Form 3160-3 September 2001) J-04-44 J-04-44 Kew Mexico Oil Conservation Division, Distri- 1625 N. French Drive Hobbs, NM 88249 UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT			FORM APPROVED OMB No. 1004-0136 Expires January 31, 2004 5. Lease Serial No. N.M025777 /06 7/5			
APPLICA	ATION FOR PERMIT TO D			886	6. If Indian, Allottee of	or Tribe Name
la. Type of Work: DRILL REENTER			7. If Unit or CA Agreement, Name and No. E. SHUGART DELAW ARE UNIT			
	ell 🔲 Gas Well 🗹 Other 📈	ハ W 🗹 s	ingle Zone 🔲 Mu	ltiple Zone	8. Lease Name and Wel	11 No. #21
2. Name of Operator St. MARY EXPLORATION	N & LAND CO.				9. API Well No.	5.27126
3a. Address	· · ·	1	o. (include area code)		# 30.025-37036 10. Field and Pool, or Exploratory	
), ST 600, HOUSTON TX 7707 ation clearly and in accordance with		77.2771		SHUGART DELAW ARE EAST	
	000' FW L; Sec 19, TI8S, R32I		rements. *)		11. Sec., T., R., M., or E	3lk. and Survey or Area
At proposed prod. zone SA			Laite			
	n from nearest town or post office*	SUBIE	CT TO LIKE		SEC. 19 - T18S - 12. County or Parish	R32E 13. State
14 MILES SE OF LOCO I	HILLS, NM		VAL BY STA	TE	LEA	NM
 Distance from proposed* location to nearest 	÷		Acres in lease		ng Unit dedicated to this we	ell
property or lease line, ft. (Also to nearest drig. unit line	e, if any) 1425	604.12	AC UNIT	20	·	
18. Distance from proposed locati	on*	19. Propose			BIA Bond No. on file	
to nearest well, drilling, comp applied for, on this lease, ft.	650' (ESDU #11)	5550'		6041		
21. Elevations (Show whether D			imate date work will	6041 start*	23. Estimated duration	·
3714' GL			BER 15, 2004		30 DAYS	
		N CONTROLLED WATER BASIN				
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DISTRICT I 1625 N. FRENCE DR., HOBBS, NM 88240

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 66210

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410 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 JUNE 10, 2003 Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies



VICINITY MAP



SEC. <u>19</u> TWP. <u>18-S</u> RGE. <u>32E</u> SURVEY <u>N.M.P.M.</u> COUNTY <u>LEA</u> DESCRIPTION <u>1425' FNL & 1000' FWL</u> ELEVATION <u>3714'</u> ST. MARY LAND & OPERATOR <u>EXPLORATION COMPANY</u> LEASE <u>E.S.D.U.</u>



LOCATION VERIFICATION MAP



SEC. <u>19</u> TWP.<u>18–S</u> RGE. <u>32–E</u> SURVEY <u>N.M.P.M.</u> COUNTY <u>LEA</u> DESCRIPTION <u>1425' FNL & 1000' FWL</u> ELEVATION <u>3714'</u> ST. MARY LAND & OPERATOR <u>EXPLORATION COMPANY</u> LEASE <u>E.S.D.U.</u> U.S.G.S. TOPOGRAPHIC MAP GREENWOOD LAKE, N.M. GREENWOOD LARE, N.M. - TU





Nine Point Drilling Plan

(Supplement to BLM 3160-3)

St. Mary Land and Exploration Co. ESDU #21 1425' FNL, 1000' FWL; Sec 19, TI8S, R32E East Shugart Delaware Unit - Property Code 25743 Shugart (Delaware) East Field Lea Co., NM NM-025777

1. The geologic surface formation is quaternary.

2. Name and estimated tops of geologic horizons

Yates	2400'
Queen	3500'
Grayburg	4020'
San Andres	4420'
Delaware	4575'

3. Protection of possible useable water will be achieved by setting 8.625" surface casing @ 350' + and cementing it to surface. The Queen - Grayburg are oil and gas productive in this area in addition to the targeted Delaware-Brushy Canyon. Isolation will be achieved by setting 5.5" casing @ 5550' +/-, and cementing back to surface.

