Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED
OMB No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE – Other instructions on reverse side

5. Lease Serial No.
NM-10266

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
Terry FU Com #6H

2. Name of Operator
Yates Petroleum Corporation

9. API Well No.

3a. Address
105 South Fourth Street, Artesia, NM 88210

3b. Phone No. *(include area code)*
(505) 748-1471

10. Field and Pool, or Exploratory Area
Wildcat Wolfcamp

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
760' FNL & 660' FEL, Unit A (Pilot Hole)
760' FNL & 660 FWL, Unit D (Bottom Hole)
Section 21, T 16 S, R 25 E

11. County or Parish, State
Eddy County, New Mexico

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☒ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change Name
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operations (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.)

Yates Petroleum Corporation wishes to change the name from Rib BIB Federal Com #1H to the **Terry FU Com #6H**

Thank you.

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

Name *(Printed/Typed)* Cy Cowan

email debbiec@ypcnm.com

Title: Regulatory Agent/Land Department

Signature

Date
March 7, 2007

THIS SPACE FOR FEDERAL OR STATE USE

Approved by
/s/ James Stovall ACTING

Title
FIELD MANAGER

Date
MAY 11 2007

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
CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001, 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 reverse)

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

Month - Year
OCD - ARTESIA, NM

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
	75250	Cottonwood Creek Wolfcamp

Property Code	Property Name	Well Number
96086	TERRY FU COM	6H

OGRID No.	Operator Name	Elevation
025575	YATES PETROLEUM CORPORATION	3511

Surface Location

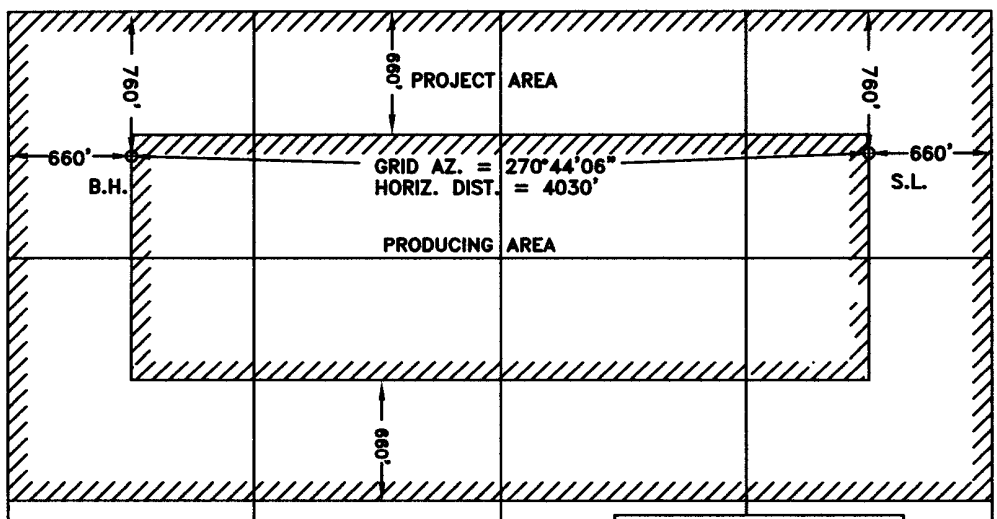
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	21	16S	25E		760	NORTH	660	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	21	16S	25E		760	NORTH	660	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



BOTTOM HOLE LOCATION
Y=696156.5 N
X=449766.9 E
LAT.=32.913705 N
LONG.=104.497022 W

GEODETIC COORDINATES
NAD 27 NME
SURFACE HOLE LOCATION
Y=696137.9 N
X=453796.9 E
LAT.=32.91367
LONG.=104.48389
(NAD-27)

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date 5/10/07

Cy Cowan
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

1/25/2007
Date Surveyed

Signature & Seal of Professional Surveyor

HERSCHEL L. JONES
NEW MEXICO
3640
REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate No. Herschel L. Jones 3640
GENERAL SURVEYING

YATES PETROLEUM CORPORATION
Rib BIB Federal Com. #1H
760' FNL & 660' FEL (Pilot Hole)
760' FNL & 660' FWL (Bottom Hole)
Section 21-T16S-R25E
Eddy County, New Mexico

1. The estimated tops of geologic markers are as follows:

San Andres	610'	Wolfcamp	4855'
Glorietta	1900'	Base Wolfcamp Pay	4888'
Tubb	3175'	Wolfcamp Shale	4950'
Abo	3870'	TD (Pilot Hole)	5200'
		TD (Lateral Hole)	8662'

2. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:
   Water: 100'
   Oil or Gas: All potential formations.

3. Pressure Control Equipment: BOPE will be installed on the 9 5/8" casing and the rated for 3000# BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings, which are set and cemented in place. Blowout Preventor controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventors will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. See Exhibit B.

   Auxiliary Equipment:

   A. Auxiliary Equipment: Kelly cock, pit level indicators, flow sensor equipment and a sub with full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when kelly is not in use.

4. THE PROPOSED CASING AND CEMENTING PROGRAM:

   A. Casing Program: (All New)

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
17.5"	13.325"	48#	H-40	ST&C	0- 350'	350'
12.25"	9.625"	36#	J-55	ST&C	0-1100'	1100'
8.75"	5220' TVD	(Pilot Hole)				
7.875"	5.5"	17#	HCP-110	LT&C	0-8662'MD	8662'

1. Minimum Casing Design Factors: Collapse 1.125, Burst 1.0, and Tensile Strength 1.8
2. A 3,000 psi BOP will be nipped up on the 9 5/8" casing and tested to 3000 psi .

   B. CEMENTING PROGRAM:
   Surface Casing: Cement with 400 sx class "C" with 2% CaCl2 (YLD 1.35 WT 14.8). TOC-Surface.

Intermediate Casing: 225 SX C lite with CaCl2% (YLD 2.1 WT 12.5) and tail in with 200 sx class C with CaCl2% (YLD 1.324WT 14.8). TOC-Surface.

Production Casing: Lead with 650 SX lite C (YLD 2.05 WT 12.5). Tail in w/1375 Magne Plus (YLD 1.05 WT 13.0) TOC 600'.

5. MUD PROGRAM AND AUXILIARY EQUIPMENT:

Interval	Type	Weight	Viscosity	Fluid Loss
0-350'	Fresh Water	8.4-8.9	32-36	N/C
350'-1100'	FW Gel/Air Mist	8.4-8.9	28-34	N/C
1100'-8662'	Cut Brine	8.8-9.2	28-28	N/C

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Rig personnel will check mud hourly.

6. EVALUATION PROGRAM:

Samples: 10' samples out from under intermediate casing to TD.
Logging: Platform Express/HALS, FMI
Coring: Rotary Sidewall Cores (Pilot Hole)
DST's: None Anticipated

7. ABNORMAL CONDITIONS, BOTTOM HOLE PRESSURE AND POTENTIAL HAZARDS:

Anticipated BHP:

From:	0	TO:	350' TVD	Anticipated Max. BHP:	162 PSI
From:	350'	TO:	1100' TVD	Anticipated Max. BHP:	510 PSI
From:	1100	TO:	5200' TVD	Anticipated Max. BHP:	2590 PSI

Abnormal Pressures Anticipated: None

Lost Circulation Zones Anticipated: None.

