District_I 1625 N. French Dr., Hobbs, NM 88240 District_II 1301 W. Grand Avenue, Artesia, NM 88210 District_III 1000 Rio Brazos Road, Aztec, NM 87410 District_IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Form C-101 May 27, 2004

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit to appropriate District Office

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

,	SWE	Operator Name PI LP, P.O. Box 576,	and Addres	ss exas 77001					² OGRID Nu	250036_		
	Local Co	ntact: Shell Explorat	ion & Produ	iction Compar	y ,	CONFIDENTIAL 30-019-20138				ver 9-20138		
³ Property Code Property N							Name Well No.					
37/63							Proposed Pool 2					
		⁹ Proposed Pool 1							osed Pool 2			
			_	⁷ Su	face Loc	ace Location SEE REVISION						
UL or lot no.	Section	Townsh		Lot Idn F		from the			Feet from the	East/West lin	1 1	
K 3 10N 23E 1261+/- 8 Proposed Bottom Hole Location											Guadalupe	
UL or lot no.			1		t from the			Feet from the	East/West lin	ne County		
				<u> </u>		1 337 11 7						
11 Work	Гуре Code		¹² Well Type C	ode	Addition:	il Well li ible/Rotary		<u>n</u> 14 I	Lease Type Code	15 (Ground Level Elevation	
	N		G			R	P			4674 graded R		
	ultiple N		¹⁷ Proposed De 13,674	pth		ormation sissippian					²⁰ Spud Date ~April 1, 2009	
Depth to Grou					from nearest				1	n nearest surfa		
~600 feet (Sar Pit: Liner:	ita Rosa aq Synthetic		mils thick Clay		iles (Latigo Ra olume: 84,430			y Method	`	•	meral drainage)	
	d-Loop Sys	F-7		L FILVO	orumea4,4.n	0015	ols Drilling Method: Fresh Water 0-1,300 ft, Brine 1,300'-13,674 ft Fresh Water					
0.050	a soop s ;		·	²¹ Pı	roposed Ca	sing and						
Hole S	ize		Casing Size	Casing weight/foot			Setting Depth		Sacks of Cement		Estimated TOC	
30-inch			20-inch		nductor		90 feet		NA		0 feet	
14.75-i	inch		10.75-inch	40	0.5 lbs.	1300		et	930		0 feet	
9.875-i	9.875-inch		7.625-inch	29	9.7 lbs.		5900 feet		1188		1000 feet	
6.5-inch 4.5		4.5-inch	13.5 8	& 15.1 lbs.		13674 feet		388		5400 feet		
Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary. See Attachment A – Latigo Ranch 3-3 Drilling & Completion Plan Attachment A1 – Nabors B.O.P. Stack Diagram See Attachment B – Latigo Ranch 3-3 Surface Use Plan See Attached Maps Location Photos Well Location, Latigo Ranch 3-3 Location Layout for Latigo Ranch 3-3 Topographic Map A Topographic Map B												
23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOCD guidelines , a general permit , or an (attached) alternative OCD-approved plan Signature: Printed name: Michael L. Bergstrom Title: Regulatory Coordinator E-mail Address: michael.bergstrom@shell.com						Appr	OIL CONSERVATION DIVISION Approved by: DISTRICT SUPERVISOR Approval Date: 3/16/09 Expiration Date: 3/16/11					
Date: 2/9/200		oorgan	Phone: 303	222 6347		Cond	litions of Ar	nroval A	nached			



2009 FEB 11 PM 12 10

State of New Mexico
Energy, Minerals and Natural Resources Dept.
Oil Conservation Division-District 4
1220 South St. Francis Drive
Sante Fe, New Mexico 87505
Attn.: Ed Martin, District Supervisor

Shell Exploration & Production Co.

