsolidated.
SHALE- 20% Red brown, blocky, firm, slightly calcareous.
LIMESTONE- 30% Light to medium gray, argillaceous, soft to firm, lithographic, mudstone.
- 2140-70** **SHALE- 30%** Red brown, blocky, firm, slightly calcareous.
SILTSTONE- 30% Red brown, granular, argillaceous, slightly calcareous.
SANDSTONE- 30% Red brown, clay filled, floating medium to course grained sand clasts.
LIMESTONE- 10% Light to medium gray, argillaceous, soft to firm, lithographic, mudstone.
- 2170-2700** **SHALE- 10%** Red brown, blocky, firm, slightly calcareous.
LIMESTONE- 90% Light medium gray, argillaceous, lithographic, mudstone, anhydrite fracture infill.
- 2200-30** **SILTSTONE- 30%** Light gray, limy, argillaceous, firm.
LIMESTONE-70% Light to medium gray, argillaceous, lithographic, mudstone, anhydrite fracture infill.
- 2230-60** **SILTSTONE- 10%** Red brown, argillaceous, slightly calcareous, firm.
SANDSTONE- 10% Light red orange, clay filled, unconsolidated, conglomeratic.
LIMESTONE- 80% Light gray, mottled, argillaceous, lithographic, mudstone, abundant anhydrite fracture infill.
- 11**
- 2260-90** **SHALE- 40%** Red brown, argillaceous, slightly calcareous, firm.
SILTSTONE- 30% Light gray, limy, argillaceous, firm.
LIMESTONE- 30% Light gray, mottled, argillaceous, lithographic, mudstone, abundant anhydrite fracture infill.
- 2290-2320** **SHALE- 70%** Variable color, salt casts, potash crystal's, blocky, firm, slightly calcareous.
SANDSTONE- 20% White, clear, quartzose, conglomeratic, sub angular to rounded,

fair to poorly sorted, unconsolidated.

LIMESTONE- 10% Light gray, argillaceous, lithographic, mudstone.

- 2320-50** **SHALE- 40% Variable color, red brown, light grey green, tan, blocky, firm.**
SILTSTONE- 40% Red brown, arenaceous, argillaceous, mottled with anhydrite.
LIMESTONE- 10% Light gray, argillaceous, lithographic, mudstone.
ANHYDRITE- 10% White, soft, chalky
- 2350-80** **SHALE- 20% Variable color, potash inclusions.**
SANDSTONE- 80% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, unconsolidated.
- 2380-2410** **SHALE- 80% Variable color, red brown, light grey green, white, silty.**
SILTSTONE- 20% White, sandy, argillaceous, soft to firm.
- 2410-40** **SHALE- 30% Light gray green, blocky, firm, waxy.**
SILTSTONE- 20% White, light grey, limy, blocky, firm.
LIMESTONE- 40% Light gray, argillaceous, lithographic, mudstone.
ANHYDRITE- 10% White, chalky, soft, abundant potash.
- 2440-70** **SHALE- 10% Light gray green, blocky, waxy, firm.**
LIMESTONE- 70% Light gray, argillaceous, lithographic, mudstone.
ANHYDRITE-20% White, chalky, soft, abundant potash.
- 2470-2500** **SHALE- 10% Light gray green, blocky, waxy, firm.**
LIMESTONE- 80% Light grey, argillaceous, lithographic, mudstone.
ANHYDRITE- 10% White, chalky, soft, abundant potash.
- 2500-30** **SHALE- 50% Red brown, silty, sandy, mottled with anhydrite, soft to firm.**
SILTSTONE- 40% White, green, anhydritic, firm.
ANHYDRITE- 10% White, chalky, silty, abundant potash, dissolution casts.
- 2530-60** **SHALE- 10% Red brown, silty, sandy, mottled with anhydrite, soft to firm.**
LIMESTONE- 90% Light gray green, lithographic, mudstone, abundant anhydrite fracture infill.
- 12**
- 2560-90** **SHALE- 10% Red brown, silty, sandy, mottled with anhydrite, soft to firm.**
LIMESTONE- 90% Light gray green, lithographic, mudstone, abundant anhydrite fracture infill.
- 2590-2670** **SHALE- 20% Light gray, blocky, smooth, waxy, firm.**
LIMESTONE- 80% Light to medium gray, crystalline, dense in part, argillaceous, lithographic, mudstone.

- 2620-50** SHALE- 30% Light gray, blocky, smooth, waxy, firm.
LIMESTONE-70% Light to medium gray, crystalline, dense in part, argillaceous, lithographic, mudstone.
- 2650-80** SHALE- 10% Light gray, blocky, smooth, waxy, firm.
LIMESTONE-90% Light to medium gray, crystalline, dense in part, white, light grey, soft, chalky in part, earthy, lithographic, mudstone.
- 2680-2710** LIMESTONE- 100% Light to medium gray, crystalline, dense in part, white, light gray, soft, chalky in part, earthy, lithographic, mudstone.
- 2710-40** LIMESTONE- 100% Light to medium gray, argillaceous, lithographic, white, soft, chalky, mudstone in part.
- 2740-70** LIMESTONE- 100% Light to medium gray, argillaceous, lithographic, white, soft, chalky, mudstone in part.
- 2770-2800** LIMESTONE- 100% As Above, 30% soft, chalky, limy, clay, abundant anhydrite, white soft chalky.
- 2800-30** LIMESTONE-100% Light gray, argillaceous, lithographic, earthy, mudstone, white, silty, soft, limy, abundant white, crystalline calcite.
- 2830-60** LIMESTONE- 100% Light gray, argillaceous, lithographic, earthy, mudstone, white, silty, soft, limy, abundant white, crystalline, calcite, 30% soft, chalky.
- 2860-90** LIMESTONE- 100% Light gray, argillaceous, lithographic, earthy, mudstone, white, silty, soft, limy, abundant white, crystalline, calcite, 20% soft, chalky.
- 2890-2920** LIMESTONE- 100% Light gray, argillaceous, lithographic, earthy, mudstone, white, silty, soft, limy, abundant white, crystalline, calcite, 40% soft, chalky.
- 2920-50** LIMESTONE- 100% Light gray, argillaceous, lithographic, earthy, mudstone, white, silty, soft, limy, abundant white, crystalline, calcite, 50% soft, chalky.

- 2950-80** LIMESTONE- 100% Light gray, argillaceous, lithographic, earthy, mudstone, white, silty, soft, limy, abundant white, crystalline, calcite, 40% soft, chalky.
- 2980-3010** LIMESTONE- 100% Light to medium gray, earthy, argillaceous, lithographic, 30% white, soft, chalky, 70% mudstone, becoming medium to dark gray in part.
- 3010-40** LIMESTONE-100% Light to medium gray, earthy, argillaceous, lithographic, 10% white, soft, chalky, 90% mudstone, becoming medium to dark gray in part.