4. Specifically the casing strings referenced in #3 above will consist of the following:

 WITNESS Surface:
 8.625" OD, 24#/ft, J55, STC, new pipe @ 350'+ in 12.25" hole

 Production:
 5.50" OD, 15.5#/ft, J55, LTC, new pipe @ 5550'+/- in 7.875" hole

Cementing programs for the above casing strings are:

Surface: 225 sx Premium Plus w/ 2% CaC12, .25#/sk celloflake mixed at 14.8 ppg, and having a yield of 1.34 cu ft/sk

950 J55

The above volume represents 100% excess over calculated hole volume, and will be adjusted to actual setting depth of casing. The slurries will be preceded by a fresh water spacer, and displaced with brine water.

Production: (a) 365 sx Interfill C cement mixed @ 11.9 ppg and having a yield of

2.45 cuft/sk

5.

6.

(b) 330 sx Super H cement w/2.5 lbm salt, 0.3% CFR-3, 0.3% Lap-1, 5

lbm Gilsonite mixed @ 13.2 ppg, and having a yield of 1.63 cu f//sk

The above are Halliburton products with 50% excess volume - actual volumes will be adjusted to the open hole caliper of this wellbore. The cement slurries will be preceded by 12 bbls cement wash for mud removal and displaced with fresh water. Equivalent products from another vendor may be substituted for Halliburton depending on price/availability.

The well control equipment to be employed during the drilling of this well is as illustrated on EXHIBIT A. This equipment includes a pipe and blind rams, an annular preventer and a choke manifold of comparable pressure rating. Equipment will be rated for a minimum of 3000 psi, and will be tested to 80% of that pressure rating prior to drilling out the 8.625" surface casing.

It is anticipated that this well will be drilled to TD utilizing the fluids shown below: **0-350**, 950' NewGelLime "spud mud" 8.6-9.0 ppg Utilize native solids

0-350' 9.5° NewGelLime "spud mud" 8.6-9.0 ppg Utilize native solids to maintain sufficient viscosity to clean hole. Mix paper as required to control seepage loss.

350-5000' Brine 9.9-10.0 ppg Circulate thru reserve pit for gravitational solids removal. Add paper as required to control seepage loss. Maintain pH using Lime.

5000-5550' Salt gel 10-10.1 ppg Confine circulation to steel pits. Discontinue Lime, and mix starch for filtration control. Maintain water loss @ 10-15 cc. Sweep hole with Loloss at TD to clean hole for logging operations.

7. Auxiliary equipment will include an upper kelly cock valve, safety valve to fit drill pipe and pressure gauges.

8. No drill stem testing is planned for this wellbore.

Coring the Brushy Canyon is being considered and may be proposed if economically feasible.

A one-man mud logging unit will be utilized from 3000' to TD to record geological tops, collect samples, and monitor drilling fluids for hydrocarbons. GR/Caliper, Density Neutron and Dual Induction Laterologs will be run at TD to evaluate porosity and saturations. A cased hole GR/CBL/CCL will be run during the completion for correlation and to evaluate cement quality.

The expected BHP at TD is not expected to exceed 1500 psi, and a BHT of 105 F is anticipated. There is no H2S present in the hydrocarbons being produced from the other wells that the company operates in this section. Should such unexpected circumstances be encountered the operator and drilling contractor are prepared to take necessary steps to ensure safety of all personnel, and environment. Likewise, if a water flow is experienced while drilling though the Penrose-Grayburg (which has an active waterflood) the appropriate steps will be taken. Lost circulation is not expected to be a serious problem in this area, and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

It is estimated that this well will be drilled and cased in 10-11 days. Drilling will commence as soon after approval is received and services can be contracted.

9.

Thirteen Point Plan for Surface Use (Additional data for form 3160-3)

St. Mary Land and Exploration Co.

ESDU #21

1425' FNL, 1000' FWL; Sec 19, TI8S, R32E

East Shugart Delaware Unit - Property Code 25743

Shugart (Delaware) East Field

Lea Co., NM

NM-025777

1. EXISTING ROADS - A "VICINITY MAP" and a "LOCATION VERIFCATION

MAP" by John West Surveying are attached which show the location of existing roads and the area topography.