H2S Zones Anticipated: None Anticipated

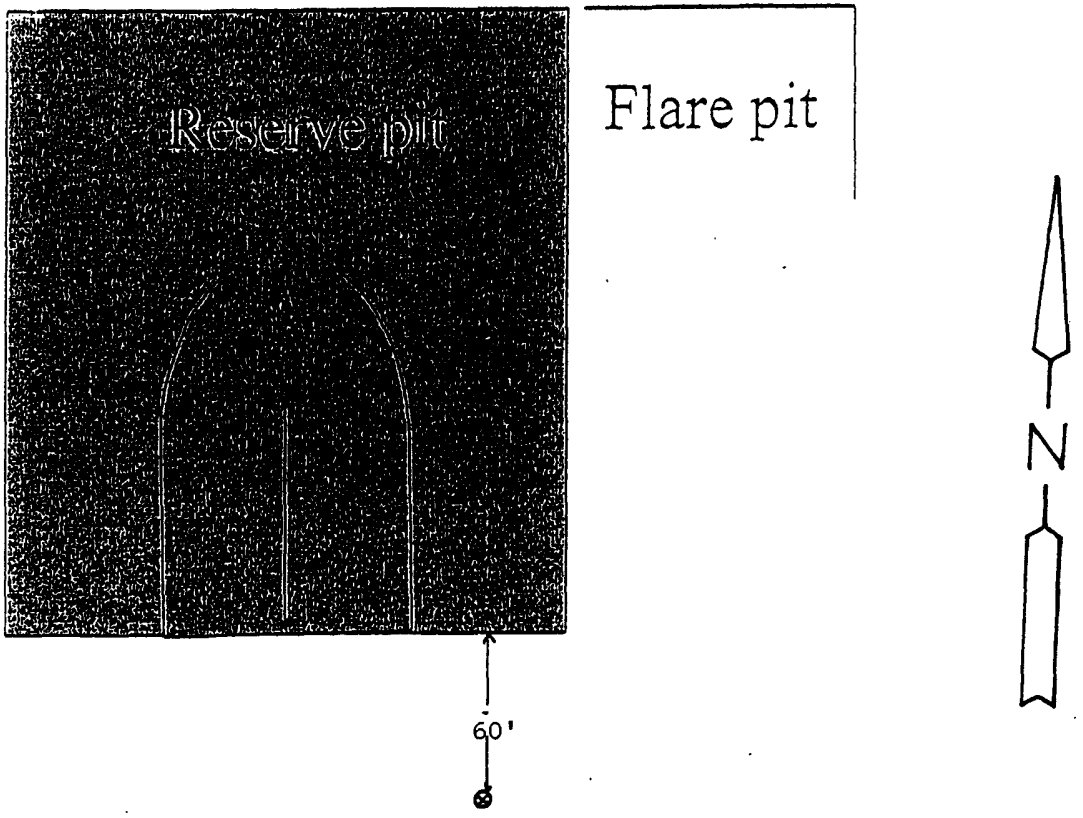
Maximum Bottom Hole Temperature: 168 F

8. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 45 days to drill the well with completion taking another 40 days.

YATES PETROLEUM CORPORATION
General Plan was approved 4/15/04

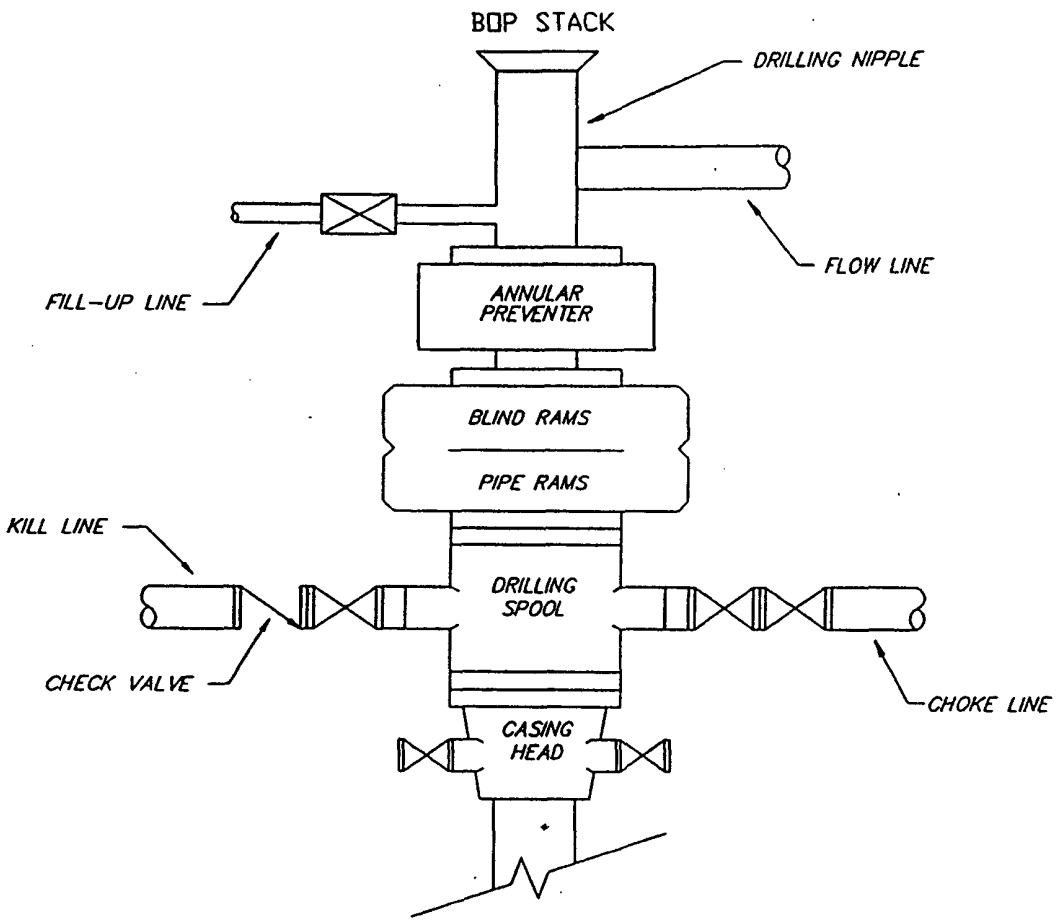
The reserve pit will be to the north. The southeast corner of the pit will be approximately 60' north of the well bore. The pit will be a 175' X 150' and 6' deep with a capacity of 28,000 bbls.



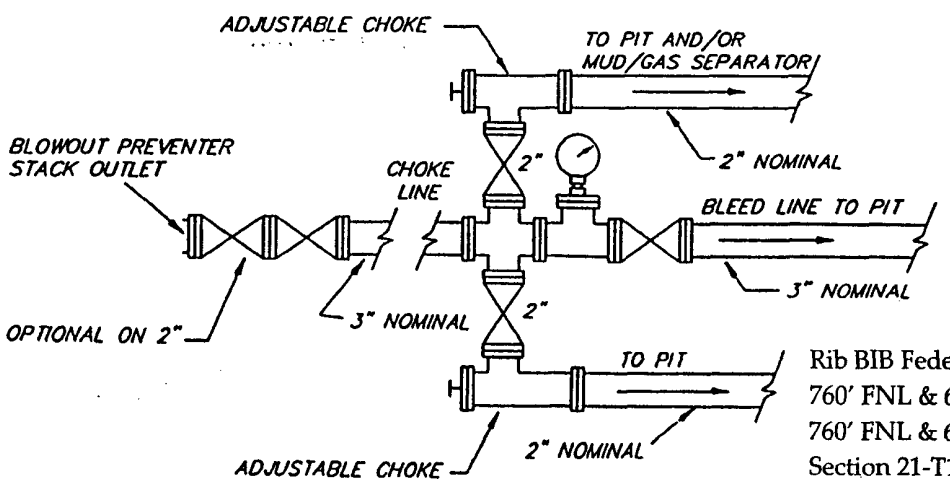
Standard reserve pit. All Reserve pits are double
Horse shoe size varies with depth of well