- 3040-70 Limestone- 100% Light to medium gray, earthy, argillaceous, lithographic, 30% white, soft, chalky, 70% mudstone, becoming medium to dark gray in part.**
- 3070-3100 Limestone- 100% Light to medium gray, earthy, argillaceous, lithographic, 10% white, soft, chalky, 90% mudstone, becoming red brown in part.**
- 3100-30 Limestone- 100% Light to medium gray brown, crystalline, dense, argillaceous, lithographic, mudstone.**
- 3130-60 Limestone- 100% Light to medium gray brown, light gray, soft to firm, silty, abundant white calcite.**
- 3160-90 Limestone- 100% Light to medium gray brown, crystalline, dense, firm to hard, argillaceous, lithographic, mudstone.**
- 3190-3220 Limestone- 100% Light to medium gray brown, light to medium gray, crystalline, dense, argillaceous, lithographic, mudstone.**
- 3220-50 Limestone- 100% Light to medium gray brown, crystalline, dense, firm to hard, argillaceous, lithographic, mud stained.**
- 3250-80 Limestone-100% Light to medium gray brown, crystalline, dense, firm to hard, argillaceous, lithographic, mud stone, abundant white, sucrose firm crystalline calcite fracture infill.**
- 3280-3310 Limestone-100% Light to medium gray brown, crystalline, dense, firm to hard, argillaceous, lithographic, mudstone, 20% white, soft, limy, mudstone.**
- 3310-40 Limestone-100% Light to medium gray brown, crystalline, dense, firm to hard, argillaceous, lithographic, mudstone, 20% white, soft, limy, mudstone.**
- 3340-70 Limestone-100% Light to medium gray brown, dense, crystalline, firm to hard, argillaceous, lithographic, mudstone, mottled in part, abundant white with salt casts, very fine to fine crystalline, calcite fractures in fill.**
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- 3370-3400 Limestone- 100% Light to medium gray brown, dense, crystalline, firm to hard, argillaceous, lithographic, mudstone.**
- 3400-30 Limestone- 100% medium to dark gray brown, dense, firm to hard, crystalline, lithographic, mudstone, abundant sucrose calcite.**
- 3230-60 Limestone-100% Light to medium gray brown, medium to dark gray brown, hard, dense, crystalline, firm to hard, lithographic, mudstone.**
- 3460-90 Limestone-100% Medium to dark gray, medium to dark gray brown, lithographic,**

mudstone, abundant white, sucrosic calcite fracture in fill.

- 3490-3520 LIMESTONE-100% Medium to dark gray, medium to dark gray brown, lithographic, mudstone, 20% light to medium gray, earthy, soft to firm.**
- 3520-50 LIMESTONE-100% Medium to dark gray, medium to dark gray brown, lithographic, mudstone, 10% white light grey, soft, earthy.**
- 3550-80 LIMESTONE-100% Medium to dark gray, medium to dark gray brown, crystalline, dense, firm to hard, light gray, soft, chalky(10%).**
- 3580-3610 LIMESTONE-100% Medium to dark gray, medium to dark gray brown, crystalline, dense, firm to hard, light gray, soft, chalky(10%).**
- 3640-40 LIMESTONE-100% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part.**
- 3640-70 LIMESTONE-70% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part.
SILTSTONE- 30% White, light gray green, limy, friable, clay matrix, firm to hard.**
- 3670-3700 LIMESTONE-60% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite fracture fill.
SILTSTONE-40% White, light gray green, limy, friable, clay matrix, firm to hard.**
- 3700-30 SHALE-20% Red brown, blocky, slightly calcareous, salt casts, abundant potash.
SILTSTONE- 30% White, light gray green, limy, friable, clay matrix, firm to hard.
LIMESTONE- 50% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite fracture fill.**

- 3730-60 SHALE-10 % Red brown, blocky, slightly calcareous, salt casts, abundant potash.
SILTSTONE-30% White, light gray green, limy, friable, clay matrix, firm to hard.
LIMESTONE-60% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite.**
- 3760-90 SHALE-20% Red brown, blocky, slightly calcareous, salt casts, abundant potash.
SILTSTONE-30% White, light gray green, limy, friable, clay matrix, firm to hard.
LIMESTONE-40% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite.**
- 3790-3820 SHALE- 20% Red brown, blocky, slightly calcareous, salt casts, abundant potash.**

SILTSTONE-20% White, light gray green, limy, friable, clay matrix, firm to hard.
LIMESTONE-60% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite.

3820-50 **SHALE-30%** Red brown, silty, blocky, slightly calcareous.
SILTSTONE- 20% Light gray, white, light gray brown, arenaceous, friable, limy, clay matrix.
LIMESTONE- 50% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite.

3850-80 **SHALE-30%** Red brown, light red, silty, sandy, slightly calcareous.
SILTSTONE-20% Light gray, white, arenaceous, limy, anhydrite, firm.
LIMESTONE-40% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite.
ANHDRITE-10% White, soft, chalky.

3880-3910 **SHALE-10%** Red brown, light red, silty, sandy, slightly calcareous.
SILTSTONE- 20% Red brown, light red, silty, sandy, slightly calcareous.
LIMESTONE-70% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite.

3910-40 **SHALE-10%** Red brown, soft to firm, blocky.
SILTSTONE-10% Red brown, light red, silty, sandy, slightly calcareous.
LIMESTONE-40% Medium to dark gray, medium to dark gray brown, crystalline, lithographic, mudstone, light gray to white, soft, chalky in part, abundant calcite.
SANDSTONE-30% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poor sorted, unconsolidated.
ANHDRITE-10% White, soft, chalky.

3940-70 **LIMESTONE-100%** Light gray, white, soft, chalky, (30%) medium to dark gray, argillaceous, lithographic, mudstone, abundant white, crystalline, calcite.

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3970-4000 **LIMESTONE-100%** Light gray, white, soft, chalky, (30%) medium to dark gray, argillaceous, lithographic, mudstone, abundant white, crystalline, calcite, silty in part, abundant white, very fine to fine crystalline calcite.

4000-30 **LIMESTONE-100%** Light gray, white, soft, chalky, (30%) medium to dark gray, argillaceous, lithographic, mudstone, abundant white, silty in part, abundant white, very fine to fine crystalline calcite 20% light gray, white, soft, chalky, silty.

4030-60 **LIMESTONE-100%** Light gray, white, soft, chalky, (30%) medium to dark gray, argillaceous, lithographic, mudstone, abundant white, silty in part, abundant white, very fine to fine crystalline calcite 20% light gray, white, soft, chalky, silty.

- 4060-90 **LIMESTONE-100%** Light to medium gray, crystalline, dense, lithographic, mudstone, 10% light gray, white, soft, chalky, abundant white, crystalline, calcite fracture in fill.
- 4090-4120 **LIMESTONE-100%** Light to medium gray, crystalline, dense, lithographic, mudstone, 10% light gray, white, soft, chalky, abundant white, crystalline, calcite fracture in fill.
- 4120-50 **SHALE-10%** Red brown, blocky, firm, slightly calcareous.
LIMESTONE-90% Light to medium gray, crystalline, dense, lithographic, mudstone, 10% light gray, white, soft, chalky, abundant white, crystalline, calcite fracture in fill.
- 4150-80 **LIMESTONE-100%** Light gray to white, soft, limy, chalky(30%), 70% medium dark gray, crystalline, lithographic, mudstone.
- 4180-4210 **LIMESTONE-100%** Light gray to white, soft, limy, chalky(30%), 70% medium dark gray, crystalline, lithographic, mudstone.
- 4210-40 **LIMESTONE-100%** 100% Light gray to white, soft, limy, chalky(30%), 70% medium dark gray, crystalline, lithographic, mudstone.
- 4240-70 **SHALE-20%** Red brown, varied color, white, gray, blocky, smooth, silty in part.
SILTSTONE-10% White, arenaceous, argillaceous, anhydrite, slightly calcareous, clay matrix.
LIMESTONE-70% Light to medium gray, argillaceous, lithographic, mudstone.
- 4270-4300 **SHALE-30%** Red brown, varied color, white, gray, blocky, smooth, silty in part.
SILTSTONE-10% Light gray brown, light red, white, arenaceous, argillaceous, slightly calcareous, firm.
LIMESTONE-60% Light to medium gray, argillaceous, lithographic, mudstone.