The road log to the location is as follows (the roads are better coming in from the east):

a) From the intersection of State Highway #529 and County road #126, go south on #126 4.1 miles to yellow cattleguard.

b) Turn west through cattleguard and go in a westerly direction for 1.0 mile.

c) Turn south and go .3 miles.

d) Turn East and go .2 miles. Location is then 350' to the North.

- 2. PLANNED ACCESS ROAD Approximately 210' of new N-S access road will be built from an existing road to the proposed location.
- 3. LOCATION OF EXISTING WELLS EXHIBIT B1 shows the location of other wells within a mile radius of the proposed location in Eddy County and EXHIBIT B2 in Lea, County.
- LOCATION OF EXISTING OR PROPOSED FACILITIES A fiberglass injection line will be laid to the well from the ESDU #20 injection facility, which is located 1052' to the WNW of the proposed location.
- 5. LOCATION AND TYPE OF WATER SUPPLY All water (fresh or otherwise) needed for the drilling and completion of this well will be purchased from a commercial source and trucked to the location via the existing and proposed access road. No water source wells will be drilled, and no surface water will be utilized.
- 6. SOURCE OF CONSTRUCTION MATERIALS Construction material (caliche) required for the preparation of the drill site is available from a local source 3 ½ miles

6.

SOURCE OF CONSTRUCTION MATERIALS - Construction material (caliche) required for the preparation of the drill site is available from a local source 3 ¹/₂ miles away. It is not anticipated that a significant amount of material will be required as the terrain is relatively flat. Transportation will be over the existing roads.

7. METHODS FOR HANDLING WASTE DISPOSAL -

• Drill cuttings will be disposed into drilling pits after fluids have evaporated.

• The drilling pits will be lined with a biodegradable plastic liner, and buried as per regulatory requirements. The pits will be located on the #21 drill site.

• Receptacles for solid wastes (paper, plastic, etc) will be provided and equipped to prevent scattering by wind, animals, etc. This waste will be hauled to an approved landfill site.

• Any other waste generated by the drilling, completion, testing of this well will be removed from the site within 30 days of the completion of drilling or testing operations.

• A Porta-John will be provided for the crews. This will be properly maintained during the drilling operations and removed upon completion of the well.

- 8. ANCILLARY FACILITIES The drilling, completion, and/or testing of this well will require no ancillary facilities.
- 9. WELLSITE LAYOUT Attached, as EXHIBITS C & D are plats showing the anticipated orientation of the drilling rig and the pad. A similar rig may have to be substituted for Big Dog Rig #3 if it is no longer available when approval is granted for this application. Material moved to create the drilling pits will be utilized in the dike around the pits so as to facilitate restoration of the area when operations are completed.
- 10. PLANS FOR SURFACE RESTORATION Reclamation of the surface location will be in accordance with the requirements set forth by the BLM. As stated earlier all waste generated by this operation will be disposed of in an approved manner, and the site restored as closely as possible to its pre-operation appearance. Due to the topography of the area no problems are anticipated in achieving this status and no erosion or other detrimental effects are expected as a result of this operation.
- 11. OTHER INFORMATION The surface ownership of the drill site and the access routes are under the control/ownership of:

Bureau of Land Management

P. O. Box 1778

Carlsbad, New Mexico 88221-1778

505-234-5972

The BLM representative for this area is Barry Hunt who can be reached at the above number, or 505-361-4078.

The site was archaeologically surveyed in July 2004. Danny Boone, the registered archeological surveyor, should forward a copy of that report to the BLM.

12. OPERATORS REPRESENTATIVE - St. Mary Land and Exploration is covered by Nationwide Bond No. 6041872. St. Mary Land and Exploration is represented by:

Charles M. Jones, Operations Manager

Dennis Goins, Operations Specialist

Cary Billingsley, Operations Engineer/Agent

550 W. Texas, Suite #704

P.O. Box 51904

Midland, TX 79710-1904

432-684-8900 (o)

432-638-6781 (m)

432-697-0701 (h)

Jackie Herron, Contract Pumper Hagerman, NM 505-746-7601 (m) 505-752-2701 (h)

13. **OPERATORS CERTIFICATION**

I hereby certify that I, Cary N. Billingsley-Operations Engineer/agent, have inspected the proposed drill site and access route and that I am familiar with the conditions that currently exist; that the statements made in the APD package are to the best of my knowledge true and correct; and that the work associated with operations herein will be performed by ST. MARY LAND & EXPLORATION COMPANY and it's contractors and subcontractors in conformity with the terms and conditions of this APD package. I also certify responsibility for the operations conducted on that portion of the leased lands associated with this application with bond coverage being provided under a BLM nationwide bond.

