OCD-HOBBS

HOBBS OCD

SEP 21 2012

RECEIVED

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.

6 If Indian, Allotee or Tribe Name

1a Type of work ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No
NM71067B

1b. Type of Well ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No (30507)
YOUNG DEEP UNIT #40H

2 Name of Operator
NADEL AND GUSSMAN HEYCO, L.L.C. (258462)

9 API Well No.
30-025-40820

3a Address **P.O. BOX 1936**
ROSWELL NM 88202

3b. Phone No. *(include area code)*
575-623-6601

10 Field and Pool, or Exploratory KZ
YOUNG N. BONE SPRING (65350)

4 Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **510' FSL, 330' FEL, UL P; SEC 9, T18-S, R32-E**
At proposed prod. zone **BHL: 510 FSL, 660 FEL, UL P, SEC 10, T-18-S, R-32-E**

11 Sec., T R M. or Blk. and Survey or Area
SECTION 9-10, T-18-S, R-32-E

14 Distance in miles and direction from nearest town or post office*
7 MILES SOUTH OF MALJAMAR NEW MEXICO

12 County or Parish
LEA

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any)	16 No. of acres in lease	17 Spacing Unit dedicated to this well
510' / **510'**	**Total 3 leases: 320**	**160**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19 Proposed Depth	20 BLM/BIA Bond No. on file
450'	**13,850 MD 9,144 TVD**	**NM# 000520**
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3807' GL	**07/15/2012**	**45 DAYS**

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, shall be attached to this form:

1. Well plat certified by a registered surveyor
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer

25 Signature	Name *(Printed/Typed)*	Date
	JASON GOSS	**04/10/2012**
Title **DRILLING ENGINEER**		
Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)* /s/ Don Peterson	Date SEP 18 2012
Title for **FIELD MANAGER**	Office **CARLSBAD FIELD OFFICE**	

Application approval 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.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, 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 page 2)

Capitan Controlled Water Basin

NO. 5 Lease # NMNM - 17235 40 Acres

Lease # NMNM - 22642 200 Acres

Lease # NMNM - 40454 80 Acres

Approval Subject to General Requirements & Special Stipulations Attached

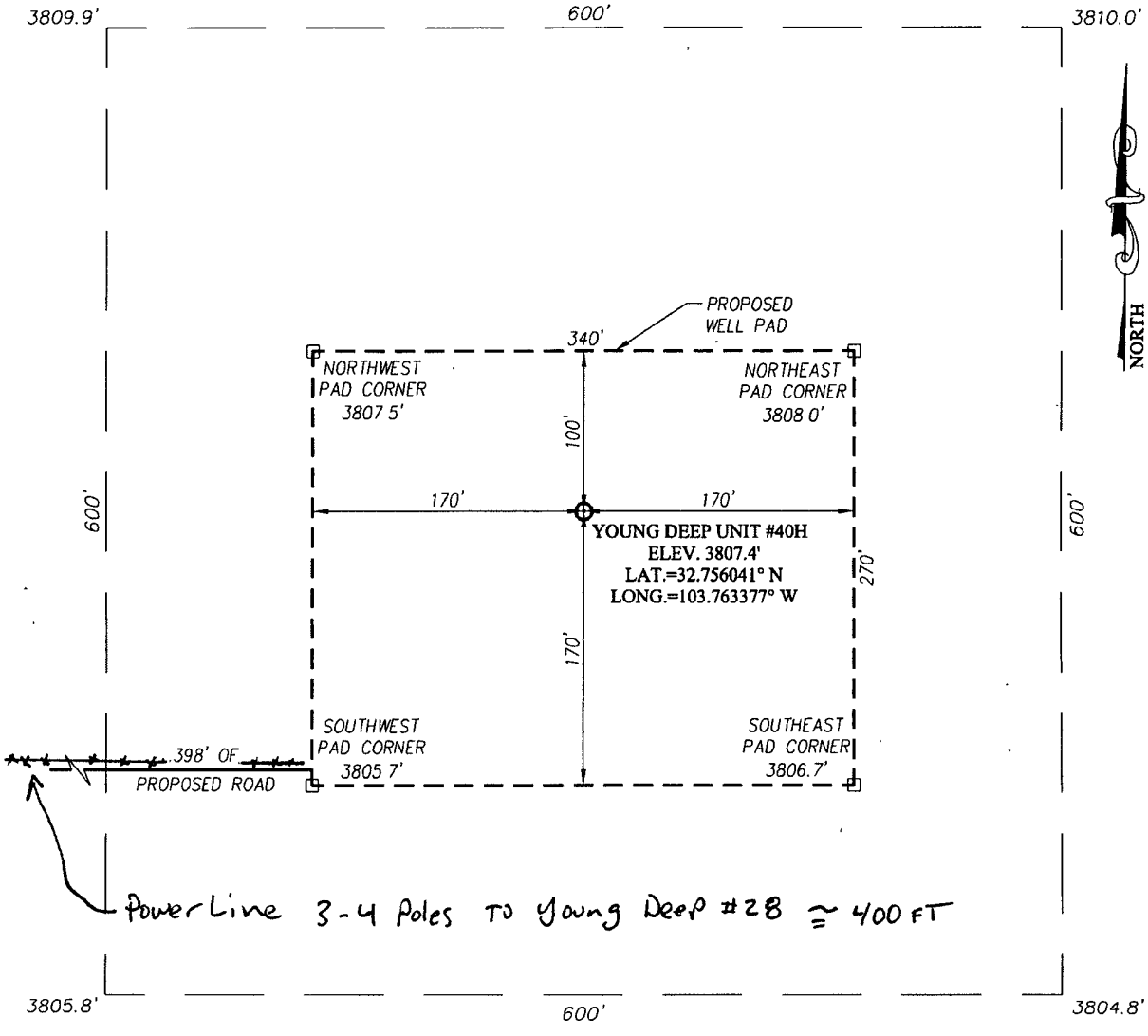
EG 10-16-2012

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

OCT 18 2012

SECTION 9, TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M.

LEA COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST HWY. 529 AND CO RD. L-126 (MALJAMAR RD.), GO SOUTH ON CO R.D L-126 APPROX 1.7 MILES. TURN LEFT AND GO SOUTHEAST APPROX. 1.0 MILE. TURN LEFT AND GO NORTHEAST APPROX. 0.5 MILES TURN RIGHT AND GO SOUTH APPROX. 0.3 MILES TO THE EXISTING YOUNG DEEP UNIT #28 WELL. TURN LEFT AND FOLLOW PROPOSED ROAD SURVEY STAKES EAST APPROX. 398 FEET THIS LOCATION STAKE IS APPROX 233 FEET NORTHEAST

100 0 100 200 Feet

Scale. 1"=100'

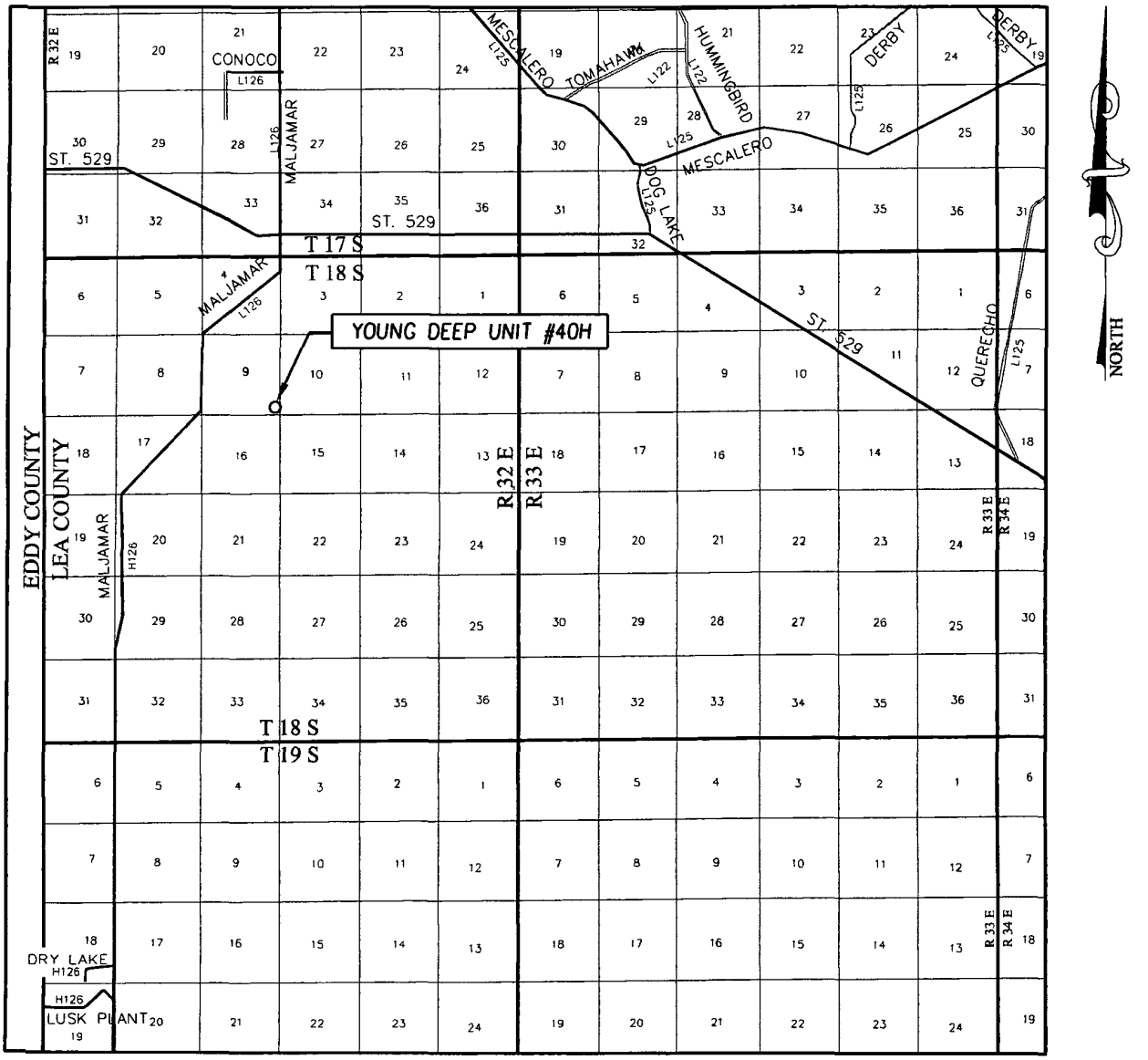
PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