- 4300-30 **SHALE-50%** Varied color, red brown, gray, white, grey green, blocky, silty, slightly calcareous.
SILTSTONE-10% Light gray brown, light red, white, arenaceous, argillaceous, slightly calcareous, firm.
LIMESTONE-40% Light to medium gray, argillaceous, lithographic, mudstone.
- 4330-60 **SHALE-70%** Varied color, red brown, gray, white, grey green, blocky, smooth, firm.
LIMESTONE-30% Light to medium gray, argillaceous, lithographic, mudstone.
- 4360-90 **SHALE- 20%** Varied color, red brown, gray, white, gray green, blocky, smooth, firm.
SILTSTONE-20% Light gray, white, arenaceous, argillaceous, slightly calcareous, anhydritic.
LIMESTONE-40% Light to medium gray, argillaceous, lithographic, mudstone.

ANHYRITE-20% White, soft, chalky.

4390-4420 SILTSTONE-20% White, green, argillaceous, limy.

LIMESTONE-80% Light to medium gray, argillaceous, lithographic, mudstone.

4420-50 LIMESTONE-100% Light to medium gray, argillaceous, lithographic, mudstone (10%) soft chalky.

4450-80 LIMESTONE-100% Light to medium gray, argillaceous, lithographic, mudstone, 20% soft, chalky.

4480-4510 LIMESTONE-100% Light to medium gray, argillaceous, lithographic, mudstone, 30% soft, chalky.

4510-40 LIMESTONE-100% Light to medium gray, argillaceous, lithographic, mudstone, 20% soft.

4540-70 LIMESTONE-100% Light to medium gray, argillaceous, lithographic, mudstone, 30% soft.

**4570-4600 LIMESTONE-80% Light to medium gray, argillaceous, lithographic, mudstone.
SILTSTONE-20% White, soft to firm, limy, arenaceous.**

4600-30 LIMESTONE-100% Light to medium gray, firm to hard, crystalline, white, light gray, soft, chalky, abundant very fine to fine crystalline, calcite fracture in fill.

**4630-60 LIMESTONE-90% Light to medium gray, firm to hard, crystalline, white, light gray, soft, chalky, abundant very fine to fine crystalline, calcite fracture in fill.
SILTSTONE-10% White, soft to firm, limy, arenaceous.**

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4660-90 LIMESTONE-100% Light to medium gray brown, crystalline, argillaceous, lithographic, mudstone, 20% soft, silty.

4690-4720 LIMESTONE-100% Light to medium gray, firm to hard, crystalline, white, light gray, soft, chalky, abundant very fine to fine crystalline, calcite fracture in fill, 20% soft.

4720-50 LIMESTONE-100% Light to medium gray, firm to hard, crystalline, white, light gray, soft, chalky, abundant very fine to fine crystalline, calcite fracture in fill, 20% soft.

4750-80 LIMESTONE-100% Light to medium gray, firm to hard, crystalline, white, light gray, soft, chalky, abundant very fine to fine crystalline, calcite fracture in fill, 20% soft.

4780-4810 LIMESTONE-100% Light to medium gray brown, medium dark gray brown, dense, crystalline, firm to hard, white, light gray, soft, chalky, silty, (20%) mudstone, abundant

white, very fine to fine crystalline, calcite fracture infill.

- 4810-40 Limestone-100% Light to medium gray brown, medium dark gray brown, dense, crystalline, firm to hard, white, light gray, soft, chalky, silty, (20%) mudstone, abundant white, very fine to fine crystalline, calcite fracture infill.
- 4840-70 Limestone-100% Light to medium gray brown, medium dark gray brown, dense, crystalline, firm to hard, white, light gray, soft, chalky, silty, (30%) mudstone, abundant white, very fine to fine crystalline, calcite fracture infill.
- 4870-4900 Limestone-100% Light to medium gray brown, medium dark gray brown, dense, crystalline, firm to hard, white, light gray, soft, chalky, silty, (20%) mudstone, abundant white, very fine to fine crystalline, calcite fracture infill.
- 4900-30 Limestone-100% Light to medium gray brown, medium dark gray brown, dense, crystalline, firm to hard, white, light gray, soft, chalky, silty, (40%) mudstone, abundant white, very fine to fine crystalline, calcite fracture infill.
- 4930-60 Limestone-100% Light to medium gray, argillaceous, lithographic, earthy, soft to firm, mudstone.
- 4960-90 Shale-100% Red brown, white, soft to firm, calcite, earthy.
Limestone-80% Light to medium gray, argillaceous, lithographic, earthy, soft to firm, mudstone.
- 4990-5020 Limestone-100% Light to medium gray brown, medium to dark gray brown, crystalline, dense, argillaceous, lithographic, earthy, mudstone.

- 5020-50 Shale-30% White, soft, limy, silty.
Limestone-70% Light to medium gray brown, medium to dark gray brown, crystalline, dense, argillaceous, lithographic, earthy, mudstone.
- 5050-80 Shale-30% White, soft, limy, silty in part.
Limestone-70% Light to medium gray, crystalline, dense, lithographic, mudstone.
- 5080-5110 Shale-20% White, soft, limy, silty in part.
Limestone-80% Light to medium gray, crystalline, dense, lithographic, mudstone.
- 5110-40 Shale-20% White, silty, limy, soft.
Limestone-80% Light to medium gray, very fine to microcrystalline, argillaceous, lithographic, mudstone.
- 5140-70 Shale-20% White, silty, limy, soft.

LIMESTONE-80% Light to medium gray, very fine to microcrystalline, argillaceous, lithographic, mudstone.

- 5170-5200 SHALE-30% Light gray, soft, chalky, limy, silty.
LIMESTONE-70% Medium gray brown, crystalline, dense, argillaceous, lithographic, mudstone.**
- 5200-30 SHALE-20% Light gray, soft, chalky, limy, silty.
LIMESTONE-80% Medium gray brown, crystalline, dense, argillaceous, lithographic, mudstone.**
- 5230-60 SHALE-20% Light gray, soft, chalky, limy, silty.
LIMESTONE-80% 80% Medium gray brown, crystalline, dense, argillaceous, lithographic, mudstone.**
- 5260-90 SHALE-10% Light gray, soft, chalky, limy, silty.
LIMESTONE-90% Medium gray brown, crystalline, dense, argillaceous, lithographic, mudstone.**
- 5290-5320 SHALE-30% Light gray to white, chalky, soft, limy, silty.
LIMESTONE-70% Medium to dark gray brown, mottled, crystalline, dense, lithographic, mudstone.**
- 5320-50 SHALE-10% Light gray to white, chalky, soft, limy, silty.
LIMESTONE-90% Light to medium gray brown, medium dark grey brown, mottled, crystalline, dense, lithographic, mudstone.**
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- 5350-80 SHALE-20% Light gray to white, chalky, soft, limy, silty.
LIMESTONE-80% 90% Light to medium gray brown, medium dark gray brown, mottled, crystalline, dense, lithographic, mudstone.**
- 5380-5410 SHALE-20% Light gray to white, chalky, soft, limy, silty.
LIMESTONE-80% Medium to dark gray brown, crystalline, mudstone.**
- 5410-40 SHALE-30% Light gray to white, chalky, soft, limy, silty.
LIMESTONE-70% 80% Medium to dark gray brown, crystalline, mudstone.**
- 5440-70 SHALE-20% Light gray to white, chalky, soft, limy, silty.
SILTSTONE-30% Light gray green, argillaceous, limy, firm.
LIMESTONE-50% Medium to dark gray brown, crystalline, mudstone.**
- 5470-5500 SHALE-10% Light gray to white, chalky, soft, limy, silty.
SILTSTONE-20% Light gray brown, argillaceous, limy, firm.**

LIMESTONE- 70% Medium to dark gray brown, crystalline, mudstone.

