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7 7/8	J-55, 4 1/2	10.5		2100		Sufficient to C	irc
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#### NM 88241-1980

#### State of New Mexico

Buergy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DD: Artesia, NM 88211-0719

ASTRICT III
1000 Rio Brazon Rd., Aztec. NM 87410

P.O. BOX 2086, SANTA PE, N.M. 87504-2088

DISTRICT IV

#### OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	97335	Red Lake Shores; G	
Property Code	Prop	erty Name	Well Number
33009	RED LAKE SA	ND UNIT	53
OGRID No.	•	ator Name	Elevation
013837	MACK ENERG	Y CORPORATION	3662'

#### Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	feet from the	North/South line	Feet from the	East/West line	County
Ε.	21	17-S	28-E		2310	NORTH	990	WEST	EDDY

#### Bottom Hole Location If Different From Surface

County	East/West line	Feet from the	outh line	,	Feet from the	idn	Lot I	Range	hip	Townst	Section	No.	lat	Lor
	·									<u> </u>				
: -					ier No.	010	Code	nsolidation (	Cor	r Infill	Joint o	Acres	aled	edice
,		•											40	

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

	- ON A NON STAI	DARD UNIT HAS BEEN APPROVED BY TH	
: .			OPERATOR CERTIFICATION  I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.
3632.9'	3631.2'	GEODETIC COORDINATES  NAD 27 NME  Y = 662238.6 N  X = 545415.8 E  LAT. 32'49'13.78"N  LONG. 104'11'07.79"W	Jerry W. Sherrell Printed Name Production Clerk Title 1/28/2004 Date
3640.8	3657.1'		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
			January 09, 2004  Date Surveyed AWB  Signature & Seal of Professional Surveyor
			Day 92 Euchm 1/19/04 03.11.1447  Certaficate No GARY EIDSON 12641
			Manufaction of the second

#### ON 21, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M., COUNTY: NEW MEXICO. 3632.9 3631.2' 150' NORTH OFFSET 3658.3' RED LAKE SAND UNIT FED. #53 150' EAST 150' WEST Gr. Elev. 3662' OFFSET OFFSET LAT. 32\*49'13.78"N 3660.5 3662.9' LONG 104'11'07.79'W 150' SOUTH OFFSET 3660.7 600' DIRECTIONS TO LOCATION: FROM MILE MARKER 120 ON U.S. HWY #82 100 100 200 FEET (APPROXIMATELY 11.0 MILES WEST OF LOCO HILLS) GO 200' WEST TO A CATTLE GUARD ON THE NORTH SIDE Scale: 1"=100 OF ROAD, GO NORTHWEST 1.5 MILES. TURN RIGHT ON CALICHE ROAD AND GO EAST 0.4 MILES TO THIS MACK ENERGY CORPORATION LOCATION. THE RED LAKE SAND UNIT FED. #53 LOCATED 2310' FROM THE NORTH LINE AND 990' FROM THE WEST LINE OF SECTION 21, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO Survey Date: 01/09/04 Sheet Sheets W.O. Number: 03.11.1447 DRAWN BY: A.W.B JOHN WEST SURVEYING COMPANY 412 N. DAL PASO - HOBBS, NEW MEXICO - 505-393-3117 Date:01/12/04 DISK: CD#10 Scole:1"=100 MACK #1447

#### **DRILLING PROGRAM**

#### 1. Geologic Name of Surface Formation

Quaternary

#### 2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Seven Rivers	550
Queen	1100
Grayburg	1550'
San Andres	1950'

#### 3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150'	Fresh Water
Grayburg	1550'	Oil/Gas
San Andres	1950'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 8 5/8" casing to 350' and circulating cement back to surface will protect the surface fresh water sand. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 4 1/2" production casing, which will be run at TD.

#### 4. Casing Program:

Hole Size	Interval	OD Casing	Weight, Grade, Jt, Cond., Type
12 ¼"	0-350'	8 5/8"	24#, J-55, ST&C, New, R-3
7 7/8"	0-TD	4 1/2"	10.5#, J-55, LT&C, New, R-3

#### 5. Cement Program:

8 5/8 Surface Casing: Circulate to Surface with Class C w/2% CaCl2.

4 1/2" Production Casing: Cement Casing with Class C w/6# Salt & 2/10 of 1% CFR-3 per sack. We will run a hole caliper and run sufficient cement to circulate to surface.

#### 6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ramtype (The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The BOP will be nippled up on the 8 5/8" surface casing and tested by a 3<sup>rd</sup> party to 2000 psi and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of surface casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with 2000 psi WP rating. clude a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with 2000 psi WP rating.