YATES PETROLEUM CORPORATION

TYPICAL 3,000 p.s.i. BLOWOUT PREVENTER SCHEMATIC



TYPICAL 3,000 p.s.i. CHOKE MANIFOLD SCHEMATIC



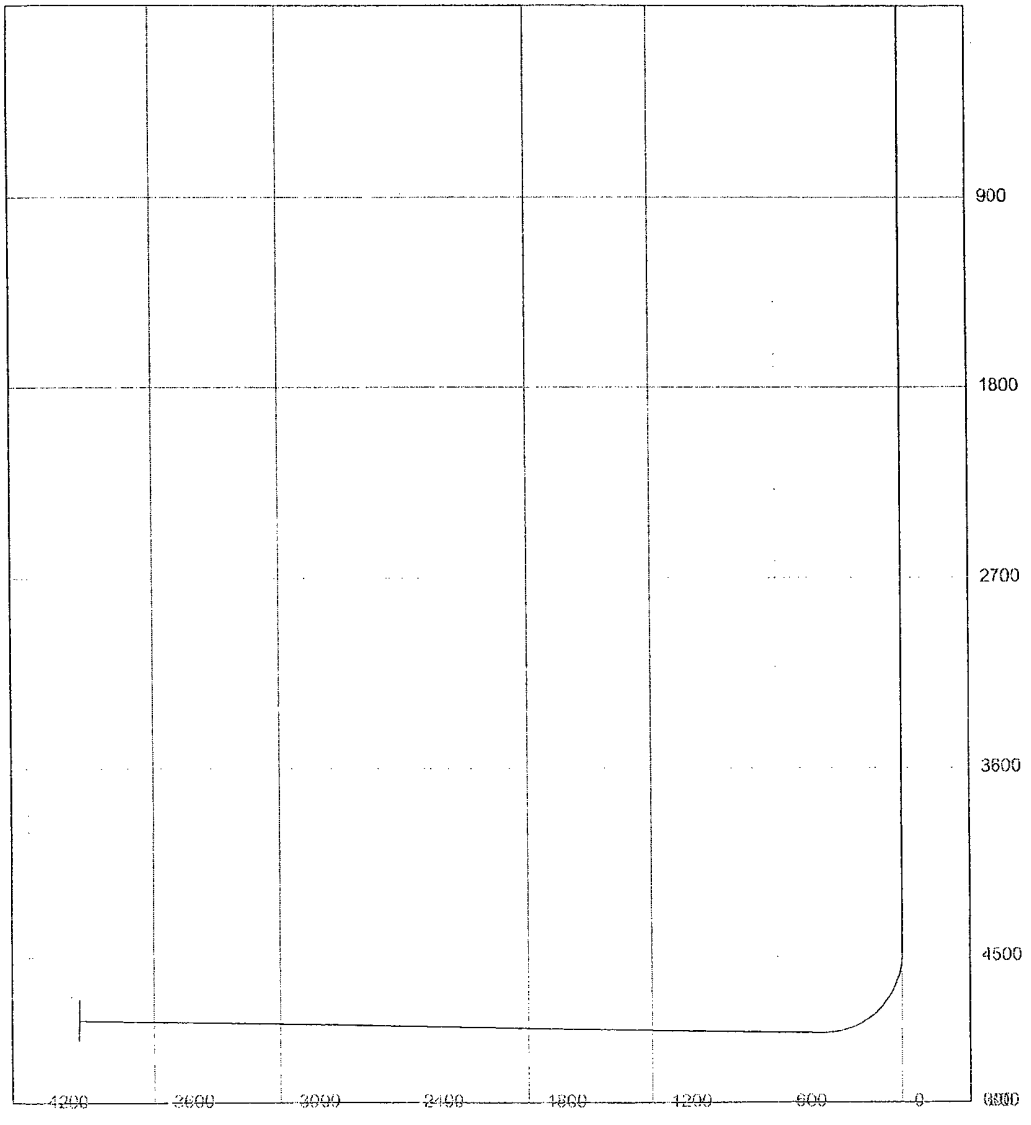
Rib BIB Federal Com. #1H
760' FNL & 660' FEL (SL)
760' FNL & 660' FWL (BH)
Section 21-T16S-R25E
Eddy County, New Mexico
EXHIBIT B

Simulated Survey - C:\Program Files\Drilling Toolbox 2001\Templates\Visual Wellbore\rib1h.wpp

	M.D. [ft]	Inclination [°]	Azimuth [°]	T.V.D. [ft]	N+/S- [ft]	E+/W- [ft]	D.L.S. [°/100ft]	ToolFace [°]	T.F. Ref. [HS/GN]
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	4483.00	0.00	0.00	4483.00	0.00	0.00	15.00	270	GN
3	4500.00	2.55	270.00	4499.99	0.00	-0.38	15.00	0	HS
4	4525.00	6.30	270.00	4524.92	0.00	-2.31	15.00	0	HS
5	4550.00	10.05	270.00	4549.66	0.00	-5.86	15.00	0	HS
6	4575.00	13.80	270.00	4574.11	0.00	-11.03	15.00	0	HS
7	4600.00	17.55	270.00	4598.18	0.00	-17.78	15.00	0	HS
8	4625.00	21.30	270.00	4621.75	0.00	-26.09	15.00	0	HS
9	4650.00	25.05	270.00	4644.73	0.00	-35.93	15.00	0	HS
10	4675.00	28.80	270.00	4667.02	0.00	-47.25	15.00	0	HS
11	4700.00	32.55	270.00	4688.51	0.00	-60.00	15.00	0	HS
12	4725.00	36.30	270.00	4709.13	0.00	-74.13	15.00	0	HS
13	4750.00	40.05	270.00	4728.78	0.00	-89.58	15.00	0	HS
14	4775.00	43.80	270.00	4747.38	0.00	-106.28	15.00	0	HS
15	4800.00	47.55	270.00	4764.84	0.00	-124.16	15.00	0	HS
16	4825.00	51.30	270.00	4781.10	0.00	-143.15	15.00	0	HS
17	4850.00	55.05	270.00	4796.08	0.00	-163.16	15.00	0	HS
18	4875.00	58.80	270.00	4809.73	0.00	-184.10	15.00	0	HS
19	4900.00	62.55	270.00	4821.97	0.00	-205.89	15.00	0	HS
20	4925.00	66.30	270.00	4832.76	0.00	-228.44	15.00	0	HS
21	4950.00	70.05	270.00	4842.05	0.00	-251.64	15.00	0	HS
22	4975.00	73.80	270.00	4849.80	0.00	-275.41	15.00	0	HS
23	5000.00	77.55	270.00	4855.99	0.00	-299.62	15.00	0	HS
24	5025.00	81.30	270.00	4860.58	0.00	-324.20	15.00	0	HS
25	5050.00	85.05	270.00	4863.55	0.00	-349.01	15.00	0	HS
26	5075.00	88.80	270.00	4864.89	0.00	-373.97	15.00	0	HS
27	5089.62	90.99	270.00	4864.91	0.00	-388.59	15.00	0	HS
28	8661.56	90.99	270.00	4803.00	0.00	-3960.00	0.00		

3D Directional Drilling Planner - 3D View

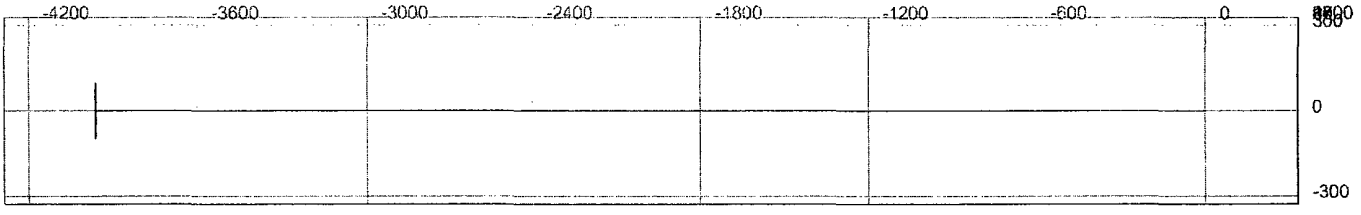
Company: **Technical Toolboxes Inc.**
Well: **Rib BIB Federal Com. #1H**



