SURFACE USE PLAN

30-015-38987

1. Existing Roads:

The OCD Form C-102, Survey Plat, shows the proposed well site as staked.

<u>Directions</u> to the well site are as follows: The turn off to the well site is on Rock Daisy Road, (County Road #23) which is approximately 15 miles north of Carlsbad, NM on HWY 249, the Artesia HWY. From the intersection of St. Hwy 249 and St. Hwy 23 (Rock Daisy Road), go west on County Rd #23 approximately 2.1 miles. Turn right and follow proposed road survey stakes north approximately 3019 feet. This location is approximately 212 feet northeast.

<u>The 600x600</u> map shows the survey of the anticipated Access Road to the well location. The survey has directions to location as well. All existing roads will be maintained in a condition to or better than the current conditions. Any new roads will be constructed to BLM specifications.

<u>A Vicinity Map</u> is attached indicating township, range Rock Daisy Road and U.S. Hwy 285 (Seven Rivers Hwy) running north from Carlsbad, NM to Artesia, NM. Rock Daisy Road is approximately 15 miles north of Carlsbad, NM.

A 1-Mile Radius map encompasses the relation to a horizontal wellbore.

2. <u>Planned Access Roads:</u> There is 3019 feet of proposed access road onto the arch-survey location.

3. Locations of Existing Wells in a One-mile radius -

- 1. Water Wells None known.
- 2. Disposal wells None known.
- 3. Drilling wells None known.
- 4. Producing wells- See 1-Mile Radius Map.
- 5. Abandoned wells See 1-Mile Radius Map.

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4. <u>If a completion on this well is a producer</u>, <u>Marshall & Winston Inc.</u> will furnish maps or plats showing on site facilities or off site facilities if needed. This will be accompanied by a Sundry Notice.

5. Location and Type of Water Supply:

Water will be purchased from the rancher's water wells trucked over the access roads. Other sources of water may be needed, if so, the route access roads will be used.

6. Source of Construction Material:

Construction material may be obtained from Marshall and Winston's surface. If additional material is needed, it will be purchased from a local source. Material will be transported over the access routes as shown on attached surveys and maps.

7. Methods of Handling Waste Material:

- A. Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state- approved disposal facility.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks
- D. Sewage from any living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Drilling fluids will be contained in the steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. The primary anticipated disposal site is <u>Gandy Marley Incorporated</u>, <u>Route 45 Crossroads</u>, <u>Hwy 380</u>. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8. Ancillary Facilities:

A. No camps or airstrips to be constructed.

9. Well Site Layout:

- A. The drilling rig layout diagram is attached.
- B. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
- C. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- D. If the well is a producer, those areas of the location not essential top production facilities will be reclaimed and seeded per BLM requirements.

10. Plans for Restoration of Surface:

Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be notified in certain circumstances to prevent inundation of the location's pad and surface facilities.

After the area has been shaped and contoured, topsoil form the spoil pile will be loaced overt the disturbed area to the extent possible. Re-vegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be re-contoured to match the existing terrain. Topsoil will be spread to the extent possible. Re-vegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required form production facilities.

11. Other Information:

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly Yucca, Mesquite and Shin Oak.
- B. The well site is on the surface owned by Marshall and Winston Incorporated. The land is used mainly for cattle ranching, horse grazing and oil and gas production.
- C. An archaeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
 - D. There is no residential dwelling within 1 ½ miles of this location.
- 12. <u>Surface and Mineral Ownership:</u> The surface is owned by Marshall and Winston Incorporated, P.O. Box 50880, Midland, TX, 79710-0880 The minerals are owned by the United States and is managed by the BLM.

10xm of

Lessee's or Operator's Representative and Certification

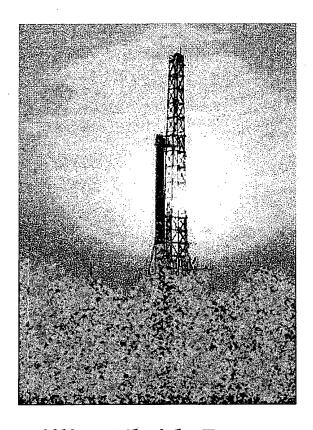
As required for APD approval in accordance to Onshore Orders 1, I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route: that I am familiar with the conditions which currently exist; that the statements made in this plan are, the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Marshall & Winston Incorporated 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 false statement.