NADEL AND GUSSMAN HEYCO, LLC.

YOUNG DEEP UNIT #40H WELL
LOCATED 510 FEET FROM THE SOUTH LINE
AND 330 FEET FROM THE EAST LINE OF SECTION 9,
TOWNSHIP 18 SOUTH, RANGE 32 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO

Survey Date: 9/27/11	Sheet 1 of 1 Sheets		
W.O. Number: 11.11.1969	Dr. By: DSS	Rev 1.	
Date: 10/25/11	Rel W.O. .	11111969	Scale: 1"=100'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 9 TWP. 18-S RGE. 32-E

SURVEY N.M.P.M

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 510' FSL & 330' FEL

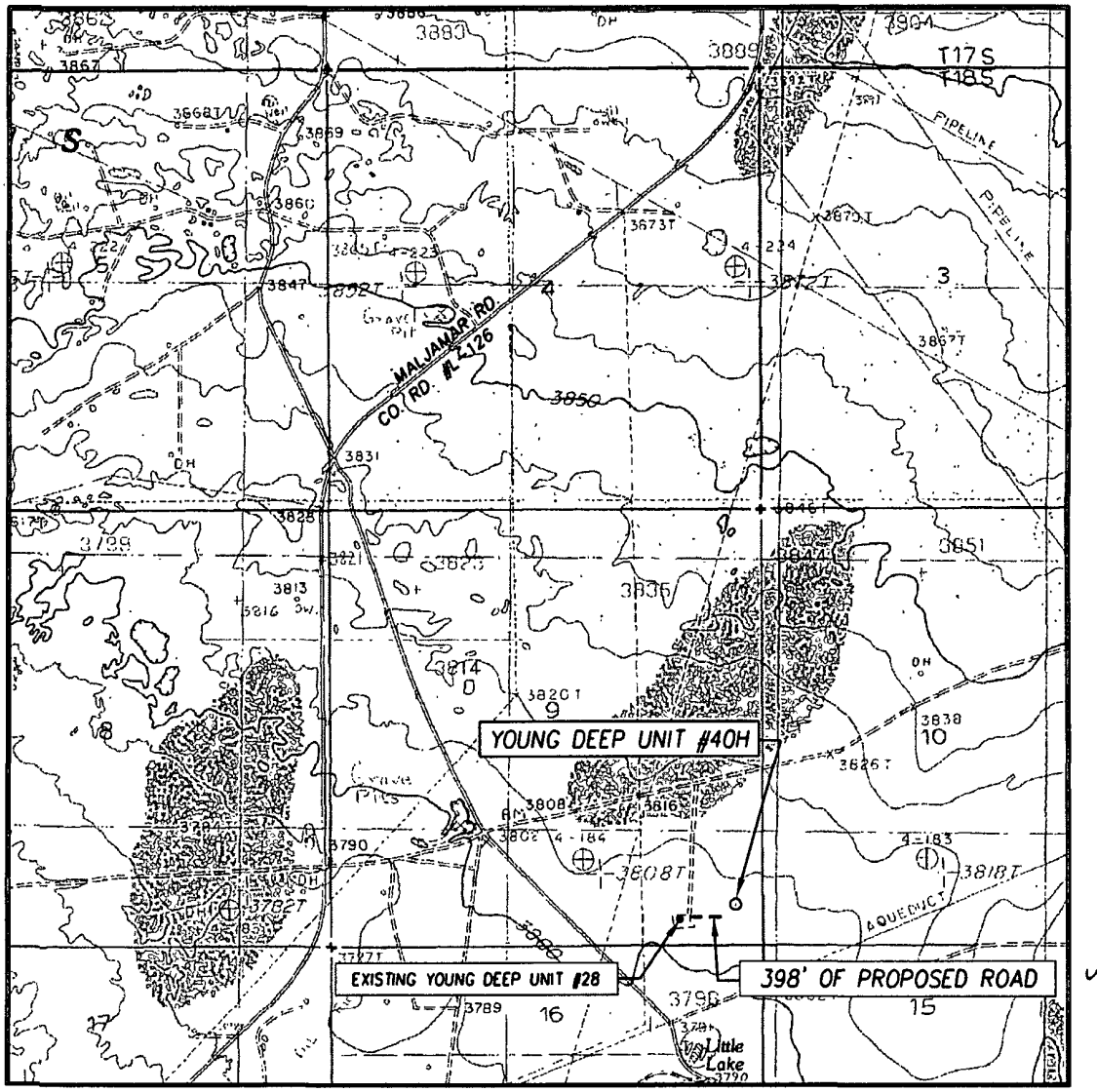
ELEVATION 3807'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC

LEASE YOUNG DEEP UNIT

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N DAL PASO
HOBBS, N M 88240
(575) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
MALJAMAR, N.M. – 10'

SEC 9 TWP. 18-S RGE. 32-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 510' FSL & 330' FEL

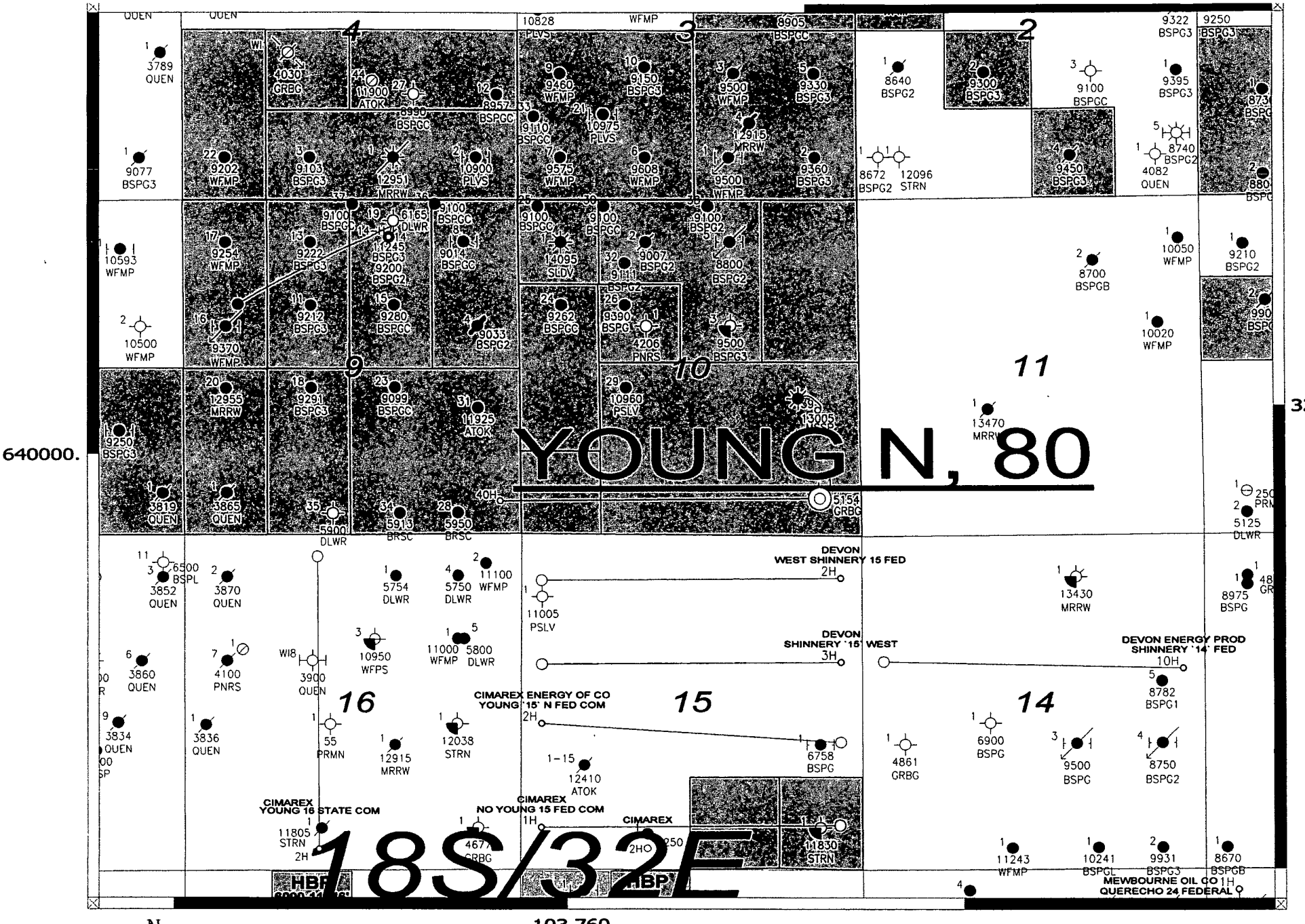
ELEVATION 3807'