File: C:\Program Files\Drilling Toolbox 2001\Templates\Visual Wellbore\rib1h.wpp

3D Directional Drilling Planner - 3D V N

Company: **Technical Toolboxes Inc.**
Well: **Rib BIB Federal Com. #1H**



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MULTI-POINT SURFACE USE AND OPERATIONS PLAN
YATES PETROLEUM CORPORATION
Rib BIB Federal Com. #1H
760' FNL & 660' FEL (Pilot Hole)
760' FNL & 660' FWL (Bottom Hole)
Section 21-T16S-R25E
Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed well site is located approximately 7 miles Northwest of Artesia, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Take Hwy 82 west from the intersection of 26th & Main in Artesia, New Mexico for approximately 3.8 miles. Turn right here (first caliche road pat Smokey Trail road) and go north approximately 0.8 of a mile to a fork. Continue in a northerly direction (stay to the right) for about 2.9 miles. Turn east for about 0.7 of a mile to a cattle guard on the north. Turn north thru the cattle guard and go about 0.1 of a mile to the location. The new road will start here and go east about 0.1 of a mile to the fence. Turn north and follow the fence until it ends. Continue north on two track road for a total of about 0.8 of a mile. Turn west for about 0.1 of a mile to the northeast corner of the pad.

2. PLANNED ACCESS ROAD:

A. The proposed new access will be approximately 1 mile in length from the point of origin to the northeast corner of the drilling pad.
B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
C. The new road will be bladed with drainage on both sides. Two traffic turnouts may be needed.
D. The route of the road is visible.
E. Existing roads will be maintained in the same or better condition.

3. LOCATION OF EXISTING WELL:

A. There is drilling activity within a one-mile radius of the well site.
B. Exhibit D shows existing wells within a one-mile radius of the proposed wellsite.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. There are no production facilities on this lease at the present time.

B. In the event that the well is productive, the necessary production facilities will be installed on the drilling pad. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power. No power will be required if the well is a producing gas well.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is planned to drill the proposed well with a fresh water system. The water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

6. SOURCE OF CONSTRUCTION MATERIALS:

The dirt contractor will be responsible for finding a source of material for construction of road and pad and will obtain any permits that may be required.

7. METHODS OF HANDLING WASTE DISPOSAL:

A. Drill cuttings will be disposed of in the reserve pits.
B. The reserve pits will be constructed and reclamation done according to NMOCD guidelines.
C. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
E. Oil produced during operations will be stored in tanks until sold.
F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
G. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.

8. ANCILLARY FACILITIES: NONE

9. WELLSITE LAYOUT:

A. Exhibit C shows the relative location and dimensions of the well pad, the reserve pits, the location of the drilling equipment, rig orientation and access road approach.
B. The reserve pits will be plastic lined with a 12 mil liner. Yates Petroleum Corporation is in full compliance with the OCD General Plan for Drilling Pits approved on April 15, 2004.
C. A 600' x 600' area has been staked and flagged.

10. PLANS FOR RESTORATION:

A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible.
B. Unguarded pits, if any, containing fluids will be fenced until they have dried and been leveled.

C. If the proposed well is plugged and abandoned, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be reclaimed as required by the Oil Conservation Division.

11. SURFACE OWNERSHIP:
Private surface: Owned by Mr. W. I. Johnson, 202 Espuela Road, Lake Arthur, NM 88253Yates Petroleum Corporation has made an agreement for payment of surface damages with Mr. W.I. Johnson.

12. OTHER INFORMATION:

A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, and historical and cultural sites.
B. The primary surface use is for grazing.

13. OPERATOR'S REPRESENTATIVE:

A. Through A.P.D. Approval:

Cy Cowan, Regulatory Agent
Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210
Phone (505) 748-1471

B. Through Drilling, Completions & Prod.

Pinson McWhorter, Operations Manager
Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210
Phone (505) 748-1471

14. CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Yates Petroleum Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

11/27/06

Cy Cowan, Regulatory Agent

CONDITIONS OF APPROVAL - DRILLING

Well Name & No. 6H-Terry FU Com
Operator's Name: Yates Petroleum Corporation
Location SHL : 760FNL, 660FEL, Section 21, T-16-S, R-25-E
Location BHL: 760FNL, 660FWL, Section 21, T-16-S, R-25-E
Lease: NM10266

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 234-5972 or (505) 361-2822 - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 9-5/8 inch 5-1/2 inch

C. BOP tests

2.**Although no Hydrogen Sulfide has been reported in this section, it is always a possible hazard.**

3 Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

7. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

II. CASING:

1. The 13-3/8 inch surface casing shall be set **at approximately 350 feet** , below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

Possible lost circulation in Grayburg and San Andres formations.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is **cement shall circulate to surface.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement shall extend upward a minimum of 200 feet into the intermediate casing. Operator estimating TOC at 600 feet.**

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the **13-3/8** inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) is **3M** psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.

Engineer on call phone: 505-706-2779

WWI 103106

WELL CONTROL EMERGENCY RESPONSE PLAN
YATES PETROLEUM CORPORATION
CUSTOMER COPY

AMERICAN SAFETY SERVICES INC

Permit Number-025575	**Date issued**- 12-01-06	**District**- 16S
API #- 9[illegible]	**Form W-1 rec-**	**County**-Eddy
Type: Drill	**POOL NAME: Wildcat Wolfcamp**	

Operator **Yates Petroleum Corporation** Artesia, New Mexico	

Lease Name: Rib "BIB" Federal Com. **Well Number:** 2H
Location: 7 Miles N of Artesia **Total Depth:** 5200
Section: 11/TWN 16S/RNG 25E/UNT D **Township:** 16S
Survey: OCD

THIS PERMIT IS GRANTED PURSUANT TO NEW MEXICO STATE OIL CONSERVATION DIVISION

Permit Plat:
Yates Petroleum Corporation
Terry FU #2H
SECTION 15
Eddy County, New Mexico

Information in this section was provided to American Safety Services Inc by Yates Petroleum Corporation

Yates Petroleum Corporation Emergency Contact List

Division & Title	Name	Office	Residence	Cellular
Drilling Operations				
Yates Pet. 1st call	Jim Krogman	505-748-4215	505-746-2674	505-365-8340
Yates Pet. 2st call	Tim Bussell	505-748-4221	505-746-2121	505-365-5695
Yates Foreman				
Drilling Co.				
TP Trailer House				
Tool Pusher				
Public Safety	**Facility**	**Contact**	**Direct**	**Emergency**
Sheriff	Eddy County	Dispatcher	505-746-9888	911
Fire Dept.	Artesia	Dispatcher	505-746-5050	911
				911
Hospital	Artesia	Emergency Room	505-748-3333	911
Ambulance	Artesia	Dispatcher	505-746-5050	911
Life Flight	Hobbs/ Alamogordo	Dispatcher	800-242-6199	911
State Police	Artesia	Dispatcher	505-748-9718	911
Safety Contractor	**Name**	**Office**	**Residence**	**Cellular**
American Safety	Shawn McCormick			505-746-7803
	Paul Fodge			505-513-2872
	Nickolas Hughes			505-513-0513
	Cody Richardson			505-513-1620

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Additional H2s information is included at the end of the plan.....

Prepared by:
American Safety Services Inc
8715 Andrews HWY
Odessa TX 79765

Executive Summary

This plan is intended to document Yates Petroleum Corporation at procedures for dealing with well control emergency situations. American Safety Services Inc encourages taking all preventative measures required to reduce the probability of a well control incident from occurring. If it does occur, however, this pre-developed strategic action plan can be implemented quickly and decisively in response to the emergency. It is intended to supplement the Yates Petroleum Corporation Emergency Procedure and other similar plans.