Regulatory Affairs-EP Americas 4582 S. Ulster Street Parkway Suite 1400 Denver, Colorado 80237

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February 9, 2009

Subject: Application for Permit to Drill (APD)

Shell Exploration & Production Co., Latigo Ranch 3-3

Guadalupe County, New Mexico

Dear Mr. Martin:

Shell Exploration & Production Company, dba SWEPI LP (Shell) requests that New Mexico Oil Conservation Division-District 4 (OCD) review and approve the APD for the subject well. This exploration well is located in area that has no existing oil &n gas production, and is targeting prospective zones that have been the subject of limited exploration. Therefore, Shell requests that OCD hold any information regarding this well confidential for the period designated under NMOCD rules. All documents submitted are clearly marked as "confidential".

Shell is currently investigating an alternative access route to this well location, as shown on the Well Topographic Maps A and B. If an alternative route is selected for this well, we will amend the APD. Shell anticipates beginning drilling, completion and testing activities for this well, on or about April 1, 2009.

If you have any questions or require any additional information regarding this APD, please contact me at (303) 222-6347, or David Janney at Kleinfelder in Albuquerque at (505) 344-7373.

Regards,

Michael L. Bergstrom

Regulatory Coordinator

Shell Exploration & Production Company

Attachments: Form C-101

Drilling & Completion Plan

Surface Use Plan

Location Photos and Maps

Form C-102 Form C-144

Latigo Ranch 3-3 Drilling and Completion Plan

Salar.

The well will be drilled with potable (TDS<3,000 ppm) water-based fluids from surface to the bottom of the Santa Rosa Formation ("freshwater aquifer"). Surface conductor and intermediate casing strings will be installed and cemented. Below the Santa Rosa Formation, the well will be drilled with nonpotable (TDS>10,000 ppm) water-based fluids or oil-based mud (OBM), as necessary to minimize lost circulation and address difficult drilling conditions, to total vertical depth (TVD). Additional intermediate casing strings and production casing will be installed and cemented. Upon completion of drilling, the casing will be perforated in selected prospective zones. Hydraulic fracturing will be performed in the prospective zones, and gas and water flow testing will be conducted in individual and/or commingled zones.

Drilling Program

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- <u>Lithology</u>
 - o Tucumcari Basin
 - This area has been the subject of limited oil & gas exploration activity
 - o Prospective formations are in the Pennsylvanian section
- Fluid Bearing Formations
 - Potable water (Surface 1500 feet below ground surface)
 - o Brackish water (1500+ feet below ground surface)
 - O Natural gas/condensate (~8000+ feet below ground surface)
- Drilling Fluids
 - o Freshwater drilling fluids
 - Potable (TDS< 3,000 ppm) water-based, 8.3-8.6 ppg, viscosifiers and LCM additives
 - Brackish water drilling fluids
 - Non-potable (TDS>10,000 ppm) water-based fluids, 8.6-10.0 ppg, salt, lime, caustic soda, viscosifiers and LCM additives
 - Oil-based drilling fluids (OBM)
 - as needed in non-potable zones otherwise drilled with brackish water
 - o Lost Circulation Materials (LCM)
 - As needed, LCM consisting of, but not limited to, cedar fibers, mica, drilling paper, graphite, walnut plug, cottonseed hulls and calcium carbonate may be introduced into the well bore to address any lost circulation zones encountered during drilling
- Wellhead Pressure Control (Blowout Prevention [BOP])
 - Wellhead BOP equipment is standard design for "tight gas" wells, as shown on Attachment A1
 - Maximum pressures for equipment (wellhead A section to be 11" 5,000 psi; wellhead B section to be 11" 10,000 psi; BOP with 11" 5,000 psi annular preventer; and Ram preventers with 11" 10,000 psi)
 - Maximum downhole pressures anticipated ~6500 psi
 - o BOP testing procedures conducted by third party contractor upon installation

Ram preventers to 10,000 psi and 250 psi; Annular preventer to 2500 psi and 250 psi, for 10 minutes and 5 minutes, respectively