- 5500-30** SHALE-10% Light gray to white, chalky, soft, limy, silty, trace salt cast.
SILTSTONE-10% Light gray brown, argillaceous, limy, firm.
LIMESTONE-80% Medium to dark gray brown, very fine to microcrystalline, mudstone.
- 5530-60** SHALE-30% Red brown, light gray to white, silty, blocky, soft to firm, slightly calcareous.
LIMESTONE-60% Light to medium gray brown, crystalline, argillaceous, lithographic, mudstone.
ANHYDRITE-10% White, soft, chalky.
- 5560-90** SHALE-30% Light gray to white, chalky, soft, limy, silty, trace salt cast, grades to siltstone in part.
SILTSTONE-10% Light gray, red orange, green, argillaceous, slightly calcareous.
LIMESTONE-50% Light to medium gray brown, crystalline, lithographic, mudstone.
ANHYDRITE-10% White, soft, chalky, crystalline in part.
- 5620-50** SHALE-30% Light gray to white, chalky, soft, limy, silty, trace salt cast, grades to siltstone in part.
SILTSTONE-10% Light gray, red orange, green, argillaceous, slightly calcareous.
LIMESTONE-50% Light to medium gray brown, crystalline, argillaceous, lithographic, mudstone.
ANHYDRITE-10% White, soft, chalky, crystalline in part.
- 5650-5680** SHALE-40% Light gray to white, red brown, soft, chalky, limy, silty, firm, silty.
LIMESTONE-50% Light to medium gray, argillaceous, earthy, lithographic, mudstone.
ANHYDRITE-10% White, soft, crystalline, chalky.
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- 5680-5710** SHALE-30% Red brown, silty, firm, slightly calcareous, light gray to white, soft, limy.
LIMESTONE-50% Light to medium gray brown, sucrose texture in part, very fine to microcrystalline, earthy in part, lithographic, mudstone.
ANHYDRITE-20% White, soft, crystalline, chalky.
- 5710-40** SHALE-10% Red brown, silty, firm, slightly calcareous, light gray to white, soft, limy.
LIMESTONE-60% Light medium gray brown, sucrose texture in part, very fine to microcrystalline, earthy in part, lithographic, mudstone.
ANHYDRITE-30% White, soft, crystalline, chalky.
- 5740-70** SHALE-10% Red brown, silty, slightly calcareous, firm.
SILTSTONE-10% Light gray green, argillaceous, limy, firm.
LIMESTONE-50% Light to medium gray, argillaceous, lithographic, crystalline, dense, mudstone.
ANHYDRITE-30% White, chalky, soft, silty in part.
- 5770-5800** SHALE -10% Red brown, silty, slightly calcareous, firm.

LIMESTONE-50% Light to medium gray, sucrose texture in part, argillaceous, earthy, lithographic, mudstone.

ANHYDRITE-40% White, crystalline, dense, sucrose texture in part, chalky.

- 5800-30** **SHALE-30%** Red brown, silty, firm, trace potash, dissolution casts.
LIMESTONE-20% Light to medium gray, sucrose texture in part, argillaceous, earthy, lithographic, mudstone.
ANHYDRITE-50% White, soft, chalky.
- 5830-60** **SHALE-20%** Red brown, gray, silty, firm, trace potash, dissolution casts.
LIMESTONE-10% Light to medium gray, sucrose texture in part, argillaceous, earthy, lithographic, mudstone.
SILTSTONE -20% Light gray, argillaceous, earthy, greasy in part.
ANHYDRITE 50% White, soft, chalky.
- 5860-90** **SHALE -10%** Red brown, gray, silty, firm, trace potash, dissolution casts.
LIMESTONE-40% Tan, microcrystalline, dense, mudstone.
ANHYDRITE- 40% White, soft, chalky.
SILTSTONE 10% Light gray, argillaceous, earthy, greasy in part.
- 5890-5920** **LIMESTONE 90%** Tan, light brown, firm to hard, microcrystalline, dense, mudstone.
SHALE 10% White, chalky, soft, limy, grade to argillaceous limestone.
- 5920-50** **LIMESTONE 100%** Tan, light brown, firm to hard, microcrystalline, dense, mudstone.
- 5963** **LIMESTONE 100%** Tan, light brown, firm to hard, microcrystalline, dense, mudstone.
- 5950-80** **LIMESTONE 100%** Tan, very fine crystalline, sucrose texture, mudstone to packstone, abundant white anhydrite.
- 5980-6010** **LIMESTONE 50%** Light gray, tan, very fine to microcrystalline, dense, sucrose texture in part, mudstone.
ANHYDRITE 20% White, soft, chalky.
SILTSTONE 30% White gray to white, anhydritic, chalky, soft to firm.
- 6010-40** **LIMESTONE 100%** Light to medium gray, mottled, argillaceous, dense, firm to hard, microcrystalline, mudstone, abundant white, calcite fracture in fill.
- 6040-70** **LIMESTONE 100%** Light to medium gray brown, argillaceous, lithographic, dense, microcrystalline, mudstone.
- 6070-6100** **LIMESTONE 100%** Light gray brown, medium to dark gray brown, oolitic, packstone to grainstone, tight, mottled.
- 6100-30** **LIMESTONE 100%** Medium to dark gray, argillaceous, lithographic, crystalline, dense,

mudstone.

- 6130-60** Limestone 100% Medium to dark gray, As Above, abundant white calcite fracture in fill.
- 6169-90** Limestone 100% Medium to dark gray, As Above, light grey, soft, chalky (20%).
- 6190-6220** Limestone 100% Medium to dark gray brown, microcrystalline, dense, mudstone.
- 6220-50** Limestone 100% Light brown, tan, oolitic, packstone to grainstone, abundant As Above.
- 6250-80** Limestone 100% Light to medium gray brown, mottled, microcrystalline, red, dense, mudstone, about white calcite fracture in fill.
- 6280-6310** Limestone 100% Light medium grey brown, microcrystalline, dense, hard, mudstone, abundant white calcite fracture in fill, tan to white, oolitic, grainstone, tight, no show.
- 6310-40** Limestone 100% Light to medium gray, microcrystalline, hard, tight, dense, mudstone, yellow fluorescence, no to weak show, light brown, tan, microcrystalline, hard, dense, mudstone, tight, no show.

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- 6340-70** Sandstone 100% White, clear, quartzose, light brown, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, silica cement, friable, 98% unconsolidated, rainbows on wash fluid, strong hydrocarbon odor, brown oil stain, yellow-gold oil fluorescence, yellow to gold residual ring cut fluorescence, 10-12% intergranular porosity, about white quartz flour, anhydritic.
- 6370-6400** Sandstone 100% As Above, fine to course grained, 95% unconsolidated, show As Above.
- 6400-30** Sandstone 100% As Above, very fine to medium grained, 80% unconsolidated, show As Above.
- 6430-60** Sandstone 100% As Above, fine to medium grained, 98% unconsolidated, show As Above.
- 6460-90** Sandstone 100% As Above, very fine to medium grained, 98% unconsolidated, lighter stain, 8-10% intrgranular porosity, show As Above.
- 6490-6520** Shale 40% Red brown, dark red, silty, slightly calcareous, firm.

SILTSTONE 30% Red orange, white, green, argillaceous, anhydritic.
SANDSTONE 20% White, light brown, very fine grained, sub angular, fair to well sorted, clay matrix, calcareous cement, tight, no show.
ANHYDRITE 10% White, soft, chalky.