This Well Control Emergency Response Plan (WCERP) was formulated during low-stress, non-emergency conditions. It is our experience that those response actions hastily grasped during the event suffer from the panic, confusion and indecisiveness of persons not normally involved with high-stress situations.

In any emergency response plan the health and safety of people is the prime concern. Generally, persons not familiar with highly specialized oilwell firefighting, capping and dealing with the high pressures and flowrates associated with blow-outs should not attempt to handle one of these events. Guidelines for early response procedures are included to mitigate risks, losses and damages, however.

There are three incident levels for which an emergency well control response is required. These levels are based on the severity and potential impacts of the incident. They are simply labeled Level 1, Level 2 and Level 3, with Level 1 being the least serious and Level 3 the worst. Level 3 denotes a complete loss of well control with no opportunity for regaining it using equipment and procedures available on-site. These correspond roughly to the Emergency Categories listed in the General Emergency Procedure.

In dealing with a well control emergency response, each person has duties and responsibilities. All critical tasks must be delegated to one person with minimal overlap. Thus, each responsibility is handled effectively without undue duplication.

The on-site organization is supervised and controlled by the Team Leader for the rig involved in the blow-out. The overall situation is controlled by the Manager over the area in which the blowout occurs who will serve as the Incident Commander. For most operations this will be the Manager (Drilling Operations) or the Manager (Exploration). These are individuals with long experience who are familiar with Yates Petroleum Corporation drilling and workover operations, corporate internal structure, corporate culture, personnel, various support services, and the capabilities of all emergency response groups including American Safety Services Inc. Each commander is assisted by several deputies, each of whom deals with responsibilities in their areas of expertise. This provides the most efficient and effective method of dealing with the emergency, protecting human lives and health, mitigating damages, and prot ecting the environment.

Response Levels

This plan involves three types of incidents classified as Level 1, Level 2 and Level 3 depending on the seriousness of the incident. A **Level 1** incident involves an uncomplicated kick that requires only normal operating procedures by the Yates Petroleum Corporation Rig Supervisor (Company Man) and the drilling crew with notification to the Team Leader (TL) having supervisory authority over that rig. A **Level 2** incident involves a complication of some type that requires extraordinary measures to be taken by the Company Man, drilling contractor personnel, the TL, Snr. Drilling Engineer and, in some instances, American Safety Services Inc to successfully deal with the situation. A **Level 3** incident involves the complete loss of well control. Response to this type incident requires declaration of a Major Incident, activation of the Well Control Organization within Yates Petroleum Corporation and all the personnel listed below to provide On-Scene Command at the site, Headquarters Control, Support Services and Operations Engineering Support.

Level 1 Well Control Incidents

Characteristics

Definition

A Level 1 incident is defined as a well control problem that occurs during drilling or workover operations for which formal or informal standard operating procedures (SOPs) exist to control the event. There are no injuries or fires associated with this type incident and the situation can be brought under control using only the resources available on-site.

Action Requirement

These SOPs are executed by the rig crewmembers under the supervision of the toolpusher and Yates Petroleum Corporation Rig Supervisor. The appropriate Team Leader is notified about the incident and the actions taken to control it. Support is rarely required from Drilling Services or from the well control services contractor unless the event escalates to a more serious level.

Examples

Drilling-related incidents

- An uncomplicated kick
- Complete loss of circulation (e.g., >500 bph) with hydrocarbon zone open
- Leak in casing with a permeable hydrocarbon zone open

Completion- or Workover-related incidents

- Unable to kill a well to start a workover
- Tripping with high loss rate (e.g., >250 bph)
- A kick taken after the well is killed
- Hole in surface/intermediate/production casing due to corrosion or damage
- Swabbing the well in during pipe tripping

Production-related incidents

- Pressure on production casing that cannot be bled down
- Small leak on master valve, swab valve of wing valve on tree
- Erosion and failure of the vent line to the pit, tank or test unit
- Master valve frozen or stem broken with valve in closed position

Simultaneous operations incidents

- Moving in rig or workover unit with wellhead damage due to collision
- Wellhead damage during heavy lift operations while installing BOPs, wireline lubricator, coiled tubing, etc.
- Close approach/near miss drilling past existing well(s) from same drilling pad while drilling new well

Additional incidents

- Chemical stocks for mixing kill weight mud fall below pre-determined adequate levels
- Kick tolerance falls below pre-determined level (e.g., 2 ppg or 24 bbls)
- Casing wear exceeds acceptable amount
- Failure of critical equipment (e.g., main power system on rig)
- Severe lost circulation and continued mud losses to the loss zone
- Impending severe weather
- Flow after cementing intermediate casing, production casing, or production liner

Response Actions

Responsible party Rig Supervisor

Process overview The following table provides an overview of the actions required during a Level 1 well control incident:

Step	Action
1	• Evaluate the situation • Determine that the incident is Level 1
2	Notify all personnel on location
3	Immediately execute initial response action based on standard operating procedures
4	Notify Team Leader
5	Continue using standard operating procedures until situation is resolved

Level 2 Well Control Incident

Characteristics

Definition

A Level 2 emergency can be defined as an abnormal well control event involving some sort of complication in which:

- Well control has **not** been lost at the surface
- Resources beyond the normal capabilities of the rig crew or production operations staff may be required such as unfamiliar or complex well control procedures
- Outside well control consultation, materials, special equipment or personnel may be required

There are no injuries or fires associated with this incident level since control has not been lost. The situation is not sufficiently threatening to declare a Major Emergency or to activate an Incident Command System to deal with the situation.

Action Required

Trained drilling staff should be able to handle a Level 2 emergency in the normal course of drilling or working over a well by:

- Removing the complication, thereby reducing the incident severity to Level 1 status, then using SOPs to circulate out the kick and resolve the problem
- Prepare a specialized procedure to control the incident with the complication remaining throughout the procedure

It is important that action be taken quickly to resolve the situation. Level 2 incidents are more serious than Level 1 incidents and they can escalate quickly to a complete loss of well control (i.e., a Level 3 incident). Even if control is not lost at the surface, an underground blowout or other similar event can occur if measures are not taken quickly.

Examples

Drilling-related incidents

- Kick with no pipe in the hole
- Kick with the bit off the bottom
- Drill collars or other BHA components across the pipe rams, well shut in on the annular preventer
- Kick while fishing, pipe off bottom, fish in hole
- Kick with the bit off bottom, pipe stuck
- Kick with very high intensity or large volume taken (high shut-in pressure)

	• Kick with simultaneous losses (above or below the bit) • Kick with bit or drill string plugged • Kick with critical equipment failure (e.g., pumps, electrical system, etc.) • Kick with hole in drill string • Kick without sufficient chemicals to weight up mud • Kick with wireline in the hole • Shallow gas kick with diversion • Low volume flow after cementing surface casing
Level 1 incidents escalating to a Level 2 while circulating out a kick	• Exceeding maximum allowable surface pressure while circulating kick out of the open hole section (before kick reaches the casing shoe) • Suspected underground cross-flow requiring further diagnosis • Small leak in BOP or wellhead • Leak in stab-in safety valve through ball seat and/or operating system seal • Gas hydrate (ice) plug in circulation system • Choke plugged or cut out • Washout in drill string or in surface equipment • Dropped drill string • Sheared drillpipe • Loss of BOP control function
Completion-or workover-related incidents	• Fishing operation performed under pressure • Potential underground crossflow • Leak in wireline BOP, lubricator and/or tree valves • Fishing or milling operation performed under pressure with coiled tubing or snubbing unit where loss of well control is imminent
Production-related incidents	• Production casing leak with tubing leak • Leak in master valve with failure of ESD valve control • Leak in tubing with casing valve leak • Tree component eroded to critical limit by sand • Surface safety valves do not effectively shut-off flow
Simultaneous operations incidents	• Drilling into existing well casing from new well • Casing leak develops during workover operations • Damage to tree, wellhead or casing near surface due to heavy dropped object • Motor vehicle collision resulting in severe damage to tree or wellhead • Inability to access casing annulus due to inoperative (stuck) side outlet valve on wellhead

Response Actions

Responsible party Rig Supervisor

Process overview The following table provides an overview of the actions required during a Level 2 well control incident:

Step	Action
1	Evaluate the situation; determine that the situation constitutes a Level 2 Incident classification and advise the Team Leader
2	Down man rig; remove all non-essential personnel and equipment from the site
3	Execute initial response actions to protect personnel, the rig, the well and the reservoir
4	Develop a procedure to remove the complication and deal with the situation using SOPs
5	If complication cannot be removed, prepare a non-standard procedure to deal with the incident
6	Consult with the appropriate Team Leader, Drilling Engineer and well control specialists, if needed
7	Obtain approval for execution of either action plan from the Team Leader
8	Execute approved procedure to resolve situation (may require the participation of well control specialists to assist)
9	Review outcome of procedure with the Team Leader

Level 3 Well Control Incidents

Characteristics

Definition

A Level 3 emergency denotes a **total loss of well control** with no opportunity to restore it using all the resources available on-site.