Name and Title: Tenon D. Syn	Dated: /-20-20//
RE: Peacemaker 25 Fed 1 H	



MI SWACO

Marshall & Winston Peacemaker Federal 22 Section 25, T-19-S, R-19-E Eddy County, New Mexico



Drilling Fluids Program

Prepared for Mr. Gabe Herrera

Date prepared: December 14, 2010

Prepared by: Todd Passmore





December 14, 2010

Mr. Gabe Herrera 6 Desta Drive Suite 3100 Midland, TX 79705

Dear Mr. Herrera,

Thank you for giving M-I SWACO this opportunity to serve you by submitting the enclosed drilling fluids program for your upcoming Peacemaker Federal 22 to be drilled in Section 25, T-19-S R-25-E, Eddy County, New Mexico. I sincerely hope this information will aid you in planning your drilling operation.

To prepare this program, we have used well data from several wells located in the vicinity of your proposed location. This information is included in the reference wells section of this program for your use and evaluation. We recommend a Gel/Water spud mud to surface casing point at 1,000 feet. There is a good possibility you will encounter lost returns during the surface section in the Grayburg/San Andres formations. We recommend using M-I Gel pill sweeps to ensure a clean hole if dry drilling becomes necessary. Below surface casing, drill out with 8.7 lb/gal Cut-Brine Water. From 1,000 feet to 3,800 feet we recommend Cut Brine Water. At 3,600 feet mud up with a Duo Vis/Poly Pac R system for <10cc fluid-loss and 36 sec/qt funnel for logging operations, we also recommend using this mud system to build the curve and throughout the lateral section as well. It also may be necessary to add Oil, KCL, or Glass Beads while building the curve to assist slide drilling thru a hard shale section.

We at M-I SWACO, would be pleased to be awarded the privilege of supplying the drilling fluid for your well and will strive for your complete satisfaction in both engineering service and product performance. Should you have any questions or comments concerning our recommendations or if we may be of further service, please do not hesitate to contact us at anytime.

Sincerely,

Todd Passmore Tech Service Engineer



EXECUTIVE SUMMARY

- In reaching your objectives successfully, M-I SWACO will take a clear and precise drilling plan coupled with competent and experienced personnel with a personal goal in mind "To Succeed". Such will be the posture of M-I SWACO while working with Marshall & Winston on this project.
- M-I's primary objective will be to assist Marshall & Winston technically, competently as well as in a timely manner in order for all targets to be achieved. Our primary concern will be to perform safely and also apply the best drilling fluids practices for every interval of this well.
- Major challenges in this well will be:
 - A) Proper Well Hydraulics and Hole Cleaning.
 - B) Minimizing mud losses while drilling and running casing.
- □ Total mud related costs are estimated at \$18,000-23,000. This estimate is based on the M-I pricing proposal contained in this program.
- \Box The total estimated drilling time is fifteen to twenty (15 20) days.



November 13, 2009

Mr. Gabe Herrera Marshall and Winston

6 Desta Drive, Suite 3100 Midland, TX 79705

Re: Drilling Fluid Bid for West Texas / New Mexico Wells to April 30, 2009

WATER-BASE MUD PRODUCTS with SERVICE - FOB WAREHOUSE

Product	Unit Size	Discounted Price
M-I Wate Bulk 4.1 sg	ton	\$ 146.36
M-I Wate 4.1 sg	100 lb	\$ 8.68
Federal Bentonite	100 lb	\$ 8.94
Salt Gel	50 lb	\$ 9.01
MF-55	5 gal	\$ 97.62
Poly-Plus	5 gal	\$ 95.63
Defoam A	5 gal	\$ 89.83
Polypac	50 lb	\$ 145.05
Duovis	25 lb	\$ 184.71
Lime	50 lb	\$ 6.25
Caustic Soda	50 lb	\$ 29.14
Soda Ash	50 lb	\$ 12.68
My Lo Jel	50 lb	\$ 27,42
Yellow Starch	50 lb	\$ 18.03
Cottonseed Hulls	50 lb	\$ 9.01
Fiber Plug	40 lb	\$ 8.60
Paper	40 lb	\$ 10.50
Fiber Seal	40 lb.	\$ 15.19

