

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

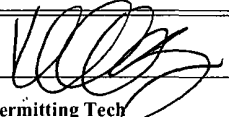
FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

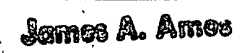
1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. NMLC-028731B
1b. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name N/A
2 Name of Operator COG Operating LLC		7 If Unit or CA Agreement, Name and No. NMNM-111789X; Dodd Federal Unit
3a Address 550 W. Texas Ave., Suite 1300 Midland, TX 79701		8 Lease Name and Well No. DODD FEDERAL UNIT #613 308195
3b Phone No. (include area code) 432-685-4384		9 API Well No. 30-015- 39667
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface SHL: 1201' FNL & 2478' FWL, Unit C At proposed prod zone BHL: 1310' FNL & 1980' FWL, Unit C		10 Field and Pool, or Exploratory Grayburg Jackson; SR-Q-Grbg-SA 28509
11 Sec., T. R. M. or Blk and Survey or Area Sec 14 T17S R29E		
12 Distance in miles and direction from nearest town or post office* 2 miles from Loco Hills, NM		12 County or Parish EDDY
13 State NM		
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) 1201'	16 No. of acres in lease 1480	17 Spacing Unit dedicated to this well 40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 258'	19 Proposed Depth TVD: 4550' MD: 4590'	20 BLM/BIA Bond No. on file NMB000740; NMB000215
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3630' GL	22 Approximate date work will start* 11/30/2011	23 Estimated duration 15 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) Kelly J. Holly	Date 09/09/2011
Title Permitting Tech		

Approved by (Signature) 	Name (Printed/Typed) James A. Ames	Date OCT 28 2011
Title 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 USC. Section 1001 and Title 43 USC. 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)

Roswell Controlled Water Basin



Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
CONDITIONS OF APPROVAL

COA

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	220'
Salt	360'
Base of Salt	780'
Yates	950'
Seven Rivers	1235'
Queen	1845'
Grayburg	2220'
San Andres	2540'
Glorieta	4000'
Paddock	4075'
Blinbry	4620'
Tubb	5520'

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

Water Sand	150'	Fresh Water
Grayburg	2220'	Oil/Gas
San Andres	2540'	Oil/Gas
Glorieta	4000'	Oil/Gas
Paddock	4075'	Oil/Gas
Blinebry	4620'	Oil/Gas
Tubb	5520'	Oil/Gas

See
COA

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 300' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 8 5/8" casing to ~~350'~~ and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 5 1/2" production casing back 200' into the intermediate casing, (but calculated to surface) to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or environment.

See
COA

4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 1/2"	0-300'	13 3/8"	48#	H-40orJ-55	ST&C/New	ST&C	9.22/3.943/15.8
11" <i>11 3/8</i>	0-850'	8 5/8"	24or32#	J-55	ST&C/New	ST&C	3.03/2.029/7.82
7 7/8"	0-TD	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	LT&C	1.88/1.731/2.42

5. Cement Program

13 3/8" Surface Casing:

Class C w/ 2% CaCl₂ + 0.25 pps CF, 400 sx, yield 1.32, back to surface. 154% excess

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx lead, yield-2.45 + Class C w/2% CaCl₂, 200 sx tail, yield-1.32, back to surface. 363% excess

Multi-Stage: Stage 1: Class C w/2% CaCl₂, 200 sx, yield - 1.32; 108% excess
Stage 2: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx, yield - 2.45, back to surface, 726% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 350' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

5 1/2" Production Casing:

Single Stage: LEAD 500 sx 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, yield-2.05; + TAIL 400 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield-1.37, to 200' minimum tie back to intermediate casing. 76.8% open hole excess, cement calculated back to surface.