Action Required

Level 3 Incidents require the declaration of a Major Emergency and the activation of a fully-functional Incident Command System to effectively deal with the situation.

Discussion

A Level 3 Incident is, quite simply, a blowout. These incidents are equivalent to Category 2 or Category 3 Emergencies, depending on the severity and circumstances involved in the blowout. The Well Control Organization must be activated upon determining that the well is out of control and measures must immediately be taken to protect people, the environment and material assets in that order.

These emergencies, although serious at the outset, have the potential to escalate further during control procedures. Such escalation may cause serious structural damage or total loss of the rig, BOP stack and wellhead due to explosion, fire, or cratering. Other nearby wells may also be damaged due to underground crossflow and erosion caused by the blow-out. This could result in multiple, simultaneous well control problems on several wells. Clearly, prompt decisive action is needed to avoid this situation.

The response to a Level 3 Incident can be divided into stages for clarity. Different activities, personnel, equipment and safety issues exist at each stage. These are discussed more fully below:

Phase 1: Initial response

Phase 1 is the initial reaction to the well control emergency. It commences at the outset of the Level 3 Incident when it is clear that control is lost and cannot be regained. Actions such as evacuation, exclusion zone establishment and site isolation occur during this stage. Preliminary work to provide water for fire fighting and setting on-scene command facilities at the site are included. It ends when well control intervention operations site begin including fire extinguishment operations.

Phase 2: Well control operations

Phase 2 is the on-site operations phase of the well control emergency. This phase begins when actual well control actions are initiated at the site using surface intervention techniques. It ends when the well has been brought under control by any means. This phase is concluded when the Incident Commander officially declares the emergency resolved, and well salvage and recovery operations begin.

Phase 3: Relief well planning and drilling

Phase 3 is the relief well planning and drilling phase of the well control emergency. It begins when the Incident Commander approves a relief well as part of the well control project. It ends when the blow-out well is intersected and killed by pumping through the relief well or when the well is brought under control using surface intervention techniques and the Incident Commander declares the emergency resolved. Note that Phase 2 and Phase 3 operations can occur simultaneously depending on the circumstances of the blowout event.

Phase 4: Well recovery operations

Phase 4 is the recovery phase of operations on the now dead blow-out well. This phase begins when the well or blow-out is brought under control. It ends when normal drilling, workover or production operations resume or when well is plugged and abandoned.

Phase 5: Post-incident evaluation

Phase 5 involves evaluation of the incident following resolution of the emergency situation. This phase begins at or near the conclusion of well recovery operations. It ends with the submission of the final incident report to Yates Petroleum Corporation management.

Examples

Drilling-related Incidents

- Underground flow with BOP stack closed and gas, oil or water broaches to the surface
- Uncontrolled flow to surface through drillpipe with no means of shutting off the flow
- Gas or oil comes to surface through the drillpipe x casing annulus and the BOP cannot control the flow
- Uncontrolled flow from BOP stack with drill string out of the hole and unable to close blind rams
- Drilling rig on fire due to blowout
- Surface failure of choke line, kill line or choke manifold and well cannot be shut-in

Workover-related Incidents

- Loss of BOP function
- Uncontrolled flow to surface through tubing with no means of shutting off flow
- Gas or oil comes to surface through casing x tubing annulus and stack does not shut off flow

- Uncontrolled flow from BOP stack with no tubing in the hole and unable to close blind rams
- Completion rig on fire due to blowout
- Failure of existing wellhead component with no way to stop the flow
- Collision, irreparable damage to wellhead and leak during rig move in or move out

Production-related Incidents

- Collision between vehicle and wellhead resulting in major leak
- Wellhead/tree on fire with no way to shut off flow
- Mechanical failure of master valve, wing valve or flowline with no means to stop the flow

Simultaneous operations Incidents

- Falling object from rig damages wellhead or flowline resulting in catastrophic leak
- Gas cloud from major leak prevents access to wellhead or tree to shut-in well

Response Actions

Responsible party Rig Supervisor

Process overview The following table provides an overview of the actions required by the Rig Supervisor or Snr. Yates Petroleum Corporation employee during a Level 3 well control incident:

Step	Action
1	Evaluate situation and determine that well control is lost with no means to restore control
2	Order all personnel at the site to a designated Safe Area
3	Account for all personnel on the site. If all personnel cannot be accounted for, organize a Search and Rescue Party and attempt to locate all personnel if it is safe for them to do so
4	Determine injuries, if any, and provide first aid. Assess the need for air ambulance evacuation of injured persons. Assign personnel to mark the landing site for helicopter in the Safe Area
5	Notify the Team Leader about the situation and request declaration of a Major Emergency
6	Establish Exclusion Zone around site and mark zone boundary using available supplies and materials
7	Post a watch to secure the rig and prevent unauthorized persons from entering the Exclusion Zone

8	Notify and evacuate nearby rigs, homes, businesses or other facilities if they are affected by the blow-out plume
9	Down man the rig and move non-essential personnel away from the area. **Note: Do not release the rig crew until they are interviewed regarding events leading up to the blowout incident.**
10	Request that the local Fire Station provide equipment and personnel to contain the fire and protect nearby assets with water spray, if it is safe to do so. **Note: Do not attempt to extinguish fire at rig; wait for well control specialists to enter the Exclusion Zone.**
11	Complete *Initial Status Report* and fax to American Safety Services Inc. 432-363-0198
12	Remain on the site and coordinate support services needed for initial well control efforts; await the arrival of the Team Leader (On-Scene Commander)
13	Contain pollution/oil spill, if possible and if safe to do so
14	Monitor well conditions, keep a log recording all observations and report any changes to Team Leader (if not yet on-site) by radio and to CWC via fax or phone
15	Brief American Safety Services Inc First Responder upon arrival at the site; assist First Responder in determining if boundaries of Exclusion Zone should be moved
16	Remain on-site to assist with well control operations

Duties and Responsibilities, Rig Supervisor

Reports to:	On-Scene Commander

Team Authority	Job Title
Team Member	Rig Supervisor (Company Man)

Pre-Spud

Responsibility
Daily duties on location include: • Conducts safety meetings • Designates two Safe Areas (Muster Areas) for emergencies • Maintains census of all personnel on site • Reviews his duties and the *Initial Response Checklist*
Maintains supply of *Communications Record* at the wellsite
Maintains a current copy of Yates Petroleum Corporation General Emergency Procedure at the site and in toolpusher's quarters
Provides training to rig personnel on required response steps in each type of incident including mustering at designated Safe Areas and evacuation, if required. Periodically runs Search and Rescue exercises to ensure team readiness.