45% Discount on all other products listed on August 15, 2008 Price List (attached)

Pallets and Shrink Wrap - \$12/each
Plastic - \$ 50/roll
24 Hour Engineering Service - \$ 700/Day
Trucking Service at Published Rates Provided by LDI

Thank you for your consideration.

Sincerely,

M-I LLC.

Mike Prewit

Midland Regional Manager



KEY ISSUES

Lost Circulation - Causes and Preventative Measures

□ Mechanical:

> Improper hydraulics, excessive pump rates and annular velocities (causing high ECD's)

□ Drilling Practices:

- > Increasing pump rates too rapidly after connections and trips
- ➤ Raising and lowering the pipe too fast (Swab/Surge)
- Excessive penetration rates which result in high cuttings concentration in the annulus

☐ Hole Conditions:

- > Depleted sand zones
- > Slow penetration rates
- Excessive Drag and Torque
- ➤ Hole Stability

□ Preventive Measures:

- > Rotating the drill string when breaking circulation helps break the gels and minimize pump pressure surges.
- ➤ Bring the pumps up slowly after connections and periods of non-circulation. Plan to break circulation at 1 to 2 different depths while tripping in the hole.
- ➤ Additional LCM material (SAFE CARB fine, medium, and course and Mica) should be ordered and stored at location to combat losses.

Hole Cleaning Recommendations

- Rheology and hydraulics calculations will be run as needed and the mud properties will be adjusted as needed to maximize hole cleaning.
- □ Use the highest possible annular velocity to maintain good hole cleaning without inducing excessive ECD's. Annular velocity provides the upward impact force necessary for good cuttings transport.
- Control drill to manage difficult hole cleaning situations.
- As much pipe rotation as possible while drilling.
- □ Pump Hi-Viscosity sweeps at the current mud weight in the 12.25" and 8.75" OH sections, plan sweeps to cover 60′- 90′ of annular volume. Sweep should be pumped every 3 to 4 connections. Sweeps should be monitored upon return
- DO NOT AT ANY TIME HAVE MORE THAN ONE SWEEP IN THE HOLE AT A TIME.
- Circulate at least one bottom up prior to pulling out of the hole.



Project Summary with Well bore Geometry

-Casing Size	Jane Size	Casius intervals	There is	Viue System	s Mud Veight Merogs	Cum Lave
9- 5/8′′ 40#	Surface 12.25"		1,000′	Spud Mud	8.4	2
	8-3/4"				8.7	
			3,600′ Mud Up 3,800′	Duo-Vis / Poly Pac R	9.1	5



Project Summary with Well bore Geometry

Casing Size		Casing Coler		Muld System	Mud Weight (pog)	Pays .
9.625" 40# At 1,000'	Surface		v.	·		
	9.625"			COLOR OF SERVICE SERVICES		الله الله الله الله الله الله الله الله
	8.75"					
	KOP at 2,139			,		
5.5" 17# To TD TVD 2,730'			Drill to 5,052' MD / 2,730' TVD 7.875" hole size	Duo-Vis / Poly Pac R	9.0 9.3 Or as hole dictates	10
2,730 MD 5,052′	7.875" lateral				·	