Multi-Stage: Stage 1: (Assumed TD of 4550') 500 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF,

yield - 1.37, 34% excess; Stage 2: LEAD 450 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield - 1.37, + TAIL 250 sx Class C w/ 0.3% R-3 + 1.5% CD-32, yield - 1.02 148% open hole excess, cement calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 2500'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

6. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. A 13-5/8" or 11" BOP will be used, depending on the rig selected, during the drilling of the well. The BOP will be nipped up on the 13 3/8" surface casing with BOP equipment and tested to 2000 psi. When 11" BOP is used the special drilling flange will be utilized on the 13-3/8" head to allow testing the BOP with a retrievable test plug. After setting 8-5/8" the BOP will then be nipped up on the 8 5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

The majority of the rigs currently in use have a 13-5/8" BOP, so no special provision is needed for most wells in the area for conventionally testing the BOP with a test plug. However, due to the vagaries of rig scheduling, it might be that one of the few rigs with 11" BOP's might be called upon to drill any specific well in the area. Note that intermediate hole size is always 11". Therefore, COG Operating LLC respectfully requests a variance to the requirement of 13-5/8" BOP on 13-3/8" casing. When that circumstance is encountered the special flange will be utilized to allow testing the entire BOP with a test plug, without subjecting the casing to test pressure. The special flange also allows the return to full-open capability if desired.

See COA

7. Types and Characteristics of the Proposed Mud System

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

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-300'	Fresh Water	8.5	28	N.C.
300-850' 1130	Brine	10	30	N.C.
850' -TD'	Cut Brine	8.7-9.2	30	N.C.

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

8. Auxiliary Well Control and Monitoring Equipment

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

9. Logging, Testing and Coring Program *See COA*

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be run from TD to Surface.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD, based on drill shows and log evaluation.

10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hole pressure is 2300 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, although a Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 10 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.



COG Operating LLC

Eddy County, NM (NAN27 NME)

Dodd Federal Unit #613

Dodd Federal Unit #613

OH

Plan: Plan #1 7-7/8" Hole

SHL = 1201' FNL & 2478' FWL

BHL = 1310' FNL & 1980' FWL

Top of Paddock = 93' South of Surface & 427' West of Surface @ 4100' TVD

Standard Planning Report

30 August, 2011





Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Dodd Federal Unit #613
Well: Dodd Federal Unit #613
Wellbore: OH
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference: Site Dodd Federal Unit #613
TVD Reference: GL Elev @ 3630 00usft
MD Reference: GL Elev @ 3630 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAN27 NME)		
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	Dodd Federal Unit #613		
Site Position:	Northings:	668,843 30 usft	Latitude: 32° 50' 18 258 N
From: Map	Easting:	588,412 60 usft	Longitude: 104° 2' 43 717 W
Position Uncertainty:	0 00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0 16 °

Well	Dodd Federal Unit #613		
Well Position	+N/-S	0 00 usft	Northings: 668,843.30 usft
	+E/-W	0 00 usft	Easting: 588,412 60 usft
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level: 3,630 00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	2011/08/29	7 83
			Dip Angle (°)
			60 67
			Field Strength (nT)
			48,912

Design	Plan #1 7-7/8" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 00	0 00	0 00
			Direction (°)
			257 67

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth (usft)	(°)	(°)	Depth (usft)	(usft)	(usft)	Rate (°/100usft)	Rate (°/100usft)	Rate (°/100usft)	(°)	
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,606 21	9 12	257 67	1,604 29	-7 74	-35 41	2 00	2 00	-22 43	257 67	
4,589 68	9 12	257 67	4,550 00	-108 80	-497 60	0 00	0 00	0 00	0 00	PBHL-Dodd #613