OPERATOR NADEL AND GUSSMAN HEYCO, LLC.

LEASE YOUNG DEEP UNIT

U.S.G.S. TOPOGRAPHIC MAP
MALJAMAR, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117



NADEL and GUSSMAN HEYCO LLC

LEA COUNTY, SOUTH
Bone Spring 2nd Sand "C"
Subsea Structure

DRILLING AND OPERATIONS PLAN
NADEL AND GUSSMAN HEYCO, L.L.C.
YOUNG DEEP UNIT #40H

Surface: 510' FSL & 330' FEL
UL P, Sec 9, T-18-S, R-32-E
BHL: 510' FSL & 660' FEL
UL P, Sec 10, T-18-S, R-32-E
Lea County, New Mexico.

ELEVATION: GL 3,807'

GEOLOGICAL NAME OF SURFACE FORMATION: ALLUVIUM

Type of Well: Horizontal Oil well

PROPOSED DRILLING DEPTH: 13,850' MD, 9,144, TVD, Kick of curve at ~8,630', see directional plan: Exhibit #2,

TOPS OF IMPORTANT GEOLOGICAL MARKERS: TVD

Rustler	1170'
Top Salt	1360'
Base Salt	2495'
Yates	2740'
Seven Rivers	3130'
Queen	3845'
Grayburg	4425'
San Andres	4935'
Delaware	5160'
Bone Spring Ls.	6520'
1st Sand	8070'
KOP	8630'
2nd Sand	8681'
Bone Springs Target	9105'

Estimated Depth of Anticipated Water, Oil or Gas:

Rustler	1,170'	Water 0-800ft
Queen	3,845'	Oil
Delaware	5,160'	Oil
Bone Spring	6,520'	Oil

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water will be protected by setting 13 5/8" casing at 1200' and circulating cement back to surface, all other intervals will be isolated by 9-5/8" intermediate and 7" production casing.

CASING PROGRAM:

HOLE SIZE	CASING SIZE	WT./GRADE	THREAD/COLLAR	SETTING DEPTH	TOP CEMENT
	20"	94# H-40	8rd STC	120'	Surface
See COA 17.5	13 3/8" (new)	54.5# J-55	8rd STC	~~1200~~ 1240	Surface
12.25"	9 5/8" (new)	40# J-55	8rd STC	3130'	Surface
8.75"	7" (new)	26# P-110HC	8rd **BTC**	9,000'	2,630ft
6.125"	4 1/2" (new)	13.5# P-110HC	8rd **BTC** & LTC*	8,800'-13,850'	N/A**

* 4.5" casing: 450ft BTC/8rd in curve (8,800'– 9,250') and LTC 8rd in Lateral 9,250'- 13,850ft.
** Packer Plus completion 20 stages. No cement, packers and frac port open hole completion with liner hanger.
MINIMUM SAFETY FACTORS: **BURST 1.125** **COLLAPSE 1.125** **TENSION 1.8**

ALL CASING WILL BE NEW API APPROVED

CEMENT PROGRAM-ALL CEMENT BLENDS WILL BE TESTED TO BLM MINIMUM REQUIREMENTS.

A. **13 3/8"** **SURFACE**

CEMENT TO SURFACE **100% EXCESS OVER CALCULATED**

LEAD 750 SACKS CLASS "C" +4% BENTONITE +2% CACL +.25# CELLO-FLAKE+.25% DEFOAMER, 13.5 PPG, 1.75 YIELD

TAIL: 200 SACKS CLASS "C"+2%CACL+.25# CELLO-FLAKE+.25% DEFOAMER, 14.8 PPG, 1.35 YIELD

B. **9 5/8"** **INTERMEDIATE**

CEMENT TO SURFACE **50% EXCESS OVER CALCULATED**

LEAD 700 SACKS CLASS "C" 35/65 +6% BENTONITE+5% SALT+.25% DEFOAMER 12.8 PPG, 1.9 YIELD

TAIL 200 SACKS CLASS "C" + .25% DEFOAMER, 14.8 PPG, 1.33 YIELD

C. **7"** **PRODUCTION**

CEMENT TO 2,630FT (WILL RUN FLUID CALIPER) **25% EXCESS OVER FLUID CALIPER, OR 50% OVER CALCULATED.**

LEAD 725 SACKS CLASS C 50/50 +10% BENTONITE +.15% C-20 RETARDER +3# STAR SEAL +.3% C-12 FLUID LOSS+3% SALT+.25% DEFOAMER, 11.8 PPG, 2.37 YIELD

TAIL 250 SACKS CLASS "H" STAR BOND+.5% FL-10+.2%C-20, +3# GILSONITE+.25% DEFOAMER+3% SALT 13.2 PPG, 1.6 YIELD

SPECIFICATIONS FOR PRESSURE CONTROL EQUIPMENT: (EXHIBIT #5)

A 2000# WP Annular will be installed after running the 13-3/8" casing. A 3,000# WP Double Ram BOP and 3,000 annular will be installed after running the 9-5/8" and 7" casing. Pressure test will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use. 7" and 9-5/8" BOP will be tested to 3000# and the annular to 1500# with a third party testing company before drilling below each shoe. If operations last more than 30 days from 1st test, will test again as per BLM Onshore Oil and Gas order #2.

MUD PROGRAM:

Spud and drill 17 ½" surface hole with **fresh water (8.4 to 8.7 ppg)** to a depth of approx ~~1200'~~ 1240'. Control lost circulation with paper and LCM pills. Viscosity 28-55, no fluid loss control. Fresh water gel sweeps.

Drill 12 ¼" hole from **1200'** to **3,130'** with **Brine (9.5 to 10.0 ppg)** . Control lost circulation with paper and LCM pills. Viscosity 28-30, no fluid loss control. Salt water gel sweeps.

Drill 8 ¾" production hole from **3,130'** to **9,000'** MD (9,000 TVD, ~85 degrees of curve) with **fresh water (8.4 to 8.7 ppg) or cut brine (8.4 to 9.0 ppg)**. Control lost circulation with paper and LCM pills. From 6500' to TD (8.7 to 9.0 ppg), control filtrate with starch and water loss additives. Clean hole with pre-hydrated freshwater gel sweeps, as necessary. System properties: viscosity 32-24, fluid loss <20 ml/30min.

Drill 6 1/8" production hole from **9,000'-13,850'** with **fresh water (8.4-8.7 ppg)**, control filtrate and increase viscosity with Xanthan gum and Poly Anionic Cellulose. Clean hole high with viscosity sweeps and lubricants as necessary. System Properties viscosity 32-34, fluid loss <20 ml/30min.

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions.

Auxiliary Equipment

A. A Kelly cock will be in the drill string at all times. BOP and fittings must be in good condition with minimum of 2000 psi working pressure on 13-3/8" casing and 3000 psi working pressure on 9-5/8" and 7" casing. Accumulator will be at least 40 gallon capacity with 2 independent sources of pressure on closing unit and meet all other API specifications.

B. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times with 3000 psi working pressure.

C. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 4 ½" liner is run and set and rigging down operations have begun.

TESTING, LOGGING & CORING PROGRAM: See COA

a. Testing: No DST's are expected.
b. Open hole logs are planned at KOP (8,630) TD of vertical hole.
    1. Halliburton Triple Combo, gamma, CNL, DLL
c. Mud logging will take place from 4,500ft to TD 10ft samples
d. Gyro survey will be run at KOP of 8,630'
e. MWD (directional) and LWD (gamma) surveys will be taken from KOP (8,630') to TD

Nadel & Gussman HEYCO, LLC

Lea County, NM
Sec 9: 18S-32E
Young Deep Unit Well 40H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

21 March, 2012

The DIRECTIONAL DRILLING COMPANY

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Sec 9: 18S-32E
Company:	Nadel & Gussman HEYCO, LLC	**TVD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Project:	Lea County, NM	**MD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Site:	Sec 9. 18S-32E	**North Reference:**	Grid
Well:	Young Deep Unit Well 40H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project Lea County, NM

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Sec 9: 18S-32E

Site Position:		**Northing:**	639,230.4000 ft	**Latitude:**	32° 45' 21.737 N
From:	Map	**Easting:**	675,219.6000 ft	**Longitude:**	103° 45' 48.173 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.31 °

Well Young Deep Unit Well 40H

Well Position	**+N/-S**	0.00 ft	**Northing:**	639,230.4000 ft	**Latitude:**	32° 45' 21.737 N
	+E/-W	0.00 ft	**Easting:**	675,219.6000 ft	**Longitude:**	103° 45' 48.173 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	3,807.00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/21/2012	7.62	60.63	48,836

Design Design #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	89.808

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.000	0.000	0.000	0.00	
8,629.56	0 00	0.000	8,629.56	0.00	0.00	0.000	0.000	0 000	0.00	
9,375.61	89.53	89.808	9,107.00	1.59	473.51	12.000	12.000	0.000	89.81	
13,850.47	89.53	89.808	9,144.00	16.60	4,948.20	0.000	0.000	0.000	0.00	Young Deep Unit 40H

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Sec 9: 18S-32E
Company:	Nadel & Gussman HEYCO, LLC	**TVD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Project:	Lea County, NM	**MD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Site:	Sec 9: 18S-32E	**North Reference:**	Grid
Well:	Young Deep Unit Well 40H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.000	0.000	0.000
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.000	0.000	0.000
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.000	0.000	0.000
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.000	0.000	0.000
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.000	0.000	0.000
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.000	0.000	0.000
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.000	0.000	0.000
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.000	0.000	0.000
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.000	0.000	0.000
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.000	0.000	0.000
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.000	0.000	0.000
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.000	0.000	0.000
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.000	0.000	0.000
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.000	0.000	0.000
1,400.00	0.00	0.000	1,400.00	0.00	0.00	0.00	0.000	0.000	0.000
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.000	0.000	0.000
1,600.00	0.00	0.000	1,600.00	0.00	0.00	0.00	0.000	0.000	0.000
1,700.00	0.00	0.000	1,700.00	0.00	0.00	0.00	0.000	0.000	0.000
1,800.00	0.00	0.000	1,800.00	0.00	0.00	0.00	0.000	0.000	0.000
1,900.00	0.00	0.000	1,900.00	0.00	0.00	0.00	0.000	0.000	0.000
2,000.00	0.00	0.000	2,000.00	0.00	0.00	0.00	0.000	0.000	0.000
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2,200.00	0.00	0.000	2,200.00	0.00	0.00	0.00	0.000	0.000	0.000
2,300.00	0.00	0.000	2,300.00	0.00	0.00	0.00	0.000	0.000	0.000
2,400.00	0.00	0.000	2,400.00	0.00	0.00	0.00	0.000	0.000	0.000
2,500.00	0.00	0.000	2,500.00	0.00	0.00	0.00	0.000	0.000	0.000
2,600.00	0.00	0.000	2,600.00	0.00	0.00	0.00	0.000	0.000	0.000
2,700.00	0.00	0.000	2,700.00	0.00	0.00	0.00	0.000	0.000	0.000
2,800.00	0.00	0.000	2,800.00	0.00	0.00	0.00	0.000	0.000	0.000
2,900.00	0.00	0.000	2,900.00	0.00	0.00	0.00	0.000	0.000	0.000
3,000.00	0.00	0.000	3,000.00	0.00	0.00	0.00	0.000	0.000	0.000
3,100.00	0.00	0.000	3,100.00	0.00	0.00	0.00	0.000	0.000	0.000
3,200.00	0.00	0.000	3,200.00	0.00	0.00	0.00	0.000	0.000	0.000
3,300.00	0.00	0.000	3,300.00	0.00	0.00	0.00	0.000	0.000	0.000
3,400.00	0.00	0.000	3,400.00	0.00	0.00	0.00	0.000	0.000	0.000
3,500.00	0.00	0.000	3,500.00	0.00	0.00	0.00	0.000	0.000	0.000
3,600.00	0.00	0.000	3,600.00	0.00	0.00	0.00	0.000	0.000	0.000
3,700.00	0.00	0.000	3,700.00	0.00	0.00	0.00	0.000	0.000	0.000
3,800.00	0.00	0.000	3,800.00	0.00	0.00	0.00	0.000	0.000	0.000
3,900.00	0.00	0.000	3,900.00	0.00	0.00	0.00	0.000	0.000	0.000
4,000.00	0.00	0.000	4,000.00	0.00	0.00	0.00	0.000	0.000	0.000
4,100.00	0.00	0.000	4,100.00	0.00	0.00	0.00	0.000	0.000	0.000
4,200.00	0.00	0.000	4,200.00	0.00	0.00	0.00	0.000	0.000	0.000
4,300.00	0.00	0.000	4,300.00	0.00	0.00	0.00	0.000	0.000	0.000
4,400.00	0.00	0.000	4,400.00	0.00	0.00	0.00	0.000	0.000	0.000
4,500.00	0.00	0.000	4,500.00	0.00	0.00	0.00	0.000	0.000	0.000
4,600.00	0.00	0.000	4,600.00	0.00	0.00	0.00	0.000	0.000	0.000
4,700.00	0.00	0.000	4,700.00	0.00	0.00	0.00	0.000	0.000	0.000
4,800.00	0.00	0.000	4,800.00	0.00	0.00	0.00	0.000	0.000	0.000
4,900.00	0.00	0.000	4,900.00	0.00	0.00	0.00	0.000	0.000	0.000
5,000.00	0.00	0.000	5,000.00	0.00	0.00	0.00	0.000	0.000	0.000
5,100.00	0.00	0.000	5,100.00	0.00	0.00	0.00	0.000	0.000	0.000
5,200.00	0.00	0.000	5,200.00	0.00	0.00	0.00	0.000	0.000	0.000
5,300.00	0.00	0.000	5,300.00	0.00	0.00	0.00	0.000	0.000	0.000