12.25" OH Interval Procedures

0′ MD – 1,000′ MD							
12.25" Open Hole - 9.625 " Casing							
Drilling	;Fluid Syste	m High V	iscosity S	Sweeps / Fr	esh Water	Spud Mud	
	Key-Products M-I Gel , Lime						
43	Linear & Dual Motion Shakers, Desander, Desilter, De-Watering Equipment						
Poter	Potential Problems Hole Cleaning, Lost Circulation						
		Inte	rval Drilling	g Fluid Prop	erties		
Depth (MD ft)	Mud Wt. (ppg)	Funnel Viscosity (sec/qt)	Plastic Viscosity (cp)	Yield Point (lb/100ft²)	API Fluid Loss (ml/30min)	Hardness (Ca ²⁴)	рĦ
0'- 1,000'	8.5 - 8.8	36 - 40	6 - 10	6 – 8	NC	>400	10.0-10.5

Interval Objective:

Drill a 12.25" hole to 1,000' MD without mud losses while cleaning the hole. Set a full string of 9.625" casing to 1,000' and cement. To successfully utilize the M-I SWACO equipment to de-water the mud while drilling. This will lower the solids percentage while reclaiming water.

Interval Procedures:

Fluid

- This interval should be drilled with a low solids non-dispersed spud mud.
- Increase the funnel viscosity to 36-40 sec/qt. with M-I Gel and lime prior to drilling.
- Gravel sections and sands can be troublesome while drilling surface section. Viscosities in the 50 sec/qt maybe necessary to control the sand and gravel cuttings.
- The continuous use of the rig de-sander, desilter, and dewatering equipment are recommended to minimize low gravity solids. In addition water additions are recommended to minimize the density from increasing and reduce pump wear.
- High viscosity sweeps should cover 60-90' of annular volume.
- Sweeps containing 8-10 ppb of drill paper should be pumped as needed for seepage loss.
- Possibility of loss circulation in the Grayburg/San Andres formation. If losses uncontrollable we
 recommend dry drilling to TD of casing point. Pump high viscosity bentonite sweeps to remove
 cuttings from bit.



8.75" OH Interval Procedures

1,000' MD - 3,800' MD 8.75" Open Hole								
Du	lling Flat	System Du	o-Vis / Po	ly-Pac-R				
	- Key	Products Salt	Driller, Sal	t Gel , Lime,	Duo-Vis, Pol	y-Pac-R, Ca	ustic	
	Solids Control Linear & Dual Motion Shakers, Desilter, De-Watering Equipment							
i i i i i i	Potential Problems. Hole Cleaning, Lost Circulation, Stuck Pipe							
		Int	erval Drilli	ng Fluid Pr	operties			
Depth	Mud Wt	Funnel *	Plastic Viscosity	Yield Point	API Eluid Loss	Hardness	рН	% Oil
(MD ft).	(ppg)	Viscosity	(cp)	(Ib/L00ft²)/	(ml/30min)	; (Ca'-)		
1,000'- 3,600' 3,600'-	8.4 – 9.1	32 – 34	1 – 4	1-4	N/C	>400	9.0- 10.0 10.0-	0%
3,800′	8.4 – 9.1	36 - 45	5 - 8	6 - 10	>10cc's	>400	10.5	0%

Interval Objective:

Drill the 8.75" hole from 1,000' to 3,800' MD without mud losses while cleaning the hole. To successfully utilize the M-I SWACO equipment to de-water the mud while drilling. This will lower the solids percentage while reclaiming water.

Interval Procedures:

Fluid

- Drill out below casing with existing fluid from surface section.
- As hole dictates add 10.0ppg Brine water to increase fluid density.
- Maintain pH with Caustic between 10.0 10.5.
- Pump 15 to 20 barrel High Viscosity sweeps. High viscosity sweeps should be pumped every 3 to 4 connections. Sweeps should be made up with Fresh Water, Soda Ash for hardness, and M-I Gel. Sweeps should be monitored upon return. Do not have more than 1 sweep in the hole at a time.
- Keep mud weights as low as hole conditions will allow.
- Mud up at 3,600' with a Duo-Vis/Poly-Pac-R to a 36-45 sec/qt and below 10cc's fluid loss for logging operations at 3,800'
- Prior to pulling out of hole circulate at least one bottom up to determine if hole is clean.