This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Name and title:

Cary N. Billingsley, OperationsEngineer/agent for St. Mary Land & Exploration Co. allingsley

Signature:

Date:

EXHIBIT A



B.O.P. STACK SPACING SIZE: 11 3000#















Rig #3 Rig Plan

*Or Equivalent





Big (Dog Drilling

Rig #3



SECTION 24, TOWNSHIP 18 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY CO. & SECTION 19, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M., LEA CO. NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 50.0 FEET WIDE AND 1052 FEET OR 0.199 MILES IN LENGTH CROSSING USA LAND IN SECTION 24, TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO & SECTION 19, TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM, LEA COUNTY, NEW MEXICO AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE CENTERLINE.

NOTE: BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I HEREBY CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

Born 19 Eulor 1/20/04
GARY & EIDSON N.M. P.S. S No. 12641
PROVIDING SUEVEYING SERVICES SNCE 1946 JOHN WEST SURVEYING COMPANY 412 N. DAL PASO HOBBS, N.M. 88240 (506) 393-3117

1000 0 HHHHH Scole:	1000 2000 FEET 1"=1000'			
ST. MARY LAND & EXPLORATION COMPANY				
SECTION 24, TOWNSHIP N.M.P.M. EDDY CC SECTION 19, TOWNSHIP	CTION LINE CROSSING 18 SOUTH, RANGE 31 EAST, DUNTY, NEW MEXICO & 18 SOUTH, RANGE 32 EAST, OUNTY, NEW MEXICO			
Survey Date: 07/16/04	Sheet 1 of 1 Sheets			
W.O. Number: 04.11.0716	Drawn By: J. RIVERO			
Date: 07/19/04 DISK:CD#10	04110716			

<u>District 1</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 1301 W. Grand Avenue, Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505 <u>Pit or Below-</u> Is pit or below-grad Type of action: Registration of			
Operator: St. Mary Land & Exploration Company Telephone: 281-677-2772 e-mail address: mstgermain@stmaryland.com Address: 580 Westlake Park Blvd., Suite 600, Houston, TX 77079 Facility or well name: ESDU #21 API #: $3D \cdot 025 - 37036$ U/L or Qtr/Qtr E Sec 19 T 18S R32E County: Lea Latitude 32°44'10.69" Longitude 103°48'38.32" Surface Owner: Federal X State			
Pit Type: Drilling X Production [] Disposal [] Workover [] Emergency [] Lined X Unlined [] [] Liner type: Synthetic X Thickness 12 mil Clay [] Pit Volume 3500 bbl	Below-grade tank Volume:bbl Type of fluid: Construction material: Double-walled, with leak detection? Ye		
Depth to ground water (vertical distance from bottom of pit to seaso high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet X100 feet or more	(20 points) (10 points) (0 points)	
Wellhead protection area: (Less than 200 feet from a private domes water source, or less than 1000 feet from all other water sources.)	ic Yes <u>X</u> No	(20 points) (0 points)	
Distance to surface water: (horizontal distance to all wetlands, playa irrigation canals, ditches, and perennial and ephemeral watercourses			
	Ranking Score (Total Points)	0	

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite 🔲 offsite 🗋 If offsite, name of facility NA_. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No 🗌 Yes 🗌 If yes, show depth below ground surface______ft. and attach sample results, 123455

(5) Attach soil sample results and a diagram of sample locations and even untions

Additional Comments: NA	
	1000 100 100 100 100 100 100 100 100 10
	202120212529

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines X, a general permit [], or an (attached) alternative OCD-approved plan [].

Date: 12/22/04

Printed Name/Title: Marcie St. Germain/Production Tech

Signature Marcie St. Germain

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval: Printed Name/Title	Signature	ORIGINAL SIGNED BY PAUL F. KAUTZ	PJAN 0 6 2005
		PEINO	