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Sec 9- 18S-32E
Company:	Nadel & Gussman HEYCO, LLC	**TVD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Project:	Lea County, NM	**MD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Site:	Sec 9. 18S-32E	**North Reference:**	Grid
Well:	Young Deep Unit Well 40H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	0.00	0.000	5,400.00	0.00	0.00	0.00	0.000	0.000	0.000
5,500.00	0.00	0.000	5,500.00	0.00	0.00	0.00	0.000	0.000	0.000
5,600.00	0.00	0.000	5,600.00	0.00	0.00	0.00	0.000	0.000	0.000
5,700.00	0.00	0.000	5,700.00	0 00	0.00	0.00	0.000	0.000	0.000
5,800.00	0.00	0.000	5,800.00	0 00	0.00	0.00	0.000	0.000	0.000
5,900.00	0 00	0.000	5,900.00	0.00	0.00	0.00	0.000	0.000	0.000
6,000.00	0 00	0.000	6,000.00	0.00	0.00	0.00	0.000	0.000	0.000
6,100.00	0.00	0.000	6,100.00	0.00	0.00	0.00	0.000	0.000	0.000
6,200.00	0.00	0.000	6,200 00	0.00	0.00	0.00	0.000	0.000	0.000
6,300.00	0.00	0.000	6,300.00	0.00	0.00	0.00	0.000	0.000	0.000
6,400.00	0.00	0.000	6,400.00	0.00	0.00	0.00	0.000	0.000	0.000
6,500.00	0 00	0.000	6,500.00	0.00	0.00	0.00	0.000	0.000	0.000
6,600.00	0.00	0.000	6,600.00	0.00	0.00	0.00	0.000	0.000	0.000
6,700.00	0.00	0.000	6,700.00	0.00	0.00	0.00	0.000	0.000	0.000
6,800.00	0.00	0.000	6,800.00	0.00	0.00	0.00	0.000	0.000	0.000
6,900.00	0.00	0.000	6,900.00	0.00	0.00	0.00	0.000	0.000	0.000
7,000.00	0.00	0.000	7,000.00	0.00	0.00	0.00	0.000	0.000	0.000
7,100.00	0.00	0.000	7,100.00	0.00	0.00	0.00	0.000	0.000	0.000
7,200.00	0.00	0.000	7,200.00	0.00	0.00	0.00	0.000	0.000	0.000
7,300.00	0.00	0.000	7,300.00	0.00	0.00	0.00	0.000	0.000	0.000
7,400.00	0.00	0.000	7,400.00	0.00	0.00	0.00	0.000	0.000	0.000
7,500.00	0.00	0.000	7,500.00	0.00	0.00	0.00	0.000	0.000	0.000
7,600.00	0.00	0.000	7,600.00	0.00	0.00	0.00	0.000	0.000	0.000
7,700.00	0.00	0.000	7,700.00	0.00	0.00	0.00	0.000	0.000	0.000
7,800.00	0.00	0.000	7,800.00	0.00	0.00	0.00	0.000	0.000	0.000
7,900.00	0.00	0.000	7,900 00	0.00	0.00	0.00	0.000	0.000	0.000
8,000.00	0.00	0.000	8,000 00	0.00	0.00	0.00	0.000	0.000	0.000
8,100.00	0.00	0.000	8,100.00	0.00	0.00	0.00	0.000	0.000	0.000
8,200.00	0.00	0.000	8,200.00	0.00	0.00	0.00	0.000	0.000	0.000
8,300.00	0.00	0.000	8,300.00	0.00	0.00	0.00	0.000	0.000	0.000
8,400.00	0.00	0.000	8,400.00	0.00	0.00	0.00	0.000	0.000	0.000
8,500.00	0 00	0.000	8,500.00	0.00	0.00	0.00	0.000	0.000	0.000
8,600.00	0.00	0.000	8,600.00	0.00	0.00	0.00	0.000	0.000	0.000
8630'MD: KOP - Begin Build @ 12° DLS									
8,629.56	0.00	0.000	8,629.56	0.00	0.00	0.00	0.000	0.000	0.000
8,700.00	8.45	89.808	8,699.74	0.02	5.19	5.19	12.000	12.000	0.000
8,800.00	20.45	89.808	8,796.40	0.10	30.10	30.10	12.000	12.000	0.000
8,900.00	32.45	89.808	8,885.77	0.25	74.57	74.57	12.000	12.000	0.000
9,000.00	44 45	89.808	8,963.94	0.46	136.64	136.64	12.000	12.000	0.000
9,100.00	56 45	89.808	9,027.49	0.72	213.61	213.61	12.000	12.000	0.000
9,200.00	68 45	89.808	9,073.65	1 01	302.11	302.11	12.000	12.000	0.000
9,300.00	80.45	89.808	9,100.41	1.34	398.27	398.28	12.000	12.000	0.000
9376'MD - 9107'TVD - EOC w/89.53° Incl. Azm. 89.81°									
9,375.61	89.53	89.808	9,107.00	1.59	473.51	473 52	12.000	12.000	0.000
9,400.00	89.53	89.808	9,107.21	1.67	497.91	497 91	0.000	0.000	0.000
9,500.00	89.53	89.808	9,108.03	2.01	597.90	597.91	0.000	0.000	0.000
9562'MD -9109'TVD - Hardline Crossing									
9,562.10	89.53	89.808	9,108.55	2.21	660.00	660.00	0.000	0.000	0.000
9,600.00	89.53	89.808	9,108.86	2.34	697.90	697.90	0.000	0.000	0.000
9,700.00	89.53	89.808	9,109.69	2.68	797.89	797.90	0.000	0.000	0.000
9,800.00	89.53	89.808	9,110.51	3.01	897.89	897.89	0.000	0.000	0.000
9,900.00	89.53	89.808	9,111.34	3.35	997.89	997.89	0.000	0.000	0.000
10,000.00	89.53	89.808	9,112.17	3.68	1,097.88	1,097.89	0.000	0.000	0.000

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Sec 9: 18S-32E
Company:	Nadel & Gussman HEYCO, LLC	TVD Reference:	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Project:	Lea County, NM	MD Reference:	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Site:	Sec 9. 18S-32E	North Reference:	Grid
Well:	Young Deep Unit Well 40H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,100.00	89.53	89.808	9,112.99	4.02	1,197.88	1,197.88	0.000	0.000	0.000
10,200.00	89.53	89.808	9,113.82	4.35	1,297.87	1,297.88	0.000	0.000	0.000
10,300.00	89.53	89.808	9,114.65	4.69	1,397.87	1,397.88	0.000	0.000	0.000
10,400.00	89.53	89.808	9,115.47	5.02	1,497.87	1,497.87	0.000	0.000	0.000
10,500.00	89.53	89.808	9,116.30	5.36	1,597.86	1,597.87	0.000	0.000	0.000
10,600.00	89.53	89.808	9,117.13	5.70	1,697.86	1,697.87	0.000	0.000	0.000
10,700.00	89.53	89.808	9,117.95	6.03	1,797.85	1,797.86	0.000	0.000	0.000
10,800.00	89.53	89.808	9,118.78	6.37	1,897.85	1,897.86	0.000	0.000	0.000
10,900.00	89.53	89.808	9,119.61	6.70	1,997.85	1,997.86	0.000	0.000	0.000
11,000.00	89.53	89.808	9,120.43	7.04	2,097.84	2,097.85	0.000	0.000	0.000
11,100.00	89.53	89.808	9,121.26	7.37	2,197.84	2,197.85	0.000	0.000	0.000
11,200.00	89.53	89.808	9,122.09	7.71	2,297.83	2,297.85	0.000	0.000	0.000
11,300.00	89.53	89.808	9,122.91	8.04	2,397.83	2,397.84	0.000	0.000	0.000
11,400.00	89.53	89.808	9,123.74	8.38	2,497.83	2,497.84	0.000	0.000	0.000
11,500.00	89.53	89.808	9,124.57	8.72	2,597.82	2,597.84	0.000	0.000	0.000
11,600.00	89.53	89.808	9,125.39	9.05	2,697.82	2,697.83	0.000	0.000	0.000
11,700.00	89.53	89.808	9,126.22	9.39	2,797.81	2,797.83	0.000	0.000	0.000
11,800.00	89.53	89.808	9,127.05	9.72	2,897.81	2,897.83	0.000	0.000	0.000
11,900.00	89.53	89.808	9,127.87	10.06	2,997.81	2,997.82	0.000	0.000	0.000
12,000.00	89.53	89.808	9,128.70	10.39	3,097.80	3,097.82	0.000	0.000	0.000
12,100.00	89.53	89.808	9,129.53	10.73	3,197.80	3,197.82	0.000	0.000	0.000
12,200.00	89.53	89.808	9,130.35	11.06	3,297.79	3,297.81	0.000	0.000	0.000
12,300.00	89.53	89.808	9,131.18	11.40	3,397.79	3,397.81	0.000	0.000	0.000
12,400.00	89.53	89.808	9,132.01	11.73	3,497.79	3,497.81	0.000	0.000	0.000
12,500.00	89.53	89.808	9,132.84	12.07	3,597.78	3,597.80	0.000	0.000	0.000
12,600.00	89.53	89.808	9,133.66	12.41	3,697.78	3,697.80	0.000	0.000	0.000
12,700.00	89.53	89.808	9,134.49	12.74	3,797.77	3,797.80	0.000	0.000	0.000
12,800.00	89.53	89.808	9,135.32	13.08	3,897.77	3,897.79	0.000	0.000	0.000
12,900.00	89.53	89.808	9,136.14	13.41	3,997.77	3,997.79	0.000	0.000	0.000
13,000.00	89.53	89.808	9,136.97	13.75	4,097.76	4,097.79	0.000	0.000	0.000
13,100.00	89.53	89.808	9,137.80	14.08	4,197.76	4,197.78	0.000	0.000	0.000
13,200.00	89.53	89.808	9,138.62	14.42	4,297.75	4,297.78	0.000	0.000	0.000
13,300.00	89.53	89.808	9,139.45	14.75	4,397.75	4,397.78	0.000	0.000	0.000
13,400.00	89.53	89.808	9,140.28	15.09	4,497.75	4,497.77	0.000	0.000	0.000
13,500.00	89.53	89.808	9,141.10	15.42	4,597.74	4,597.77	0.000	0.000	0.000
13,600.00	89.53	89.808	9,141.93	15.76	4,697.74	4,697.77	0.000	0.000	0.000
13,700.00	89.53	89.808	9,142.76	16.10	4,797.73	4,797.76	0.000	0.000	0.000
13,800.00	89.53	89.808	9,143.58	16.43	4,897.73	4,897.76	0.000	0.000	0.000
TD at 13851'MD - 9144'TVD - Young Deep Unit 40H PBHL									
13,850.47	89.53	89.808	9,144.00	16.60	4,948.20	4,948.23	0.000	0.000	0.000