8.75" / 7.875" OH Interval Procedures

2,139′ MD - 5,052′ MD 8.75″ / 7.875″ Open Hole - 5.5″ Casing							
Drilling	Fluid Syste	m Duo-V	is / Poly-l	Pac-R			
	Key Produc	ts Cut Brin	e, Poly-Pac-	R, Duo-Vis, (Caustic		
i i i i i i	Solids Control Linear & Dual Motion Shakers, Desilter, De-Watering Equipment					ment	
Poten	tial Probler	n s Hole Cle	aning, Lost (Circulation, S	tuck Pipe		- 110
Depth (MD ft)	Mud Wt. (ppg)	Funnel Viscosity (sec/qt)	Plastic Viscosity (cp)	Yield Point (lb/100ft²)	API Fluid Loss (ml/30min)	Hardness (Ca²+)	pН
2,139'- 5,052'	8.7 – 9.1	40 - 45	7-9	10 – 12	< 10cc's	< 400	10.0 – 10.5

Interval Objective:

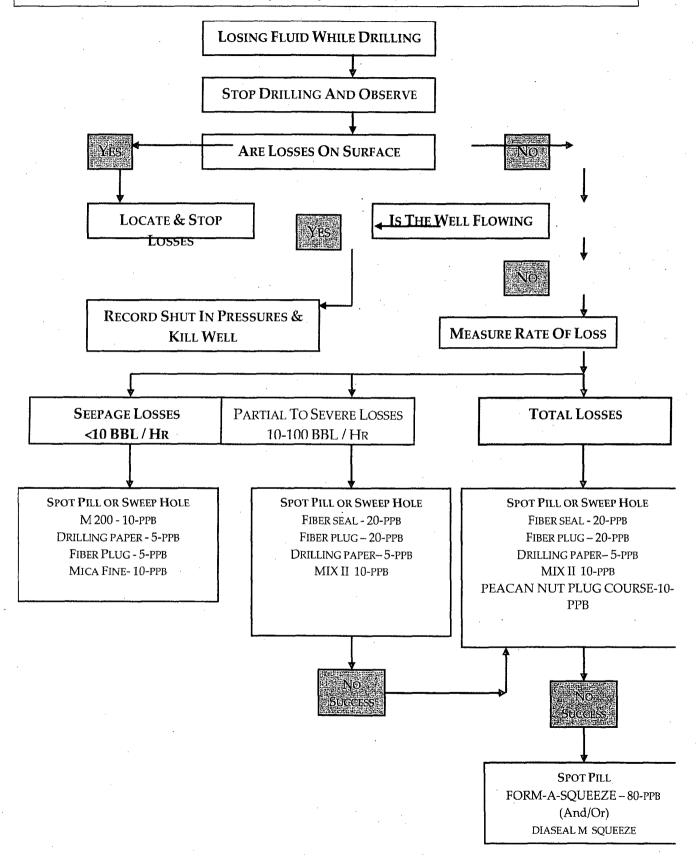
Set cement plug in existing 8.75" hole at 2,140'+/-. Kick off and drill the 8.75" curve to 2,730' TVD 3,067' MD without mud losses while cleaning the hole. Drill lateral section with 7.875" bit to TD of 5,052' MD.

Interval Procedures:

Fluid

- Keep mud weights as low as hole conditions will allow.
- Maintain pH with Caustic between 10.0 10.5.
- Water additions are recommended to maintain fluid density, minimize LGS and reduce pump wear.
- Kick off at 2,139' with 8.75" and build curve with existing fluid from previous section.
- It may be necessary while drilling the curve to add Oil, KCL, or Glass Beads to the system to assist drilling. This will aid in lubricity if needed.
- Land curve at 3,067′ MD and pick up 7.875″ bit to drill lateral section.
- Pump 15 to 20 barrel High Viscosity sweeps. High viscosity sweeps should be pumped as need to ensure hole proper hole cleaning.
- If torque and drag become excessive it may be necessary to increase the low end rheology and or fluid density with Brine or barite to help stabilize the hole.
- Before TOOH for casing operations pump high viscosity sweep and circulate two bottoms up to ensure a clean hole before casing operations.