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Casing and Cementing Program

- All casing run and set will be new and unused.
- Surface Casing
 - o 14.75-inch diameter well bore, drilled to 1300 feet.
 - o 10.75-inch diameter casing installed and cemented to surface
- Intermediate Casing
 - o 9.875-inch diameter well bore, drilled to 5900 feet.
 - o 7.625-inch diameter casing installed and cemented to 1000 feet
- Production Casing
 - o 6.5-inch diameter well bore, drilled to 13674 feet.
 - 4.5-inch diameter casing installed and cemented to 5400 feet

Well Completion

- Casing Perforation
 - O Perforate casing in prospective sand zones, using three shots per foot (spf), 120 degree, phased perforating guns
- Hydraulic Fracturing
 - O Treat prospective sand zones with ceramic and/or sand proppant materials during hydraulic fracturing

Logging and Testing

- Lithologic Logging
 - o Mudlogging (to TVD); Selective coring (whole and/or rotary sidewall)
- Wireline-Logging, including but not limited to:
 - o Gamma Ray, Resistivity, Porosity, Neutron and Sonic data collection
- Flow Testing
 - o Flow individual production zones for up to 14 days
 - o Flow entire well for up to 120 days
 - O Total flow testing period not to exceed 120 days, without additional approval

Water Supply for Drilling and Completions

- One water well (minimum 5 ½-inch and maximum 7-inch diameter casing) will be drilled on-site about 500 feet west of the well location, on the edge of the well site
 - A temporary appropriation of up to 3 acre feet (AF) of potable water will be obtained from the Office of State Engineer-District 7 (OSE) for production of potable water from the Santa Rosa aquifer
- Potable groundwater will also be available from the Webb CD-1 water well located on the Webb Ranch, about 3 miles from the well site
 - O A temporary appropriation of up to 3 acre feet (AF) of potable water was previously approved by the Office of State Engineer-District 6 (OSE) for production of potable water from the Santa Rosa aquifer. This appropriation will expire in September 2009, and will be renewed with the OSE.
- Potable groundwater will be available from wells located on the Pajarito Ranch, about 22 miles from the well site
 - O Parajito Creek Ranch holds appropriations for more than 500 acre feet (AF) of potable groundwater, which may be sold for any and all uses.

BILL OF MATERIALS NO. 10TY 1 11" 5M CK SCREW HEAD ANNULAR B.O.P. w/10M BIM FLANGE 2 1 11" 10M TYPE U DOUBLE B.O.P. C/W 4 OFF 4 1/16" 10M FLANGED OUTLETS 3 1 11" 10M ADBILL SERVICE C. ELG. C/W 2 OFF		NOTES: 1. VALVE SEQUENCE FOR BOP STACK MOUNTED CHOKE LINE VALVES IS OPTIONAL (ITEMS 6 AND 7).	THILF® COPPRIGHTED RICE PACE 750 B.O.P. STACK 11"-10M RICE PACE 750 RICE PACE
	1/16" 4'-0 9/16"	8-,51 -,7 -,0-,7	PROTECTION ONLY RECUENT AND DELEVERATION ONLY RECUENT AND DELEVERATION ONLY FREE DECOUNTS AND DELEVERATION ONLY FREE D

Latigo Ranch 3-3 Surface Use Plan

The well location, associated facilities and access roads will be constructed on fee surface, upon approval of the surface owner. Well site and access roads will be constructed to withstand the loads occurring during mobilization, placement and operation of drilling, completion and testing equipment. Construction activities will be conducted to minimize surface disturbances and to readily accommodate reclamation activities on disturbed areas.