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Young Deep Unit 40H Pl - plan hits target center - Point	0.00	0.000	9,144.00	16.60	4,948.20	639,247.0000	680,167.8000	32° 45' 21.634 N	103° 44' 50.230 W

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Sec 9: 18S-32E
Company:	Nadel & Gussman-HEYCO, LLC	**TVD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Project:	Lea County, NM	**MD Reference:**	GL 3807' + 20' Est.KB @ 3827.00ft (TBD)
Site:	Sec 9: 18S-32E	**North Reference:**	Grid
Well:	Young Deep Unit Well 40H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

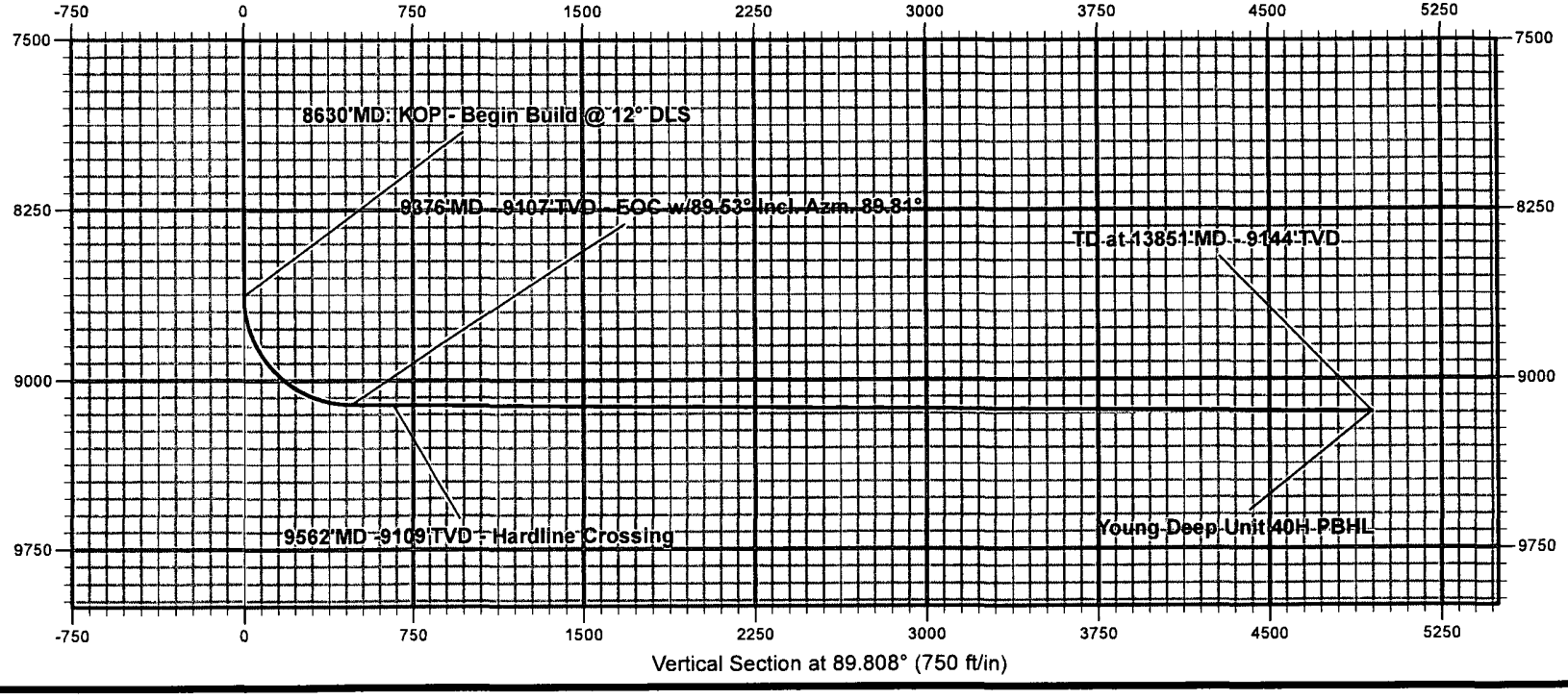
Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
8,629.56	8,629.56	0.00	0.00	8630'MD: KOP - Begin Build @ 12° DLS
9,375.61	9,107.00	1.59	473.51	9376'MD - 9107'TVD - EOC w/89.53° Incl. Azm. 89.81°
9,562.10	9,108.55	2.21	660.00	9562'MD -9109'TVD - Hardline Crossing
13,850.47	9,144.00	16.60	4,948.20	TD at 13851'MD - 9144'TVD