Level 1

Well control incident

Responsibility
Determines that the incident is a Level 1 incident; responds quickly to the situation before it can escalate to a more serious level: • Obtains data necessary for response • Prepares a procedure for dealing with the incident • Follows standard operating procedures to deal with the situation • Notifies the Team Leader about the incident and steps taken to resolve it

Level 2

Well control incident

Responsibility
Determines that the situation is a Level 2 incident and defines the complication involved; responds to the situation to keep it from escalating to a more serious incident level: • Determines the best way to remove the complication, thus lowering the incident to Level 1

	• Contacts the Team Leader, Snr. Drilling Engineer and possibly American Safety Services Inc for consultation about the problem • Prepares a procedure to remove the complication, lower the severity level and deal with the incident using SOPs; alternatively, jointly prepares a procedure to deal with the situation without removing the complication • Reviews procedure with Team Leader and obtains approval to proceed • Advises Team Leader of the outcome

Level 3	**Responsibility**
Well control incident	Determines that the situation constitutes a complete loss of well control that cannot be regained using assets on-site

Level 3	**Responsibility**
Phase 1: Initial Response	Executes steps outlined in the *Initial Response Checklist* to deal quickly and decisively with the situation at the wellsite; maintains records of all contacts and communications using the *Communications Record,* if possible
	With the assistance of the Toolpusher and medic/radio operator: • Musters all personnel on the rig to one of the designated Safe Areas • Accounts for all personnel at each Safe Area by comparing personnel at the muster point to the current on-site personnel census • Determines the extent of any injuries, provides emergency first aid treatment and assesses the need for air evacuation of injured persons on an emergency basis • Locates a safe landing zone for emergency aircraft to evacuate injured personnel, if required, and marks it for med-evac helicopter • Notifies Team Leader about situation and recommends classification of event as Level 3 Incident; provides initial report on event and current activities • Notifies nearby rigs, facilities, residences, businesses and other persons that could be at risk from the blow-out • Once site is evacuated, establishes Exclusion Zone around the well/rig, marks with on-hand materials and posts a watch to keep everyone out of the Exclusion Zone **NOTE: Do not re-enter the Exclusion Zone for any reason until well control specialists arrive to assist.**

	• Meets with local security personnel and requests they secure and restrict access to the blow-out site • Requests assistance to evacuate nearby rigs, facilities, residences and businesses that may be affected by the blow-out • If site evacuation is not required, contains the fire and protect assets by eliminating possible ignition sources and using a protective water spray by local fire department, if available **Note: Do not attempt to extinguish the fire.** • Completes *Initial Status Report* and faxes to: American Safety Services Inc - Fax 432-363-0198 • Contains pollution and/or spill, if possible without exposing personnel to danger or contamination • Monitors well conditions and maintains a log. Reports any significant changes in blow-out behavior to Team Leader • Briefs the American Safety Services Inc First Responder upon his arrival at the site • Relinquishes control of the wellsite to the On-Scene Commander (Team Leader) upon his arrival • Remains at the site and assists in well control efforts, as needed

Level 3	Responsibility
Phase 2: Well control	Assists with well control operations and support, as needed
	Prepares a detailed report of incidents immediately preceding the blow-out and provides to the On-Scene Incident Commander; reviews the report's content with the American Safety Services Inc Team Leader

Level 3	Responsibility
Phase 3 Relief well	Assists in well control planning, as needed, from his/her knowledge of the local area
	Visually surveys prospective relief well sites and roads for obstructions such as high lines, pipelines, unsatisfactory topography and other problems; provides details on each site to the Relief Well Design Team
	Provides information to the Rig Supervisor on the relief well rig and others supporting relief well drilling operations regarding local drilling conditions and any expected problems while drilling relief well and making intercept

	Assists On-Scene Commander to co-ordinate activities during relief well drilling

Level 3	Responsibility
Phase 4: Well recovery	Assists in planning well recovery work as directed by the On-Scene Commander
	Assists in developing recommendation to cease recovery operations, abandon blow-out well and substitute relief well after sidetracking
	Supervises well recovery work on the blow-out well if feasible, or abandonment if not

Level 3	Responsibility
Phase 5: Post-incident evaluation	Assists On-Scene Commander in preparing post-incident report and evaluation from field standpoint; includes his summary of events leading up to the incident and review of initial response efforts

Initial Risk Assessment

The Rig Supervisor will be the first to assess risks and determine the boundaries of the Exclusion Zone. The Exclusion Zone determines the minimum safe distance away from the blown-out well. It is based primarily on the concentration of combustible gas and/or toxic gas in the atmosphere. In general, the Exclusion Zone should be positioned according to the following:

Hazard	Maximum Limit
Combustible gas	10% of LEL*
Hydrogen Sulfide	10 ppm
Flammable liquid	10 bbls
Noise	85 dB

*Lower Explosive Limit

Other hazards such as proximity to vehicular traffic, sources of ignition, threats to production facilities and other risks must be evaluated and steps taken to ensure that the Exclusion Zone boundary is set far enough away from the blow-out site to reduce risks to all personnel to an acceptable level.

Once the Exclusion Zone Boundaries are set, no person should enter the area without special training, equipment and companion personnel. Often in such situations, persons not familiar with the potential of sudden catastrophic failures inside the Exclusion Zone venture too close to the blow-out in search of fellow workers, valuables left behind during the evacuation or curiosity. Sometimes, these mistaken few become victims if a failure, such as a spontaneous ignition of the plume, occurs while they are inside the Exclusion Zone.

Boundaries of the Exclusion Zone are not firm, and may need to be moved from time to time depending on several conditions such as:

- Flowrate from the well (increasing or decreasing)
- Zone of flow (increased H_2S concentration in the plume)
- Changes in atmospheric conditions (reduced air temperature, wind velocity, wind direction, atmospheric inversion, etc.)
- Hydrocarbon runoff with collection offsite
- Ignition of the plume
- Self-extinguishment of a fire
- Changes in boundary threshold limits

Risk management in the early stages of a blowout is accomplished primarily by prohibiting access to the site. Separation of potential victims from potential hazards is a very effective method of mitigating risks. In the case of Exclusion Zone boundary establishment, personnel are simply kept away from all hazards.