Contacts

DISTRICT MANAGER: LOCATION TELEPHONE NUMBER E-MAIL

EPS MANAGER: LOCATION TELEPHONE NUMBER E-MAIL

ENGINEER MANAGER: LOCATION TELEPHONE NUMBER E-MAIL

SR ENGINEER LOCATION TELEPHONE NUMBER E-MAIL

DFS ENGINEER LOCATION TELEPHONE NUMBER E-MAIL

TECH SERVICE ENGINEER
LOCATION
TELEPHONE NUMBER
E-MAIL

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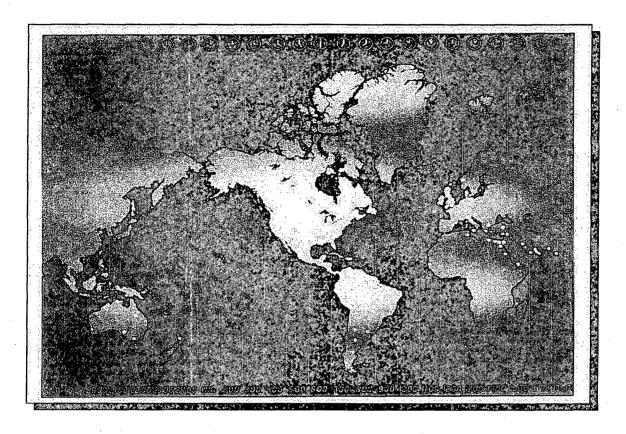
Don Hammer Hobbs, New Mexico 575-390-3440 dhammer@miswaco.com

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mhammer@miswaco.com

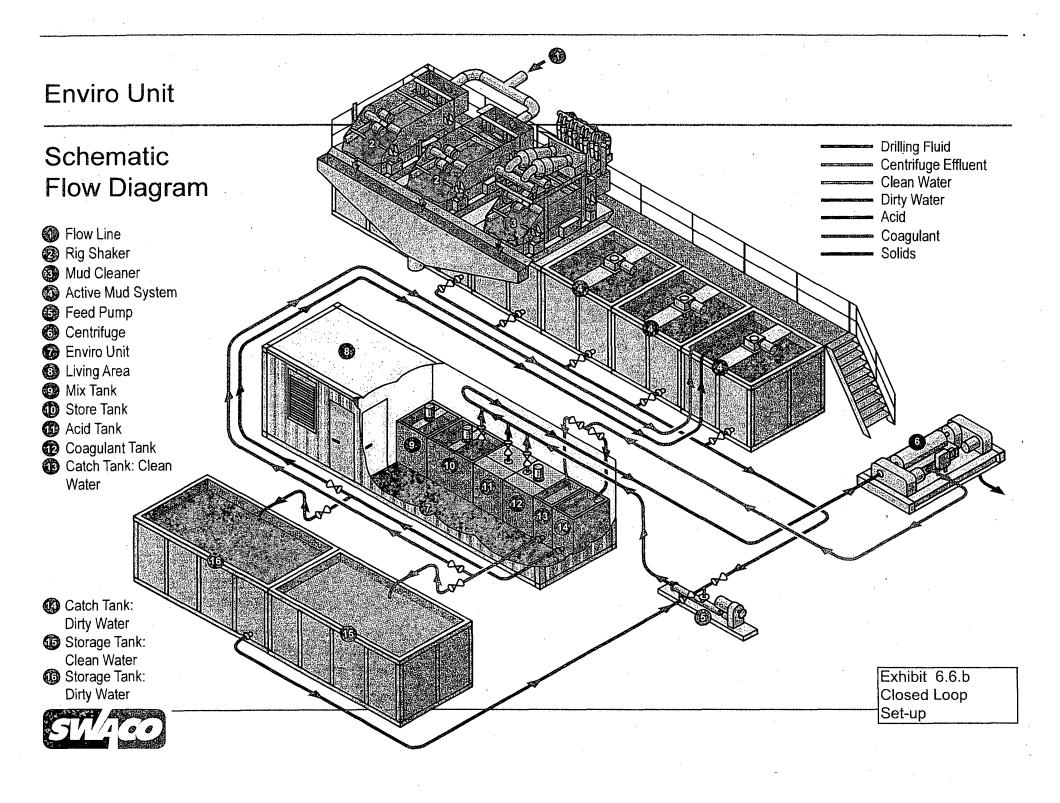
Todd Passmore
Midland, Texas
432-683-2065
tpassmore@miswaco.com