Existing Roads

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- Access to Location
 - o From the town of Cuervo, New Mexico
 - Drive north on County Road, about 5.9 miles (Topographic Map A)
 - Follow Pipeline Corridor road west toward Webb CD-1 well location, about 3.8 miles (Topographic Map A)
 - Follow Webb Ranch road north toward Webb CD-1 well location, about 1.8 miles (Topographic Map A)
 - From Webb Ranch road, turn west, follow improved two track road west, south, west and south, about 3.1 miles, to Latigo 3-5 well location
 - From Latigo 3-5 well location go south to pipeline road and turn east, follow pipeline road, about 1.3 miles, to Latigo 3-3 (Topographic Map B). Latigo 3-3 is southeast of Cuervo Hill, north of the pipeline road

Roads to be Constructed/Maintained

- Improved Roads
 - County Road (maintained by Guadalupe County)
 - Constructed of compacted crushed aggregate and fill
- Two-Track Roads
 - Latigo Ranch and Webb Ranch Roads
 - Existing improved 2-Track road extends to Latigo 3-5 well location
 - Constructed of compacted crushed aggregate and fill
 - Culverts and/or rock-filled, low water crossings installed
 - Construct improved 2-Track road segment: north and approximately parallel to the Pipeline Corridor to Latigo 3-3 well location
 - Grade/crown road, placing crushed aggregate, as needed
 - Install culverts and/or rock-filled, low water crossings, as needed
 - Alternative to construct a 2-Track road segment: from near the Webb CD-1 well location to Latigo 3-3 well location, east of Cuervo Hill (Topographic Map B)
 - Grade/crown road, placing crushed aggregate, as needed
 - Install culverts and/or rock-filled, low water crossings, as needed

Well Site Layout

- Well pad location and associated facilities are shown on Well Location, Latigo Ranch 3-3, Topographic Map A, and Topographic Map B
 - o The staked well location and proposed access road are shown on Location Photos
 - o Well location, water well, access roads, lined pits, above-ground tanks and temporary buildings, and storage areas are shown on Location Layout for Latigo Ranch 3-3

• Water well will be drilled at a location about 500 feet west of the well location, on the edge of the well site

Existing Oil & Gas Wells

Webb CD-1 well, Webb Ranch 3-23 well, Latigo Ranch 2-34, and Latigo Ranch 3-5 wells are nearby

Existing and/or Proposed Facilities

- Well Site Facilities
 - o Located at well site at approximate locations shown on Location Layout for Latigo Ranch 3-3
- Temporary living quarters
 - o Located at well site initially, possibly moved to other, more centrally located area in the near future

Storm Water Management Plan

Stormwater management and erosion control practices will be implemented during construction, operations and reclamation (Storm Water Prevention Plan [SWPP])

Waste Management and Disposal

- Water-based drilling fluids (WBM), cuttings and other solids will be processed in a closed loop system; fluids will be re-used, solids will be transported for off-site disposal
- Oil-based drilling fluids (OBM), cuttings and other solids will be processed in a closed loop system; fluids will be re-used, solids will be transported for off-site disposal
- Oil-based drilling fluids (OBM) remaining after drilling will be shipped to the vendor, re-processed, and then used on subsequent drilling projects
- Other solid wastes will be accumulated and dispose of off-site at permitted landfill

Produced Water Management and Disposal

Produced water, and hydraulic fracturing fluids will be evaporated on-site; some fluids may be treated and re-used on-site or at other well locations. Concentrated waste fluids will be disposed of off-site at permitted disposal facility

Construction Materials

- Fill material and Aggregate obtained from local sources
- Top Soil temporarily stockpiled at perimeter of well pad and along construction corridors for subsequent use during reclamation

Reclamation

Areas temporarily disturbed during construction, and well drilling, completion and testing will be reclaimed to original conditions, as soon as is practical and in consultation with the surface owner

- O Disturbed areas will be re-contoured to match existing topography
- O Topsoil salvaged during construction activities will be spread to a minimum thickness of 6 inches
- O Reclaimed areas will be planted with seed mixture recommended by local Soil Conservation Service and/or BLM staff, and approved by surface owner
- Areas disturbed during construction and subsequent oil & gas production will be reclaimed to original conditions, as soon after oil & gas production ceases as is practical, and in consultation with the surface owner

Other Information

• Construction and operation of an oil & gas well in Guadalupe County, New Mexico does not require a special use permit or waiver from the County

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LATIGO RANCH #3-3 LOCATED IN GUADALUPE COUNTY, NEW MEXICO SECTION 3, T10N, R23E, N.M.P.M.