#### 7. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

DEPTHTYPE	WEIG	HT	VISCOSITY	WATERLOSS
0-350'	Fresh Water	8.5	28	N.C.
350'-TD	Cut Brine	9.1	29	N.C.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

#### 8. Auxiliary Well Control and Monitoring Equipment:

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

#### 9. Logging, Testing and Coring Program:

Drilling Program Page 2

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. to 8 5/8 casing shoe.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined after the 4 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

#### 10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and estimated maximum bottom hole pressure is 2300 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

#### 11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is June 20, 2005. Once commenced, the drilling operation should be finished in approximately 6 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

Surface Use Plan Page 3

#### 9. Well Site Layout:

- A. The drill pad layout, with elevations staked by John West Engineering, is shown in Exhibit #6. Dimensions of the pad and pits are shown. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.
- B. Diagram below shows the proposed orientation of reserve pit, working pit. There is a possibility that the pits will be moved around depending on Caliche in the area. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.
- C. The reserve pit will be lined with high quality plastic sheeting (12 mil thickness).

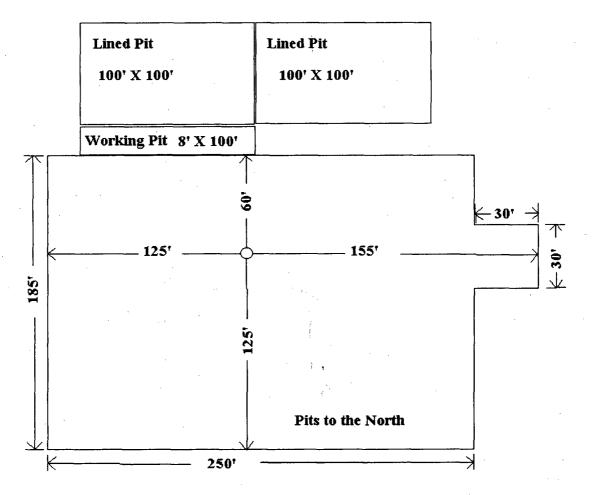


Exhibit #6

Surface Use Plan Page 8

#### **Mack Energy Corporation**

#### **Hydrogen Sulfide Drilling Operation Plan**

#### I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- 1. The hazards an characteristics of hydrogen sulfide (H2S)
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.
- 4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- 1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
- 2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- 3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.

#### II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

#### 1. Well Control Equipment:

- A. Flare line.
- B. Choke manifold.
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

#### 2. Protective equipment for essential personnel:

A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

#### 3. H2S detection and monitoring equipment:

A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

#### 4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (Exhibit #8).
- B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

#### 5. Mud program:

A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

#### 6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- B. All elastomers used for packing and seals shall be H2S trim.

#### 7. Communication:

- A. Radio communications in company vehicles including cellular telephone and 2-way radio.
- B. Land line (telephone) communication at Office.

#### 8. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

#### EXHIBIT #7

### **WARNING**

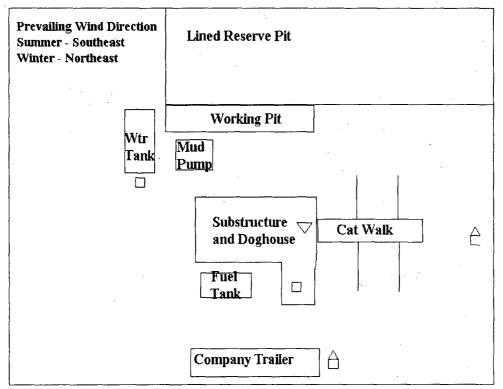
#### YOU ARE ENTERING AN H2S

AUTHORIZED PERSONNEL ONLY

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED
- 2. HARD HATS REQUIRED
- 3. SMOKING IN DESIGNATED AREAS ONLY
- 4. BE WIND CONSCIOUS AT ALL TIMES
- 5. CHECK WITH MACK ENERGY FOREMAN AT OFFICE

MACK ENERGY CORPORATION 1-505-748-1288

#### DRILLING LOCATION H2S SAFTY EQUIPMENT Exhibit # 8



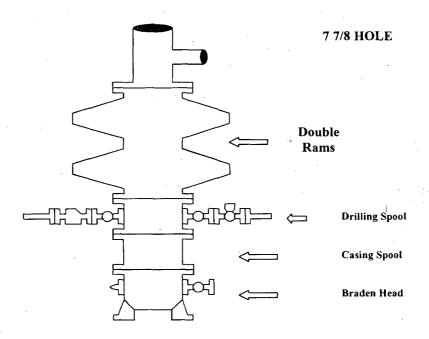
- ☐ Wind Direction Indicators
- Safe Briefing areas with caution signs and breathing equipment min 150 feet from

# Attachment to Exhibit #9 NOTES REGARDING THE BLOWOUT PREVENTERS Red Lake Sand Unit #53 Eddy County, New Mexico

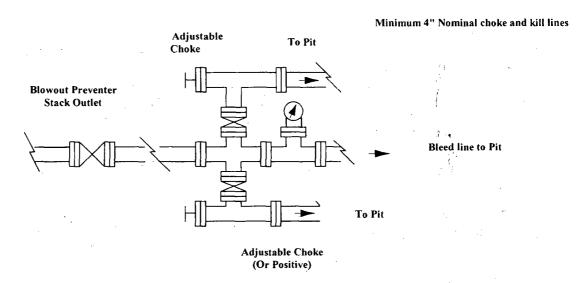
- 1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
- 2. Wear ring to be properly installed in head.
- 3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
- 4. All fittings to be flanged.
- 5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
- 6. All choke and fill lines to be securely anchored especially ends of choke lines.
- 7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
- 8. Kelly cock on Kelly.
- 9. Extension wrenches and hands wheels to be properly installed.
- 10. Blow out preventer control to be located as close to driller's position as feasible.
- 11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