Nadel & Gussman HEYCO, LLC

Young Deep Unit Well 40H
Sec 9: 18S-32E
Lea County, NM
Design #1
Q120229

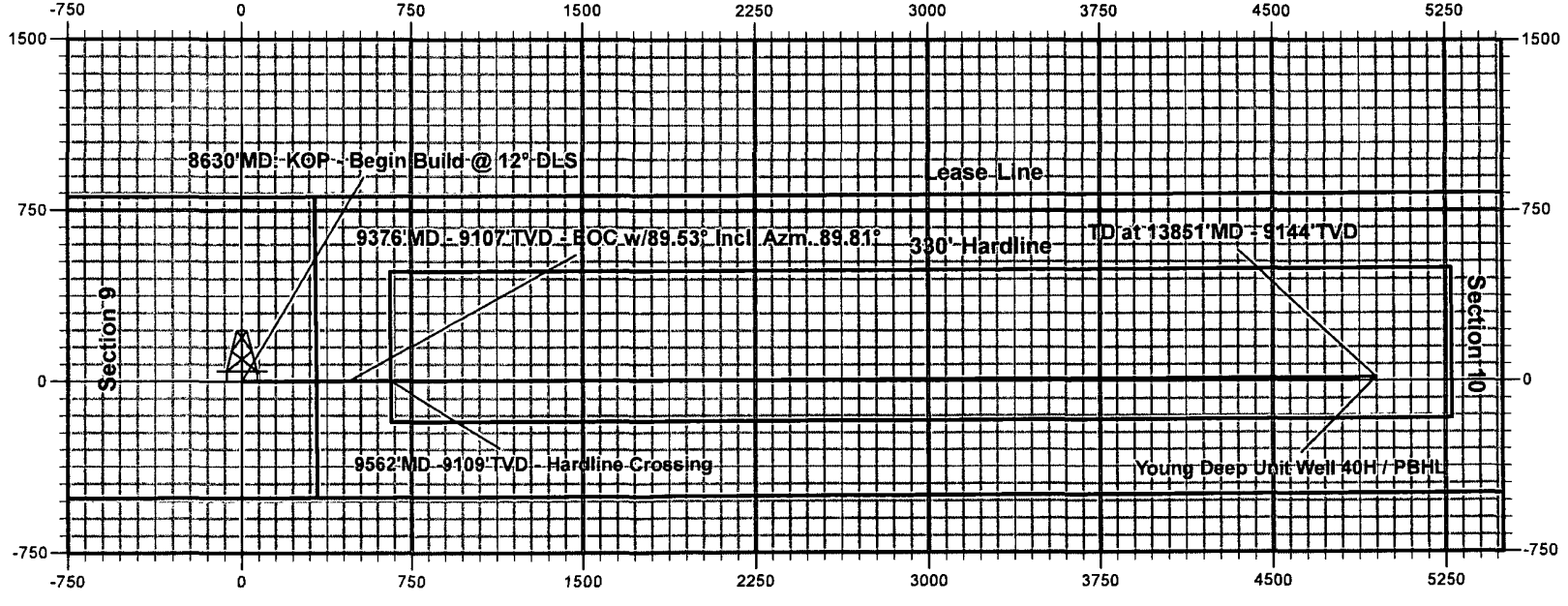
RDC
The DIRECTIONAL DRILLING COMPANY



Nadel & Gussman HEYCO, LLC

Young Deep Unit Well 40H
Sec 9: 18S-32E
Lea County, NM
Design #1
Q120229

RDC
The DIRECTIONAL DRILLING COMPANY



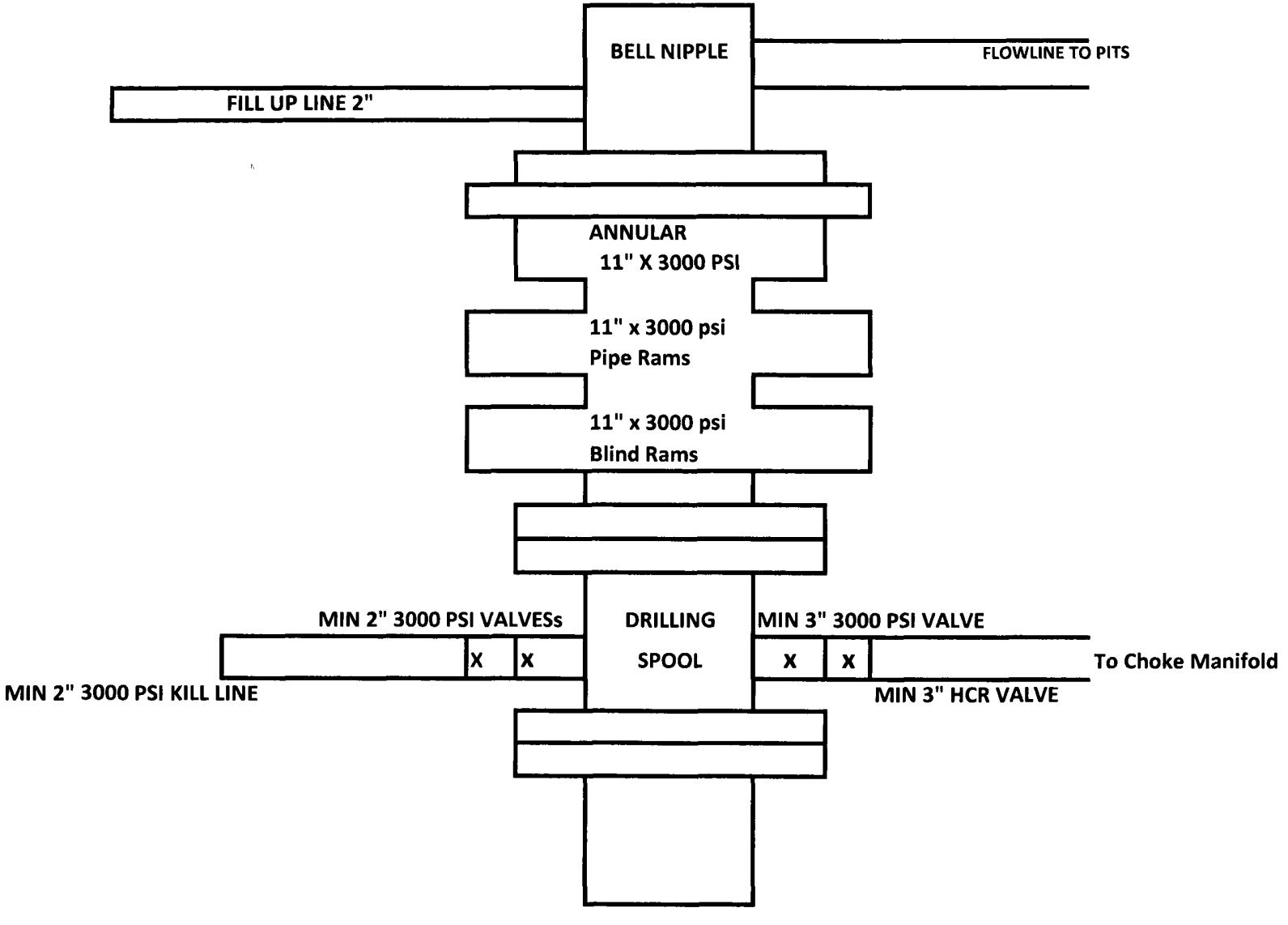
Well Young Deep Unit #40H

510' FSL, 330 FEL, Sec. 9, 18S, 32E

Lea County New Mexico

Nadel and Gussman HEYCO, L.L.C.