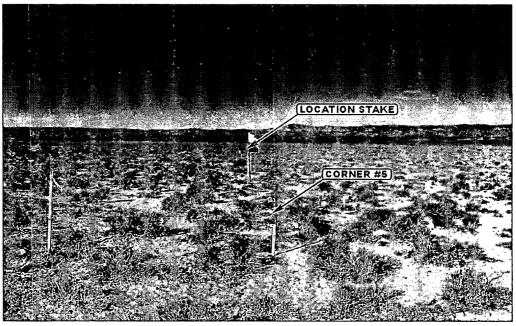


PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKE

CAMERA ANGLE: SOUTHERLY

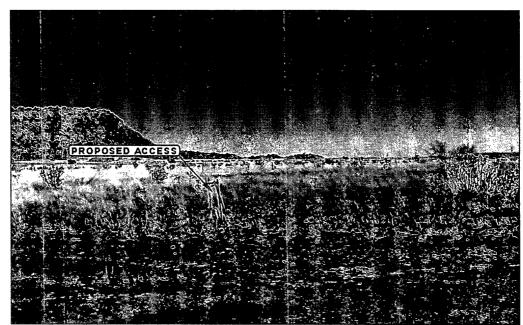


PHOTO: VIEW FROM BEGINNING OF PROPOSED ACCESS

CAMERA ANGLE: EASTERLY



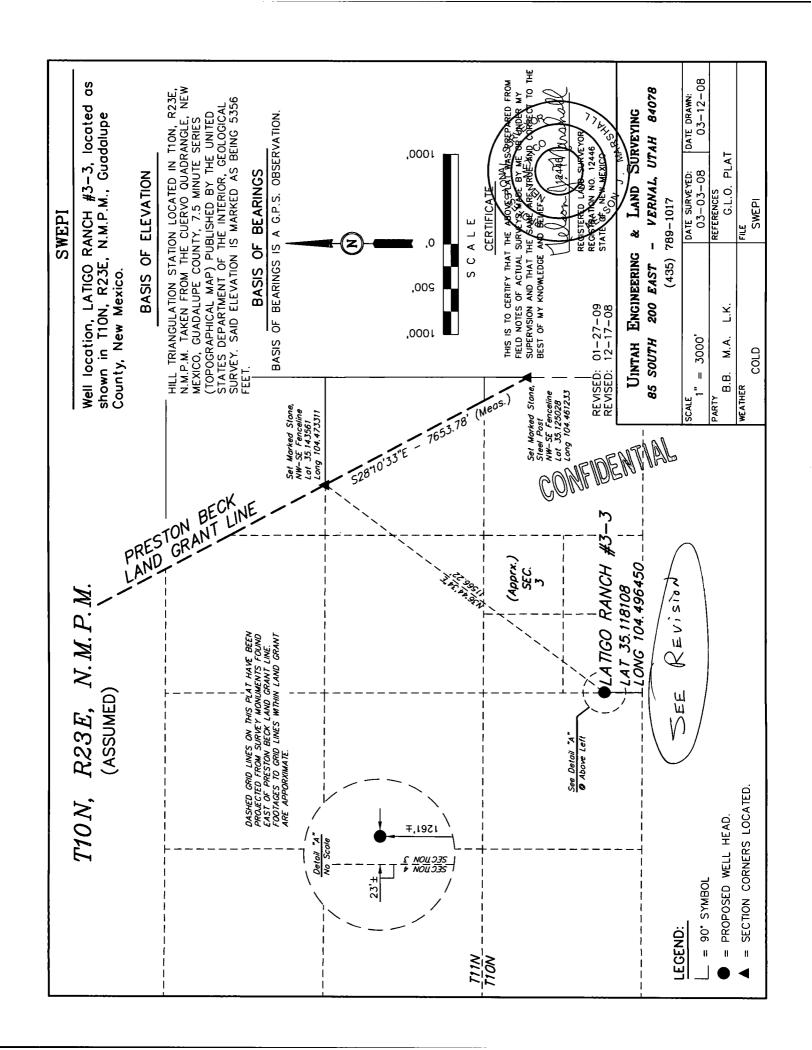
Uintah Engineering & Land Surveying 85 South 200 East Vernal, Utah 84078 (435) 789-1017 * FAX (435) 789-1813