- 6520-50** **SHALE 40% Red brown, silty, blocky, firm, slightly calcareous.**
SILTSTONE 30% Red brown, green, argillaceous, anhydrite, tight, no show.
SANDSTONE 30% White, clear, quartzose, very fine to medium grained, sub angular to rounded, fair to poor sorted, 100% unconsolidated, brown oil stain, strong hydrocarbon odor, rainbows on the wash fluid, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intrgranular porosity.
- 6550-80** **SANDSTONE 100% White, clear, quartzose, very fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, silica cement, 98% unconsolidated, show As Above.**
- 6580-6610** **SANDSTONE 100% As Above fine to medium grained, show As Above, 98% unconsolidated.**
- 6610-40** **SANDSTONE 100% As Above, fine to medium grained, 99% unconsolidated, show As Above.**
- 6640-70** **SANDSTONE 100% As Above, very fine to medium grained, 98% unconsolidated, show As Above.**
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- 6670-6700** **SANDSTONE 100% As Above, very fine to medium grained, 98% unconsolidated, show As Above.**
- 6700-30** **SANDSTONE 100% As Above, fine to medium grained, 98% unconsolidated, show As Above.**
- 6730-60** **SANDSTONE 100% As Above, very fine to medium grained, 90% unconsolidated, show As Above, abundant brown oil stain in matrix.**
- 6760-90** **SANDSTONE 100% As Above, very fine to medium grained , 65% unconsolidated, show As Above.**
- 6790-6820** **SANDSTONE 100% As Above, very fine to medium grained, 50% unconsolidated, show As Above.**
- 6820-50** **SANDSTONE 100% As Above, very fine to medium grained, 35% unconsolidated, lighter fluorescence, weaker show, mixed zone.**
- 6850-80** **SANDSTONE 100% As Above, very fine to medium grained, 30% unconsolidated, weak to no show.**

- 6880-6910 SANDSTONE 100% As Above, very fine to medium grained, 10% unconsolidated, weak to no show.**
- 6910-40 SANDSTONE 100% As Above, very fine to medium grained, 35% unconsolidated, weak to no show.**
- 6940-70 SANDSTONE 100% As Above , very fine to medium grained, 40% unconsolidated, weak to no show.**
- 6870-7000 SANDSTONE 100% As Above, fine to medium grained, 80% unconsolidated, show As Above, abundant white quartzose flour.**

EXACT Engineering, Inc.

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E.
Registered Professional Engineer
stevehash@exactengineering.com

CONFIDENTIAL PLEASE!

CONFIDENTIAL

September 19, 2005

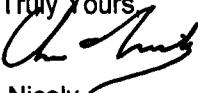
Mr. Dustin Doucet
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

Re: Wolverine Federal 17-5 well
Sec 17 T23S R01W
Sevier Co, UT
API# 43-041-30038
BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our final daily completion activity reports for the subject well for September 1 through September 12, 2005. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truly Yours,



Chris Nicely
Engineering Technician

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph
EXACT Engineering, Inc. well file

Petroleum Engineering Consulting, Personnel & Jobsite Supervision
complete well design, construction & management, drilling, completion, production, pipelines, appraisals,
due diligence, acquisitions, procedures, temporary personnel and field supervision

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UTAH OIL, GAS & MINING

Daily Completion Report

**Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-5 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah**

page 6 of 6

New Completion

**7" 23# HCP110 @ 6999' TD
PBSD 6955' on 4/13/05; CBL TD 6914' on 7/21/05
Perfs - 6748-6752 on 7/26/05
Perfs - 6636-6653; 6675-6684; 6695-6704; 6714-6723
on 8/1/05
ESP intake set @ 5320' md (~5000' tvd) on 9/8/05
GL to RKB: 17'**

"TIGHT HOLE"

- 9/11/05 Pmpd 561 bbls fluid to test tank in 24 hrs on 18/64" chk @ 250-275 psi PTP from 2pm 9/9 to 2pm 9/10; running 51 hz. Samples turned to 85% oil and 15% water at beginning of period. Estimate production at 477 BO & 84 BW; found adj chk out of calibration, re-zeroed adj chk to 12/64"
- 9/12/05 Pmpd 552 bbls fluid to test tank in 24 hrs on 12/64" chk @ 240-350 psi PTP from 2pm 9/10 to 2pm 9/11; 51 hz, hi-hi alarm set @ 1500 psi; hi alarm set @ 700 psi; wellhead Kimray motor valve set for 250 psi max flowline pressure; 12/64" adj choke plugging intermittently; samples ~15% water; water ph 7.0; water SG 1.014; oil gravity 43.2 @ 71 or 42.0 API corrected. Estimate production at 469 BO & 83 BW. Target rate is 450-500 BPD; reduced chk to 11/64" @ 2pm; total estimated production thru 9/11/05 @ 2pm is 1459 BO. Total sales thru 9/1/05 2pm is 324 BO. Collected oil (#822472 & #822645) and water sample for analysis. **TURNED WELL OVER TO PRODUCTION - FINAL COMPLETION REPORT - Thank you!**

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EXACT Engineering, Inc. 415 S. Boston, Suite 734, Tulsa, OK 74103 (918) 599-9400
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due diligence, acquisitions, procedures, temporary personnel and field supervision

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DIV. OF OIL, GAS & MINING

Daily Completion Report
Wolverine Gas & Oil Company of Utah, LLC
Wolverine Federal #17-5 well
SE NW Sec 17 T23S - R01W
Sevier Co., Utah

New Completion
7" 23# HCP110 @ 6999' TD
PBTD 6955' on 4/13/05; CBL TD 6914' on 7/21/05
Perfs - 6748-6752 on 7/26/05
Perfs - 6636-6653; 6675-6684; 6695-6704; 6714-6723
on 8/1/05
ESP intake set @ 5320' md (~5000' tvd) on 9/8/05
GL to RKB: 17'

"TIGHT HOLE"

- 9/01/05 SITP 60 psi
- 9/02/05 SITP 60 psi; total estimated production thru 9/1/05 2pm is 360 BO; total sales 272 BO; Oil sales report turned over to production
- 9/03/05 SITP 50 psi
- 9/04/05 SITP 50 psi
- 9/05/05 SITP 50 psi
- 9/06/05 SITP 50 psi
- 9/7/05 SITP 50 psi
- 9/8/05 SITP 50 psi, bled off, pump 40 bbls KCl down tbg to kill well, ND wellhead, NU BOP, reverse tbg volume, release pkr and POOH w 214 jts, LD tools. Pick up retr tool and TIH, latch RBP on jt 220, released RBP, POOH, laid down 48 jts and tools, NU annular preventer, prep to run ESP next am.
 Est Daily Completion Cost \$ [REDACTED]
 Est Cumulative Comp Cost [REDACTED]
- 9/9/05 SICP 0, RU Baker Centrilift to run ESP, pick up motor, seal & pump w/ 2.25 SN & TIH banding #2 cable 3 bands per jt, splice feed thru and land btm of tbg @ 5349' md. ND BOPE & NU wellhead. Complete tbg setting report to follow. Hook up flowlines, air supply & shutdowns. Troubleshoot pump start-up problems. Pump in operation and on test @ 9:30pm; monitor pump conditions and rates overnight, 255 BLWTR. This am 12 hr Initial Production Test from 9:30pm 9/8 to 9:30am 9/9 - Pumped 118 BO & 276 BLW in 12 hrs on 32/64" chk @ 25 psi pumping tbg pressure. Sample this am 20% oil & 80% load water, reduce to 18/64" chk, PTP 250 psi, pumping ARO 490 BPD.
- 9/10/05 Pmpd 71 bbls fluid to test tank in 3-1/2 hrs on 18/64" chk @ 250 psi PTP from 9:30am to 2pm; down 1 hr on vari-drive unit. Running 51 hz pump speed (lowest). Samples 50% oil 50% load water; est production at 35 BO & 35 BW