BOP Schematic 8.75" & 6.125" hole



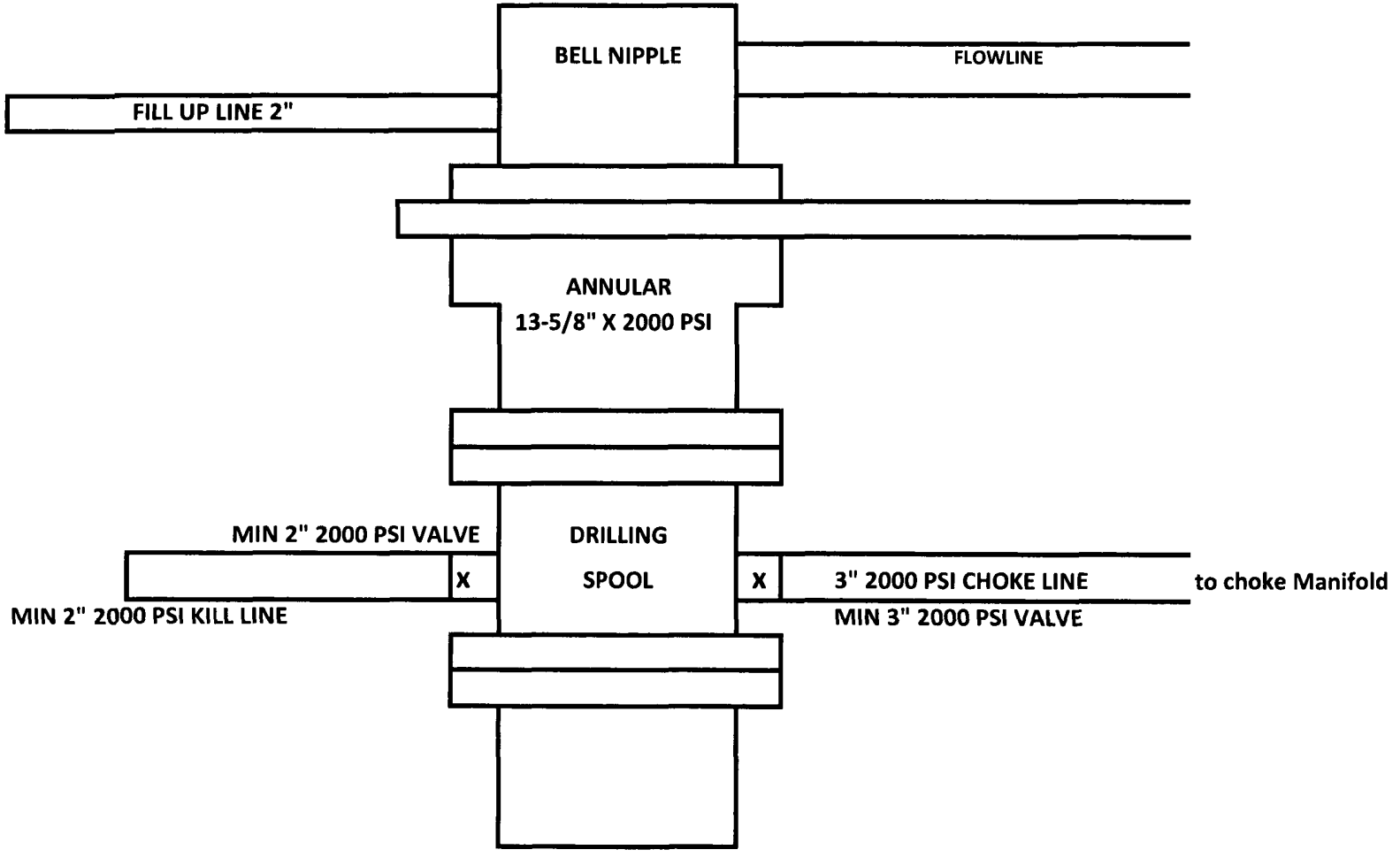
Well: Young Deep Unit #40H

510 FSL, 330 FEL, Sec. 9, 18S, 32E

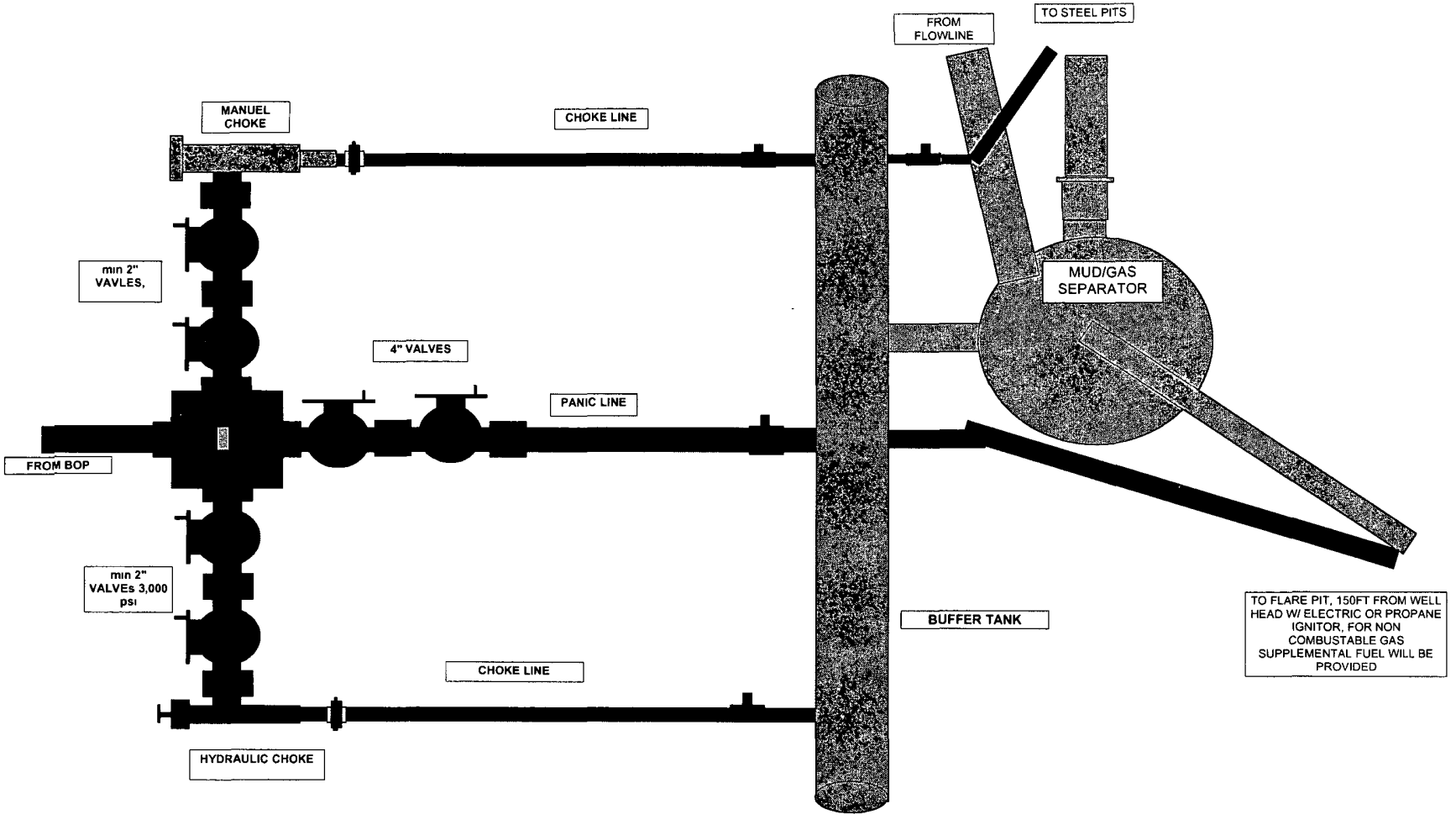
Lea County New Mexico

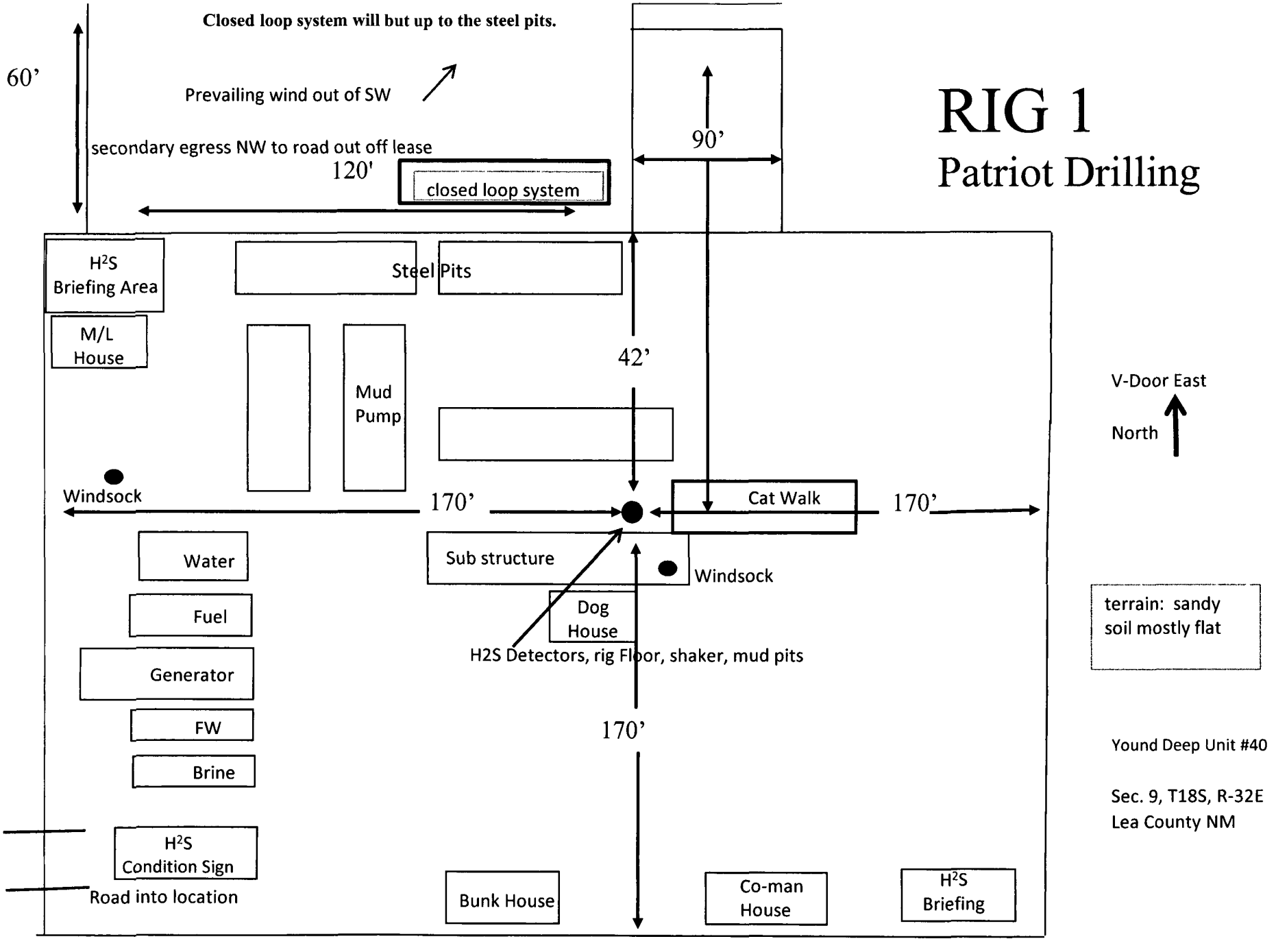
Nadel and Gussman HEYCO, L.L.C.

BOP Schematic 12.25" hole



Young Deep Unit #40H
3000 psi BOP Manifold System




Closed loop system will but up to the steel pits.
60'
Prevailing wind out of SW
secondary egress NW to road out off lease
120'
closed loop system
90'
RIG 1
Patriot Drilling
H2S Briefing Area
Steel Pits
M/L House
Mud Pump
42'
V-Door East
North
Windsock
170'
Cat Walk
170'
Water
Sub structure
Windsock
Fuel
Dog House
H2S Detectors, rig Floor, shaker, mud pits
Generator
FW
170'
Brine
terrain: sandy soil mostly flat
Yound Deep Unit #40
Sec. 9, T18S, R-32E
Lea County NM
H2S Condition Sign
Road into location
Bunk House
Co-man House
H2S Briefing

NADEL AND GUSSMAN HEYCO, L.L.C.
P.O. Box 1936
Roswell, NM 88202
(575) 623-6601 (Office)

3/15/12

Mr. Ingram
Carlsbad BLM Field Office
620 E. Greene St.
Carlsbad, NM 88220

Re: Young Deep Unit No. 40H
Sec. 9, T18S, R32E
Lea County, NM
Rule 118 H2S Exposure

Dear Mr. Ingram,

Nadel and Gussman HEYCO, LLC have evaluated this well and we do not expect to encounter hydrogen sulfide. However, we will employ a third party monitoring system. We will begin monitoring prior to drilling out the surface casing and will continue monitoring the remainder of the well.

Please contact me if you have any additional questions.

Sincerely,

Jason Goss
Drilling Engineer