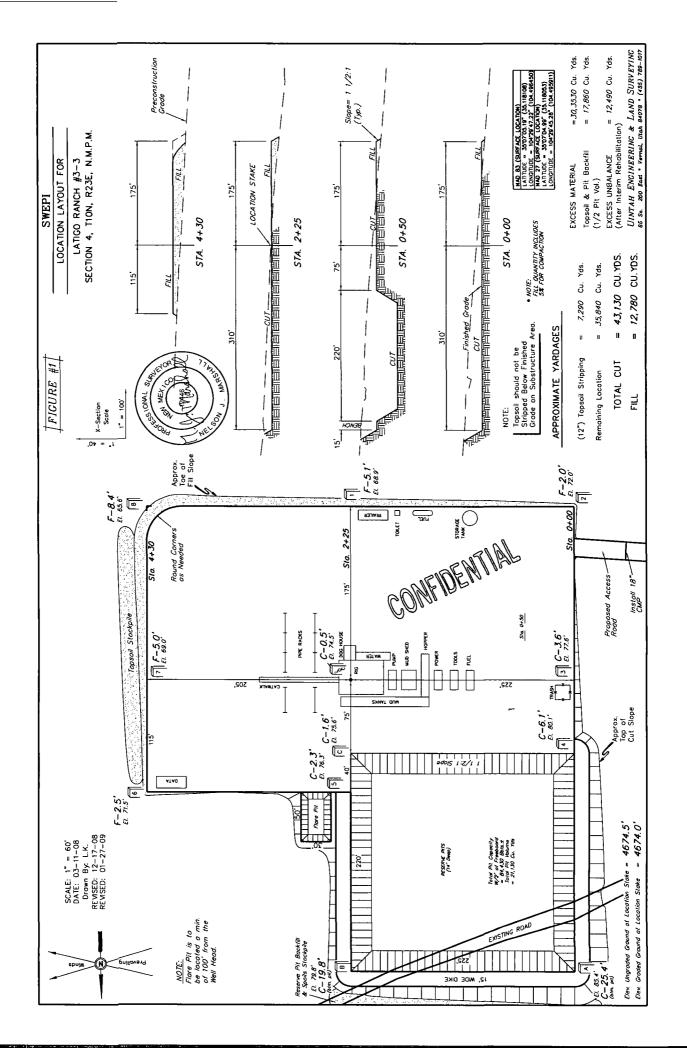
LOCATION PHOTOS

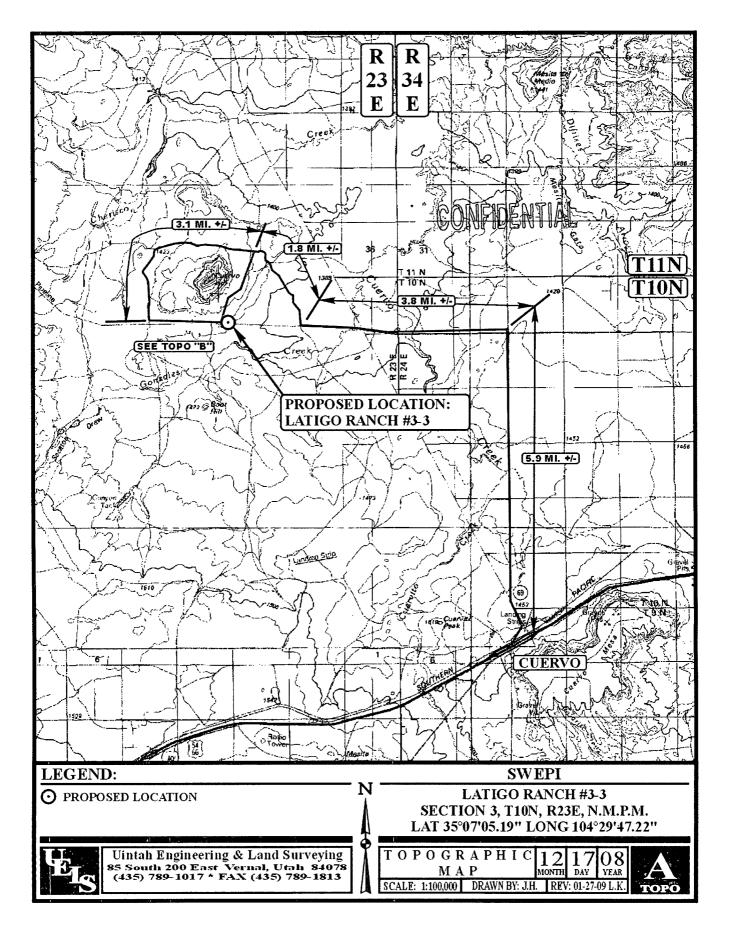
12 17 08 MONTH DAY YEAR