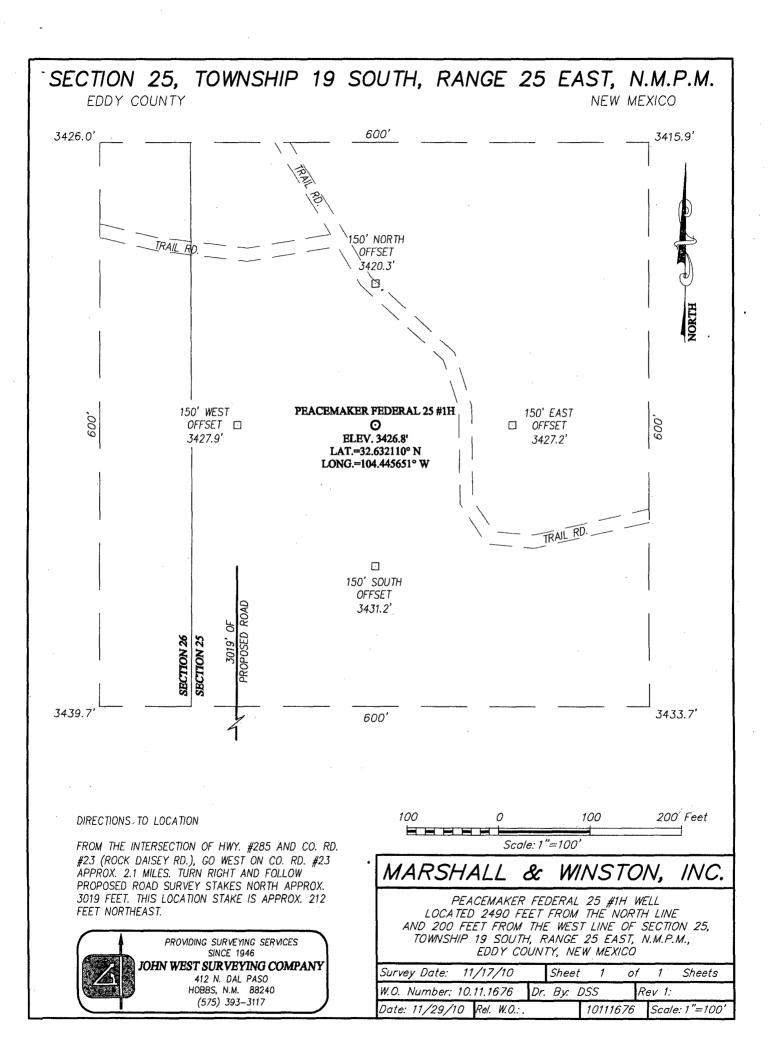


DISCLAIMER

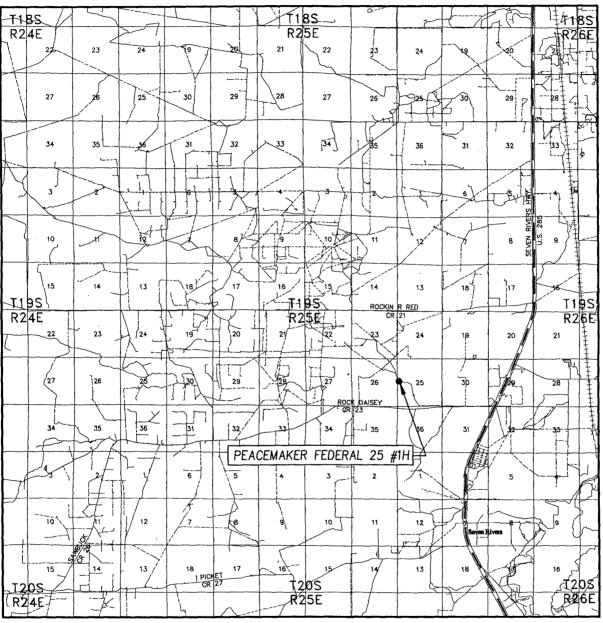


This suggested program is advisory only and may be rejected in the sole discretion of any and all parties receiving it. In addition all parties receiving this program recognize, agree, and acknowledge that M-I SWACO has no care, custody or control of the well, the drilling equipment at the well, or the premises about the well. Also, there are obviously many conditions within and associated with a well of which M-I SWACO can have no knowledge and over which it does not and cannot have control. Therefore, M-I SWACO shall not be liable for the failure of any equipment to perform in a particular way or the failure to obtain any particular results from carrying out this program by any party receiving it. Furthermore, the owner and operator of the well and the drilling contractor in consideration of the recommendations contained in this suggested program agree to indemnify and save M-I SWACO harmless from all claims and costs for loss, damage or injury