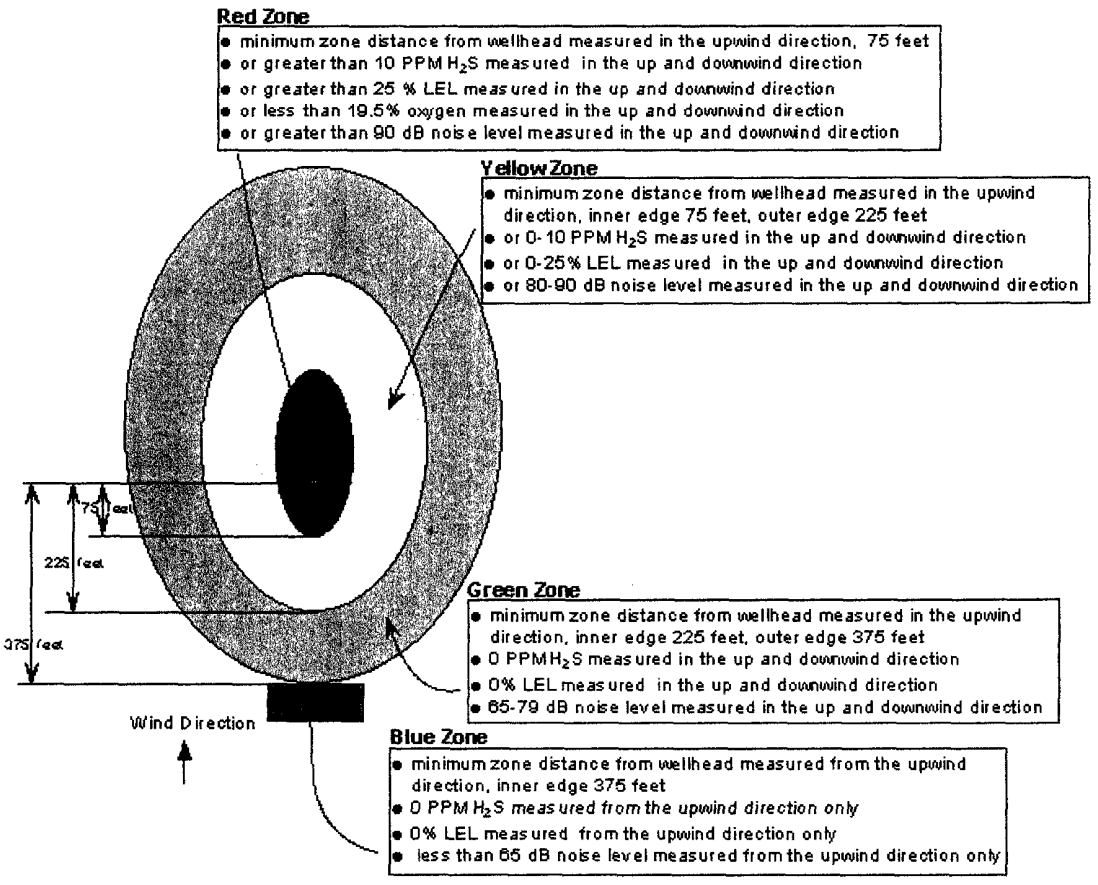
Situation Awareness

This is an area of human factors involving perceptions of people involved in high stress situations. Basically, it is the assessment of the person's concepts and thought processes when multiple data inputs are involved in an emergency. The best example of this area of study involves jet fighter pilots in combat situations.

In high stress situations the human mind can go into sensory overload easily. Alarms are sounding, warning lights are flashing, and there is normally panic, shouting and rapid movements. All of these render many persons incapable of determining what information is valid and should be honored, and what inputs are redundant or meaningless and should be ignored.

Work zones have been established to control access to areas in which well control specialists and certain support personnel can function safely. Others that do not fully understand the risks involved are simply not allowed to enter these areas. This has been successful in limiting exposure and consequential injuries to those people with poorly developed situation awareness during well control operations.

Example of Work Zones



Appendix

Appendix A	Initial Response Checklist
Appendix B	Initial Status Report
Appendix C	Communications Record

Appendix B

Initial Status Report

Preliminary information:

Operator: _____ Well Name & Number: _____

Rig: _____ Company Man: _____

Rig Phone: _____ Cell Phone: _____

Office Phone: _____ Office FAX:505 748 4229

Directions to site: _____

Blow-out Information:

Time of blow-out: _____ Well on fire? _____

Operation at time of blow- _____

Point of Escape: _____ Est. Flowrate: _____

Type of Fluid: _____ H_2S? Yes ☐ No ☐ CO_2? Yes ☐ No ☐

Height of plume before it ignites? _____ ft Total Height of flame: _____ ft

Mud Weight: ppg MD: _____ ft TVD: _____ ft Last shoe test: EMW @ depth

Rig Condition: _____

BOP Condition: _____ Closing Unit OK? _____

Condition of drill string: _____ TIW valve installed? Yes ☐ No ☐

Response:

Personnel Evacuated?	Yes ☐ No ☐	Number Missing:	
Exclusion Zone set up?	Yes ☐ No ☐	Injuries?	
Nearby rigs notified?	Yes ☐ No ☐	Air Ambulance needed/called?	Yes ☐ No ☐
Location Secured?	Yes ☐ No ☐	Regulatory Agencies notified?	Yes ☐ No ☐
Residents evacuated?	Yes ☐ No ☐	Pollution contained?	Yes ☐ No ☐

Drawing of Location:

Appendix C

Communications Record

Phone Transactions / Time Schedule / Contact Verification

Time	Description of Action	Contact

Hydrogen Sulfide (H2S) Properties and Effects

H2S is an **Extremely Toxic**, Flammable, Explosive and Corrosive Gas. It is heavier than air, paralyses you of smell. Causes breathing to stop and death will result.

At low concentration H2S has the odor of rotten eggs. The smell is very offensive. At slightly high concentration H2S will cause sense of smell to disappear and you are slowly poisoning yourself. At even slightly higher concentrations DEATH will result.

Properties of Hydrogen Sulfide (H2S)

Extremely deadly toxic gas
Colorless
Heavier than air
Burns with a blue flame
Produces Sulphur Dioxide (SO2) when burned (another toxic gas)
Highly corrosive
Irritant skin and eyes
Soluble in water and other liquids
Extremely flammable and explosive.

Hydrogen Sulfide (H2S) Toxicity Chart

Concentrations	Effects
Less than 1 PPM	Odor
1-PPM	May cause stress or health symptoms in sensitive people
10-PPM	Permissible Exposure Limit (PEL) Allowed 8 hours exposure without breathing apparatus.
15-PPM	Short Term Exposure Limit (STEL) 15-minute exposure 4 times a day allowed without breathing apparatus.
100-PPM	Immediately Dangerous to Life and Health (IDLH) No exposure allowed without breathing apparatus.
150 – 250 PPM	Loss of smell will result within a few minutes, burning of eyes, throat and coughing.
500-PPM	Destroys sense of reasoning and balance, causes respiratory within minutes and death will result.
600-PPM	Unconscious quickly, followed by loss of lung function, heart failure and death if not rescued and treated.
1000-PPM	Immediately loss of body function including the lungs. Heart will arrest, DEATH within minutes if not rescued immediately and treated.

10,000 PPM is 1 %

Sulphur Dioxide (SO2) Toxicity Chart

Concentration	Effects
1-PPM	Odor
2-PPM	Permissible Exposure Limit (PEL) Safe for 8 hours without breathing apparatus.
5-PPM	Short Term Exposure Limit (STEL) Safe for 15 Minutes – four time a day without breathing apparatus.
12-PPM	Burning of eyes, breathing irritation. Causes damage to the wall lining of the lungs.
100-PPM	Immediately Dangerous to Life and Health (IDLH) Causes serious decaying of skin tissue of respiratory system.
150-PPM	Extreme irritation, tolerated only for a few minutes.
500-PPM	Sense of suffocation with first breath requires medical aid.
1000-PPM	Death will result unless rescued and medical aid is provided.

SO2 is known to be a cancer-causing agent.

H2S Emergency Levels:

	Level I Low Impact Unconfirmed	Level II Significant Impact Potential	Level III Major Impact Hazard to People
Drilling	Problems During Drilling in a sour gas zone and the well has significant losses or gas-cut mud or kick	Equipment malfunction while circulating a kick or unable to maintain circulating volumes	Uncontrolled flow of sour gas (ignited or unignited) from the wellbore
Testing	Sour gas zone is open and an event occurs that has the potential to lead to a well control problem (leak at surface setup) Limited release.	An equipment malfunction restricts the ability to manage any level I emergency.	Uncontrollable flow of sour gas (ignited or unignited) from the wellbore.

Rig Crew Emergency Action

Position	Report to	Duties
Rig Manager	Drilling Supervisor	Activate the H2S Alarm. Supervise evacuation to Safe Briefing Area. Return to Drill Floor and Account for Essential personnel. Report to DS for further Instructions.
Driller on Duty	Rig Manager	Prepare to Secure Well. Check Drill Crew personnel for H2S Safety Equipment Readiness. In Case of Emergency Remove Non- Essential Personnel from Rig Floor
Drill Crew	Driller	Check their H2S Breathing Equipment for Readiness and Follow Instruction of the Driller.
H2S Safety Supervisor	Report to Rig Floor	Ensure that all Personnel are Using Required Breathing Apparatus. Report to DS. Monitor all Operations and Monitor all Personnel Under Air.
Service Company Personnel Visitors	Safe Briefing Area	Report to Safe Area and Await Further Instructions.