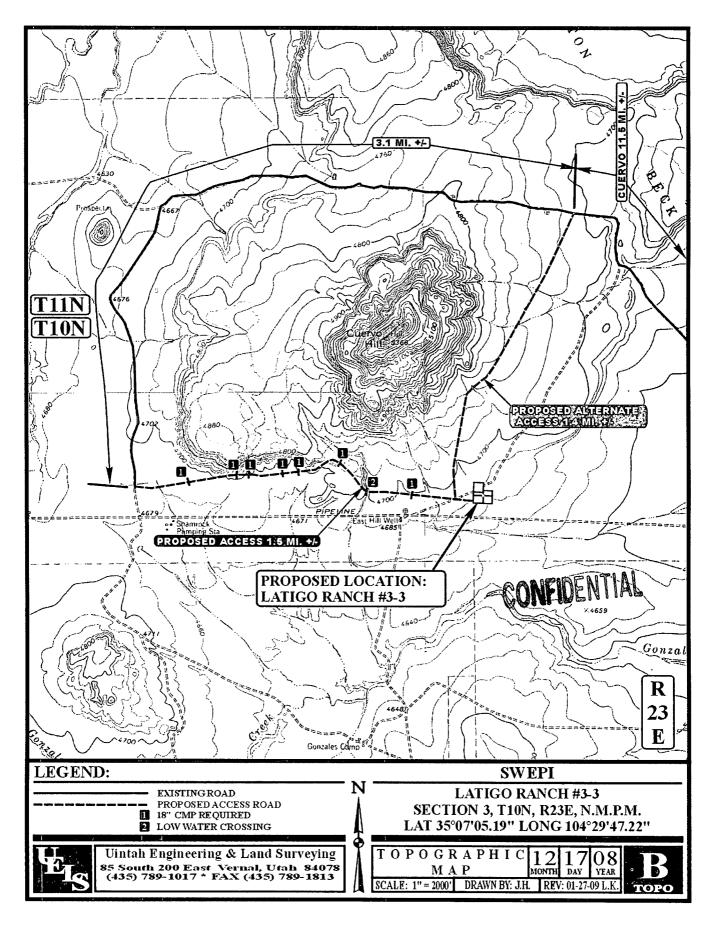
РНОТО

TAKEN BY: N.H. DRAWN BY: J.H. REV: 01-27-09 L.K.