Production Tubing Setting - run in hole on 9/8/05

	Description	SN	Length	Top @ kb
1	3.75"od, 43hp, 605v,48a,DME motor	21D-0048951	20.68	5325 md
1	4.0"od, FSB3 DM SB SFS seal	31F-0071888	5.58	5320 md
1	4.0"od, type P8, model 400P, 147 stg pump w intake	01F-0007388	13.50	5306 md
1	2-3/8" x 2-7/8" EUE 8rd xover		.75	
1	2-7/8" EUE 8rd SN (2.25" min id)		1.10	5304 md
1	2-7/8" 6.5# N80 EUE 8rd handling sub		4.06	
172	2-7/8" 6.5# N-80 EUE 8rd tbg joints		5283.40	
	Overall		5329.07	
	Set below KB (GL to KB = 17')		+17.0	
	EOT set @ KB		5346.07	
	EOT 5346'kb md; intake @ 5320'kb md (5000' tvd)			
	Note: there is NO check or drain valve in this well			

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 due diligence, acquisitions, procedures, temporary personnel and field supervision

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 DIV. OF OIL, GAS & MINING

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

ENTITY ACTION FORM

Operator: Wolverine Gas and Oil Company of Utah, LLC
 Address: 55 Campau NW, One Riverfront Plaza
city Grand Rapids
state MI zip 49503

Operator Account Number: N 1655
 Phone Number: (616) 458-1150

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130035	Wolverine Federal 17-4		NWSE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
C	14559	13995	1/31/2005		10/31/05		
Comments: Existing Participating Area expanded to include lands effective as of 9/1/2005 production. NAVA J							

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Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130038	Wolverine Federal 17-5		SENE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
C	14626	13995	3/14/2005		10/31/05		
Comments: Existing Participating Area expanded to include lands effective as of 8/1/2005 production. NAVA J							

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Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304130037	Wolverine Federal 17-6 (WF 8-1)		NWNE	17	23S	1W	Sevier
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
C	14667	13995	4/16/2005		10/31/05		
Comments: Existing Participating Area expanded to include lands effective as of 8/1/2005 production. NAVA J							

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ACTION CODES:

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

Edward A. Higuera

Name (Please Print)

Signature

Manager Development

Title

10/31/2005

Date

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OCT 31 2005

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

COPY

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well Oil Well Gas Well Other

2. Name of Operator **Wolverine Gas and Oil Company of Utah, LLC**

3a. Address **55 Campau NW, Grand Rapids, MI 49503**

3b. Phone No. (include area code) **616-458-1150**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Surface: 1680' FNL & 2281' FWL, Sec. 17, T23S, R01W, SLB&M
Bottom-Hole: 1402' FNL & 1156' FEL, Sec. 17, T23S, R01W, SLB&M

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Federal Exploration Unit

8. Well Name and No.
Wolverine Federal 17-5

9. API Well No.
43-041-30038

10. Field and Pool, or Exploratory Area
Covenant Field

11. County or Parish, State
Sevier County, Utah

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input checked="" type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input checked="" type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

A recompletion workover is planned for the Wolverine Federal 17-5. It is planned to squeeze cement to isolate between existing perforation intervals, reperforate intervals that are currently producing, and perforate five additional Lower Navajo intervals at 6531' - 6551', 6566' - 6576', 6588' - 6600', 6614' - 6626', and 6653' - 6657'. It is also planned to acid stimulate each perforated interval. This well will continue to produce only from the Lower Navajo following the recompletion. The proposed recompletion activities are expected to commence as early as October 22, 2007.

See the attached procedure for details of planned activities.

Attachment: Wolverine Federal 17-5 Recompletion Procedure

10-2-07
DM

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

Name (Printed/Typed) **Ellis M. Peterson** Title **Sr. Production Engineer**

Signature *Ellis M. Peterson* Date **09/05/2007**

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____ Title **Accepted by the Utah Division of Oil, Gas and Mining** Date _____ Federal Approval Of This Action Is Necessary

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

By: *[Signature]*

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SEP 06 2007

**Wolverine Gas & Oil Company of Utah, LLC
Recompletion Procedure**

Wolverine Federal 17-5

Covenant Field

Purpose: Cement to isolate existing perforations and recomplete Lower Navajo

Note: This procedure is based on conditions existing prior to and situations and results anticipated during the well work activities. Actions and methods will deviate from this procedure as warranted by actual circumstances.

PERTINENT INFORMATION

Location: 1680' FSL, 2281' FWL (SENW)
Section 17, Township 23 South, Range 1 West
Sevier County, Utah

Elevation: 5736' GL, 5753' KB

TD: 7000'

PBTD: 6923' (cement top)

API No.: 43-041-30038

Casing: 13-3/8", 68.0# @ 2019', cemented to surface
9-5/8", 47.0#, HCP-110, LT&C @ 5954', cemented with 350 sks 50:50 Poz
7", 23.0#, HCP-110, LT&C @ 6999', cemented with 290 sks 50:50 Poz

Wellhead: Tubing Head Flange – 7-1/16" 5k w/ 2-7/8" EUE top connection

Tubing: 6492' of 2-7/8", 6.5#, N-80 & L-80, EUE, 8rd w/ SN, x-over, and ESP equipment

Production Casing Specs: 7", 23.0#, HCP-110, LT&C, 8rd, ID: 6.366" Drift: 6.241"
Collapse: 5650 psi Burst: 8720 psi (80% 6976 psi)

Tubing Specs: 2-7/8", 6.5#, N-80/L-80, EUE, 8rd, ID: 2.441" Drift: 2.347"
Collapse: 11,170 psi Burst: 10,570 psi (80% 8456 psi)
Joint: 145,000 lbs (80% 116,000 lbs)

Capacities: 7", 23.0#: 0.03936 Bbls/ft 0.2210 ft³/ft
2-7/8", 6.5# 0.00579 Bbls/ft 0.0325 ft³/ft
7" x 2-7/8" Annulus 0.0313 Bbls/ft 0.1759 ft³/ft

BH Temperature: 182 °F @ 6622' MD (6300' TVD)

Current Lower Navajo Formation Completion Interval: 6636' – 6752' (7/26-8/2/05)

Current Perforations:

6636' - 6653' MD (6314' – 6330' TVD), 17', 68 holes
6675' - 6684' MD (6352' – 6361' TVD), 9', 36 holes
6695' - 6704' MD (6371' – 6380' TVD), 9', 36 holes
6714' - 6723' MD (6390' – 6399' TVD), 9', 36 holes
6748' - 6752' MD (6423' – 6427' TVD), 4', 16 holes

Perforation Depths are referenced to Halliburton SDL-DSN-GR dated 04/11/05.
CBL-GR-CCL dated 07/21/05 is on depth to open-hole logs at perforation depth.