to persons or property including, without limitations: subsurface damage, subsurface trespass or injury to the well or reservoir allegedly caused by M-I SWACO operations or reliance by anyone upon this program unless such personal injuries or damage shall be caused by the willful misconduct or gross negligence of M-I SWACO.



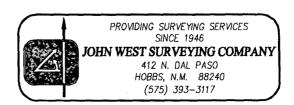


VICINITY MAP



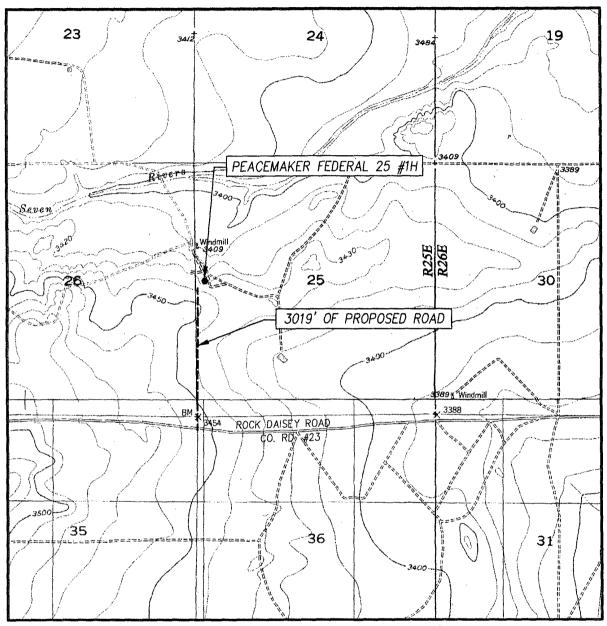
SCALE: 1" = 2 MILES

SEC. <u>25</u> TWP. <u>19-S</u> RGE. <u>25-E</u>					
SURVEY N.M.P.M.					
COUNTY EDDY STATE NEW MEXIC	<u>0</u>				
DESCRIPTION 2490' FNL & 200' FW	L				
ELEVATION3427'	_				
OPERATOR MARSHALL & WINSTON, INC.	_				
LEASE PEACEMAKER FEDERAL 25					





LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

SEC. 25 TWP. 19-S RGE. 25-E

SURVEY_____N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2490' FNL & 200' FWL

ELEVATION 3427'

OPERATOR MARSHALL & WINSTON, INC.

LEASE PEACEMAKER FEDERAL 25

U.S.G.S. TOPOGRAPHIC MAP

DAYTON, N.M.

CONTOUR INTERVAL: DAYTON, N.M. - 10' SEVEN RIVERS, N.M. - 10'