<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240

<u>District II</u> 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 & Natural Resources Department OIL CONSERVATION DIVISION

1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-102 Revised October 12, 2005 Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies

☐ AMENDED REPORT

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1			² Pool Code		³ Pool Name					
30-0	0138									
⁴ Property Code			⁵ Property Name						⁶ Well Number	
37165					Latigo 3-3					
7 OGRID I	No.	⁸ Operator Name							⁹ Elevation	
2500	36		SWEPI LP						4674.0 graded	
					¹⁰ Surface	Location				
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line Count		
K	3	10N	23E		1261+/-	South	23+/-	West	Guadalupe	
			11 Bc	ottom Hol	le Location It	f Different Fron	n Surface			
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County	
12 Dedicated Acres	3 Joint o	r Infill 14 Co	nsolidation	Code 15 Ore	der No.				-	
160.00				1						
										

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.

16 See Attached Map - Well Location, Latigo Ranch #3-3	CONFIDE	NTIAL	17 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 or has a right to drill this well at this 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 enteredity the division. Signature Michael L. Bergstrom Printed Name
			18 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 supervision, and that the same is true and correct to the best of my belief.
			Date of Survey Signature and Seal of Professional Surveyor: Certificate Number

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

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-144 June 1, 2004 and production facilities, submit to

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure Is pit or below-grade tank covered by a "general plan"? Yes \(\subseteq \text{No} \subseteq \)

Type of action: Registration of a pit or below-grade tank 🛮 Closure of a pit or below-grade tank 🗖 Telephone: (303) 222-6347 e-mail address: michael.bergstrom@shell.com Operator: _SWEPI LP Address: P.O. Box 567, Houston, TX 77001 (Local contact: Shell Exploration & Production Company, 4582 S. Ulster St. Pkwy., Suite 1400, Denver, CO 80237) Facility or well name: Latigo Ranch 3-3 API#: 30-019-20138 U/L or Qtr/Qtr K Sec 3 T 10N R 23E County: <u>Guadalupe</u> Latitude <u>35.118108</u> Longitude <u>104.496450</u> NAD: 1927 <u>1983 X</u> Surface Owner: Federal ☐ State ☐ Private ☒ Indian ☐ Pit Below-grade tank CONFIDENTIAL Type: Drilling ☑ Production ☐ Disposal ☐ Volume: ____bbl Type of fluid: _ Workover ⊠ Emergency □ Construction material: Lined Unlined Double-walled, with leak detection? Yes If not, explain why not. Liner type: Synthetic ⊠ Thickness 20 mil Clay □ Pit Volume _84,430_bbl Less than 50 feet (20 points) Depth to ground water (vertical distance from bottom of pit to seasonal 50 feet or more, but less than 100 feet (10 points) high water elevation of ground water.) 100 feet or more (0 points) Wellhead protection area: (Less than 200 feet from a private domestic Yes (20 points) water source, or less than 1000 feet from all other water sources.) (0 points) Less than 200 feet (20 points) Distance to surface water: (horizontal distance to all wetlands, playas, 200 feet or more, but less than 1000 feet (10 points) irrigation canals, ditches, and perennial and ephemeral watercourses.) 1000 feet or more (0 points) 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 remediation start date and end date. (4) Groundwater encountered: No 🗌 Yes 🔲 If yes, show depth below ground surface _______ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations. Additional Comments: See Attached Map - Location Layout for Latigo 3-3, for proposed design and specifications for pits. 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 🖾, a general permit 🗔, or an (attached) alternative OCD-approved plan 🗔. Date: <u>2/9/200</u>9 Signature // /www. Printed Name/Title Michael L. Bergstrom 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

SEE REVISION