Proposed Lower Navajo Formation Completion Interval: 6531' – 6752'

Proposed New Perforations:

6531' - 6551' MD (6211' – 6231' TVD), 20', 120 holes
6566' - 6576' MD (6245' – 6255' TVD), 10', 60 holes
6588' - 6600' MD (6267' – 6279' TVD), 12', 72 holes
6614' - 6626' MD (6292' – 6304' TVD), 12', 72 holes
6636' - 6657' MD (6314' – 6334' TVD), 21', 126 holes
6675' - 6684' MD (6352' – 6361' TVD), 9', 54 holes
6695' - 6704' MD (6371' – 6380' TVD), 9', 54 holes
6714' - 6723' MD (6390' – 6399' TVD), 9', 54 holes

PROCEDURE

1. Prepare location for workover.
2. Shut in well and disconnect power.
3. MIRUSU. Reverse circulate completion fluid to recover oil and kill well. Disconnect flow lines, ND wellhead, and NU BOP.
4. RU cable spoolers. POOH and lay down ESP equipment. RD cable spoolers.
5. Round trip a 6-1/8" bit and casing scraper to PBTD.
6. RU wireline service. Run a third party Gyro/CCL survey (directional survey) from PBTD to surface.
7. RIH with a packer and RBP. Set RBP it at 6800' and packer at 6740' WLM. Use wireline unit to run CCL/GR correlation log and check packer setting depth and determine WLM to SLM correction.
8. Swab the isolated perforations for rate and water-cut determination. Fill tubing and pressure to 2000 psi to test for behind pipe communication (not expected).
9. Repeat communication tests with packer settings of 6708', 6687', and 6666'.
10. Isolate and test individual or grouped intervals as directed based on communication test results. POOH with tubing and tools.

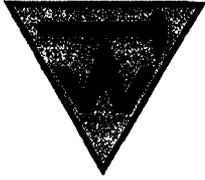
Note: If there is communication between top two perforation intervals, proceed to cement squeeze as follows, otherwise skip cementing related steps.

11. Run and set a 7" (23#) CICR at 6664' on tubing.
12. RU cementing company and squeeze perforations and behind casing with 25 sks of low fluid loss, premium cement.
13. POOH with tubing and stinger.
14. RIH with a 6-1/8" and ten 4-3/4" drill collars on 2-7/8" tubing. RU power swivel and drill out with reverse circulation. Drill out cement and both CICR, circulate clean, and POOH laying down the drill collars.

15. RIH with a 6-1/8" bit and casing scraper. Tag PBTD and spot 10 Bbls of 10 ppg salt brine containing recommended biocide and corrosion inhibitor to fill casing below perforations. POOH with bit and casing scraper.
16. RU Halliburton wireline unit to run segmented radial cement bond log (SRCBL) under pressure. Run SRCBL/CCL/GR from 6850' to 5800' (on depth to OH logs) with 0, 1000, and 2000 psi casing pressure.
17. Reperforate Lower Navajo intervals at 6714'- 6723', 6695' - 6704', and 6675' - 6684' with 6 SPF and 5' of Stingun sleeve per interval. RD and release wireline unit.
18. RIH with a RBP, retrieving head, packer, and seating nipple on 2-7/8" tubing. Set RBP at 6740' and packer at 6664'. RU and swab for rate and clean-up.
19. RU Halliburton and acid stimulate the isolated zone using 500 gallons of 15% FE acid for tube clean, 1800 gallons of Clay-Safe H (5% HCl acid), 2700 gallons of Sandstone Completion Acid (13.5/1.5% HCl/HF), and 630 gallons of Clayfix 5 (5% Ammonium Chloride).
20. Open well and flow/swab back for cleanup.
21. Release packer and reset RBP at 6670'. POOH with packer and tubing.
22. RU Halliburton wireline unit and perforate 6636' - 6657' WLM with 6 SPF and 10' of Stingun sleeve.
23. RIH with a RBP retrieving head, 2 joints of tubing, packer, and seating nipple on 2-7/8" tubing. Set packer above 6570'. RU and swab the isolated zone for rate and clean-up.
24. RU Halliburton and acid stimulate the isolated zone using 1400 gallons of Clay-Safe H (5% HCl acid), 2100 gallons of Sandstone Completion Acid (13.5/1.5% HCl/HF), and 630 gallons of Clayfix 5 (5% Ammonium Chloride).
25. Open well and flow/swab back for cleanup.
26. Reset tools and check for behind-pipe communication between current top two zones, then reset RBP at 6632' WLM. POOH with packer and tubing.
27. RU Halliburton wireline unit and perforate 6614' - 6626' WLM with 6 SPF and 6' of Stingun sleeve. RD and release wireline unit.
28. RIH with a RBP retrieving head, 2 joints of tubing, packer, and seating nipple on 2-7/8" tubing. Set packer above 6550'. RU and swab the isolated zone for rate and clean-up.
29. RU Halliburton and acid stimulate the isolated zone using 800 gallons of Clay-Safe H (5% HCl acid), 1200 gallons of Sandstone Completion Acid (13.5/1.5% HCl/HF), and 630 gallons of Clayfix 5 (5% Ammonium Chloride).
30. Open well and flow/swab back for cleanup.
31. Reset tools and check for behind-pipe communication between current top two zones, then reset RBP at 6610' WLM. POOH with packer and tubing.
32. RU Halliburton wireline unit and perforate 6588' - 6600' WLM with 6 SPF and 6' of Stingun sleeve. RD and release wireline unit.
33. RIH with a RBP retrieving head, 2 joints of tubing, 7" (23#) packer, and seating nipple on 2-7/8" tubing. Set packer above 6525'. RU and swab the isolated zone for rate and clean-up.

34. RU Halliburton and acid stimulate the isolated zone using 800 gallons of Clay-Safe H (5% HCl acid), 1200 gallons of Sandstone Completion Acid (13.5/1.5% HCl/HF), and 630 gallons of Clayfix 5 (5% Ammonium Chloride).
35. Open well and flow/swab back for cleanup.
36. Reset tools and check for behind-pipe communication between current top two zones, then reset RBP at 6582' WLM. POOH with packer and tubing.
37. RU Halliburton wireline unit and perforate 6566' - 6576' WLM with 6 SPF and 5' of Stingun sleeve. RD and release wireline unit.
38. RIH with a RBP retrieving head, 2 joints of tubing, 7" (23#) packer, and seating nipple on 2-7/8" tubing. Set packer above 6500'. RU and swab the isolated zone for rate and clean-up.
39. RU Halliburton and acid stimulate the isolated zone using 665 gallons of Clay-Safe H (5% HCl acid), 1000 gallons of Sandstone Completion Acid (13.5/1.5% HCl/HF), and 630 gallons of Clayfix 5 (5% Ammonium Chloride).
40. Open well and flow/swab back for cleanup.
41. Reset tools and check for behind-pipe communication between current top two zones, then reset RBP at 6562' WLM. POOH with packer and tubing.
42. RU Halliburton wireline unit and perforate 6531' - 6551' WLM with 6 SPF and 10' of Stingun sleeve. RD and release wireline unit.
43. RIH with a RBP retrieving head, 2 joints of tubing, 7" (23#) packer, and seating nipple on 2-7/8" tubing. Set packer above 6470'. RU and swab the isolated zone for rate and clean-up.
44. RU Halliburton and acid stimulate the isolated zone using 1330 gallons of Clay-Safe H (5% HCl acid), 2000 gallons of Sandstone Completion Acid (13.5/1.5% HCl/HF), and 630 gallons of Clayfix 5 (5% Ammonium Chloride).
45. Open well and flow/swab back for cleanup.
46. Reset tools and check for behind-pipe communication between top two zones, then release packer and RBP and POOH with tubing and tools.
47. If well is capable of flowing, RIH with a tubing collar (or wireline re-entry guide), 7" (23#) packer, and SN on 2-7/8" tubing, and set packer at ~6450' WLM. Land tubing, ND BOP and NU wellhead. RU, swab well in, and turn to production.

If well is to be pumped, details for installing a Y-tool and pumping equipment will be provided.
48. RDMOSU.