# **Mack Energy Corporation**

Exhibit #9
BOPE Schematic



#### Choke Manifold Requirement (2000 psi WP) No Annular Required



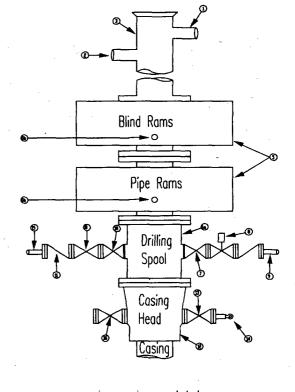
### Mack Energy Corporation

#### Minimum Blowout Preventer Requirements

#### 2000 psi Working Pressure 2 MWP EXHIBIT #10

**Stack Requirements** 

	Stack Requirement	er eg	
NO.	Items	Min.	Min.
		I.D.	Nominal
1	Flow line		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically		
	operated rams		
6a	Drilling spool with 2" min. kill line and 3"		2"
	min choke line outlets		Choke
6b	2" min. kill line and 3" min. choke line		
1	outlets in ram. (Alternate to 6a above)	}	1
7	Valve Gate	3 1/8	
1 .	Plug	ļ	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate	2 1/16	
1	Plug		
11	Check valve	2 1/16	
1.2	Casing head	1	
13	Valve Gate	1 13/16	
	Plug		
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"



#### **OPTIONAL**

	Flanged '		1 13/16	

#### CONTRACTOR'S OPTION TO FURNISH:

- All equipment and connections above Braden head or casing head. Working pressure of preventers to be 2000-psi minimum.
- Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
- BOP controls, to be located near drillers' position.
- 4. Kelly equipped with Kelly cock.
- Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
- Kelly saver-sub equipped with rubber casing protector at all times.
- 7. Plug type blowout preventer tester.
- 8. Extra set pipe rams to fit drill pipe in use on location at all times.
- Type RX ring gaskets in place of Type R.

#### MEC TO FURNISH:

- 1. Braden head or casing head and side valves.
- 2. Wear bushing. If required.

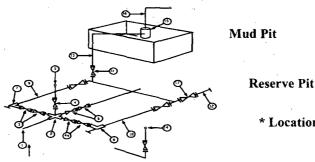
#### **GENERAL NOTES:**

- Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
- All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
- Controls to be of standard design and each marked, showing opening and closing position
- Chokes will be positioned so as not to hamper or delay changing of choke beans.
   Replaceable parts for adjustable choke, or bean

- sizes, retainers, and choke wrenches to be conveniently located for immediate use.
- All valves to be equipped with hand-wheels or handles ready for immediate use.
- Choke lines must be suitably anchored.
- Hand wheels and extensions to be connected and ready for use.
- Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
- All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
- Casing head connections shall not be used except in case of emergency.
- 11. Do not use kill line for routine fill up operations.

## Mack Energy Corporation Exhibit #11

MIMIMUM CHOKE MANIFOLD 3,000, 5,000, and 10,000-PSI Working Pressure 2 M will be used or greater 3 MWP - 5 MWP - 10 MWP



\* Location of separator optional

**Below Substructure** 

	t a		N	ments	ents					
		3,0	00 MWP			,000 MWP	••	1	0,000 MWP	
No.		I.D.	NOMINAL	Rating	I.D.	Nominal	Rating	I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"								:	10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000	·		5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000	-	3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"_	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x5'			2' x5'			2' x5'	
16	Line		4"	1,000		4"	000,1		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

- Only one required in Class 3M (1)
- Gate valves only shall be used for Class 10 M
- Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

#### EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored.
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should bee as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees.

#### United State Department of the Interior

# BUREAU OF LAND MANAGEMENT Roswell Resource Area P.O. Drawer 1857 Roswell, New Mexico 88202-1857

#### **Statement Accepting Responsibility for Operations**

Operator name:

Mack Energy Corporation

Street or box

P.O. Box 960

City, State

Artesia, NM

Zip Code,

88211-0960

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Lease No.:

NMLC-046250A

Red Lake Sand Unit #53

Legal Description of land:

Sec 21-T17S-R28E

SW/4 NW/4

Formation(s) (if applicable):

Red Lake Shores; Grayburg

Bond Coverage: (State if individually bonded or another's bond)

Individually Bonded

BLM Bond File No.:

58 59 88

Authorized Signature:

Jerry W Sherrell

Title:

**Production Clerk** 

Date:

5/18/2005