**WOLVERINE GAS AND OIL COMPANY
OF UTAH, LLC**

Energy Exploration in Partnership with the Environment

March 26, 2008

Mr. Gil Hunt
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: Reporting Forms - Wolverine Gas and Oil Company of Utah, LLC
Wolverine Federal 17-8 (UDOGM Sundry Notice)
Wolverine State Twist Canyon 16-1 (UDOGM Sundry Notice)
Wolverine Federal 17-5 (BLM Sundry Notice)

Dear Mr. Hunt:

Wolverine Gas and Oil Company of Utah, LLC respectfully submits the enclosed Sundry Notices (Form 9) in duplicate for the Wolverine Federal 17-8 and Wolverine State Twist Canyon ~~16-1~~ ⁹¹². A copy of a BLM Sundry Notice for a recompletion workover performed on the Wolverine Federal 17-5 is also enclosed.

Please accept this letter as Wolverine's written request for confidential treatment of all information pertaining to these wells.

Sincerely,

Ellis M. Peterson
Senior Production Engineer
Wolverine Gas and Oil

RECEIVED
APR 01 2008
DIV. OF OIL, GAS & MINING

UDOGM

Form 3160-5
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
Wolverine Gas and Oil Company of Utah, LLC

3a. Address
55 Campau NW, Grand Rapids, MI 49503

3b. Phone No. (include area code)
616-458-1150

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Surface: 1680' FNL & 2281' FWL, Sec. 17, T23S, R01W, SLB&M
Bottom-Hole: 1376' FNL & 1150' FEL, Sec. 17, T23S, R01W, SLB&M

5. Lease Serial No.
UTU-73528

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
Wolverine Federal Exploration Unit

8. Well Name and No.
Wolverine Federal 17-5

9. API Well No.
43-041-30038

10. Field and Pool, or Exploratory Area
Covenant Field

11. County or Parish, State
Sevier County, Utah

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input checked="" type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input checked="" type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

A recompletion workover was performed on the Wolverine Federal 17-5. Cast iron bridge plugs were set at 6740' and 6712' and 1/2 sack of cement was dumped on each plug. Navajo intervals at 6531' - 6551', 6566' - 6576', 6588' - 6600', 6614' - 6626', 6636' - 6657', 6675' - 6684', and 6695' - 6704' were perforated with 6 SPF. Perforation intervals at 6636' - 6704', 6566' - 6576', and 6531' - 6551' were acid stimulated. The well was then returned to production with ESP artificial lift.

See the attached summary for details of the completed work.

Attachment: Workover Summary and Results

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Ellis M. Peterson

Title Sr. Production Engineer

Signature

Date

03/26/2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by _____

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

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DIV. OF OIL, GAS & MINING

Workover Summary and Results

Wolverine Federal 17-5

Covenant Field

January 24, 2008 to March 2, 2008

Purpose of Workover: Recomplete Lower Navajo

Work Summary:

1. Isolated and swabbed perforations at 6748' - 6752' with a final rate of 17.5 BPH, final fluid level (FFL) of 2000', and 90% water-cut (WC).
2. Checked for communication behind casing by setting packer between perforated intervals and pumping down tubing. Had communication at packer settings of 6667' and 6787' and no communication at 6708' and 6740'.
3. Ran a Scientific Drilling gyro directional survey from 6740' to surface.
4. Isolated and swabbed perforations at 6714' - 6723' with a final rate of 16 BPH, FFL of 2600', and 98% WC.
5. Isolated and swabbed perforations at 6636' - 6704' with a final rate of 25 BPH, FFL of 3600', and 20% WC.
6. Reperforated intervals at 6695' - 6704', 6675' - 6684', and 6636' - 6657' with 6 SPF.
7. Wireline set a CIBP at 6740' and dump bailed 0.5 ft³ of cement on top.
8. Wireline set a CIBP at 6712' and dump bailed 0.5 ft³ of cement on top.
9. A 2-7/8" standing valve with a 3/4" x 2' long catch rod attached pumped through the seating nipple while pressure testing tubing and is now on top of cement and CIBP at PBTD.
10. Halliburton acidized perforations at 6636' - 6704' with 974 gallons 7.5% FE acid (7-1/2% HCl), 1512 gallons Clay Safe H (5% HCl), and 3939 gallons Sandstone Completion Acid (13.5% HCl/1.5% HF) split into three stages using 1.0 lb/perf of Benzoic Acid to divert. Treated at 2.0 BPM and 1900 psi.
11. Swabbed perforations at 6636' - 6704' with a final rate of 30 BPH, FFL of 2700', and 30% WC.
12. Wireline set a composite bridge plug (CBP) at 6632' and perforated 6614' - 6626' with 6 SPF.
13. Swabbed perforations at 6614' - 6626' with a final rate of 26 BPH, FFL of 2700', and 20% WC.
14. Wireline set a composite bridge plug (CBP) at 6610' and perforated 6588' - 6600' with 6 SPF.
15. Swabbed perforations at 6588' - 6600' with a final rate of 34 BPH, FFL of 2600', and 30% WC.
16. Wireline set a composite bridge plug (CBP) at 6584' and perforated 6566' - 6576' with 6 SPF.
17. Halliburton acidized perforations at 6566' - 6576' with 496 gallons 7.5% FE acid (7-1/2% HCl), 610 gallons Clay Safe H (5% HCl), and 991 gallons Sandstone Completion Acid (13.5% HCl/1.5% HF) in one stage. Treated at 2.1 BPM and 2037 psi.

18. Swabbed perforations at 6566' - 6576' with a final rate of 37 BPH, FFL of 2000', and 50% WC.
19. Wireline set a composite bridge plug (CBP) at 6562' and perforated 6531' - 6551' with 6 SPF.
20. Halliburton acidized perforations at 6531' - 6551' with 1000 gallons 7.5% FE acid (7-1/2% HCl), 1254 gallons Clay Safe H (5% HCl), and 1824 gallons Sandstone Completion Acid (13.5% HCl/1.5% HF) in one stage. Treated at 0.7 BPM and 759 psi.
21. Swabbed perforations at 6531' - 6551' with a final rate of 49 BPH, FFL of 1800', and 30% WC.
22. Drilled out CBP's at 6562', 6584', 6610', and 6632' using a mud motor and power swivel.
23. Checked for communication behind casing by setting packer between perforated intervals and pumping down tubing. Had communication at packer settings of 6630', 6610', and 6580' and no communication at 6554'.
24. Swabbed perforations at 6531' - 6704' with a final rate of 41 BPH, FFL of 2000', and 85% WC after 6.5 hours and total recovery of 17 BO and 214 BW. The water had 3.5 pH.
25. Ran Weatherford Y-Tool and ESP. Placed well on production.

Active Perforations: (Lower Navajo)

6531' - 6551' MD (6216' - 6235' TVD), 20', 120 holes
 6566' - 6576' MD (6250' - 6260' TVD), 10', 60 holes
 6588' - 6600' MD (6271' - 6283' TVD), 12', 72 holes
 6614' - 6626' MD (6297' - 6309' TVD), 12', 72 holes
 6636' - 6657' MD (6318' - 6339' TVD), 21', 126 holes
 6675' - 6684' MD (6357' - 6365' TVD), 9', 54 holes
 6695' - 6704' MD (6376' - 6385' TVD), 9', 54 holes

Production before Workover: 230 BOPD and 247 BWPD with 1150 psi FBHP

Production after Workover: 299 BOPD and 548 BWPD with 1600 psi FBHP

Gyro Results: MD to TVD correction is -319' at perforation depths (compared to -324' with drilling directional surveys)