Scientific Drilling Planning Report



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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
South HL-Dodd #613									
1,050 00	0 00	0 00	1,050 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
1,200 00	1 00	257 67	1,200 00	-0 09	-0 43	0 44	2 00	2 00	0 00
1,300 00	3 00	257 67	1,299 93	-0 84	-3 84	3 93	2 00	2 00	0 00
1,400 00	5 00	257 67	1,399 68	-2 33	-10 65	10 90	2 00	2 00	0 00
1,500 00	7 00	257 67	1,499 13	-4 56	-20 86	21 35	2 00	2 00	0 00
1,600 00	9 00	257 67	1,598 15	-7 53	-34 46	35 27	2 00	2 00	0 00
1,606 21	9 12	257 67	1,604.28	-7 74	-35 41	36 25	2 00	2 00	0 00
EOC hold 9.12°									
1,700 00	9 12	257 67	1,696 89	-10 92	-49 94	51 12	0 00	0 00	0 00
1,800 00	9 12	257 67	1,795 62	-14 31	-65 43	66 98	0 00	0 00	0 00
1,900 00	9 12	257 67	1,894 36	-17 69	-80 92	82 84	0 00	0 00	0 00
2,000 00	9 12	257 67	1,993 09	-21 08	-96 42	98 69	0 00	0 00	0 00
2,100 00	9 12	257 67	2,091 83	-24 47	-111 91	114 55	0 00	0 00	0 00
2,200 00	9 12	257 67	2,190 56	-27 86	-127 40	130 41	0 00	0 00	0 00
2,300 00	9 12	257 67	2,289 30	-31 24	-142 89	146 27	0 00	0 00	0 00
2,400 00	9 12	257 67	2,388 03	-34 63	-158 38	162 12	0 00	0 00	0 00
2,500 00	9 12	257 67	2,486 76	-38 02	-173 87	177 98	0 00	0 00	0 00
2,600 00	9 12	257 67	2,585 50	-41 40	-189 37	193 84	0 00	0 00	0 00
2,700 00	9 12	257 67	2,684 23	-44 79	-204 86	209 70	0 00	0 00	0 00
2,800 00	9 12	257 67	2,782 97	-48 18	-220 35	225 56	0 00	0 00	0 00
2,900 00	9 12	257 67	2,881 70	-51 57	-235 84	241 41	0 00	0 00	0 00
3,000 00	9 12	257 67	2,980 44	-54 95	-251 33	257 27	0 00	0 00	0 00
3,100 00	9 12	257 67	3,079 17	-58 34	-266 82	273 13	0 00	0 00	0 00
3,200 00	9 12	257 67	3,177 91	-61 73	-282 32	288 99	0 00	0 00	0 00
3,300 00	9 12	257 67	3,276 64	-65 12	-297 81	304 84	0 00	0 00	0 00
3,400 00	9 12	257 67	3,375 38	-68 50	-313 30	320 70	0 00	0 00	0 00
3,500 00	9 12	257 67	3,474 11	-71 89	-328 79	336 56	0 00	0 00	0 00
3,600 00	9 12	257 67	3,572 85	-75 28	-344 28	352 42	0 00	0 00	0 00
3,700 00	9 12	257 67	3,671 58	-78 66	-359 77	368.27	0 00	0 00	0 00
3,800 00	9 12	257 67	3,770 32	-82 05	-375 27	384 13	0 00	0 00	0 00
3,900 00	9 12	257 67	3,869 05	-85 44	-390.76	399 99	0 00	0 00	0 00
4,000 00	9 12	257 67	3,967 79	-88 83	-406 25	415 85	0 00	0 00	0 00
4,100 00	9 12	257 67	4,066 52	-92 21	-421 74	431 70	0 00	0 00	0 00
4,133 91	9 12	257 67	4,100 00	-93 36	-426 99	437 08	0 00	0 00	0 00
Top of Paddock									
4,200 00	9 12	257 67	4,165 25	-95 60	-437 23	447 56	0 00	0 00	0 00
4,300 00	9 12	257 67	4,263 99	-98 99	-452 72	463 42	0 00	0 00	0 00
4,400 00	9 12	257 67	4,362 72	-102 38	-468 22	479 28	0 00	0 00	0 00
4,500 00	9 12	257 67	4,461 46	-105 76	-483 71	495 14	0 00	0 00	0 00
4,589 68	9 12	257 67	4,550 00	-108 80	-497 60	509 36	0 00	0 00	0 00
PBHL-Dodd #613									



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Dodd Federal Unit #613
Well: Dodd Federal Unit #613
Wellbore: OH
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference: Site Dodd Federal Unit #613
TVD Reference: GL Elev @ 3630 00usft
MD Reference: GL Elev @ 3630 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets

Target Name hit/miss target Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
South HL-Dodd #613 - plan misses target center by 511 58usft at 0 00usft MD (0.00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W200 00 H0 00 D0 00)	0 00	0 01	0 00	-118 80	-497 60	668,724 50	587,915 00	32° 50' 17 095 N	104° 2' 49 553 W
PBHL-Dodd #613 - plan hits target center - Circle (radius 50 00)	0 00	0 01	4,550 00	-108 80	-497 60	668,734 50	587,915 00	32° 50' 17 194 N	104° 2' 49 553 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,050 00	1,050 00	8-5/8" Casing	8-5/8	12-1/4

Formations

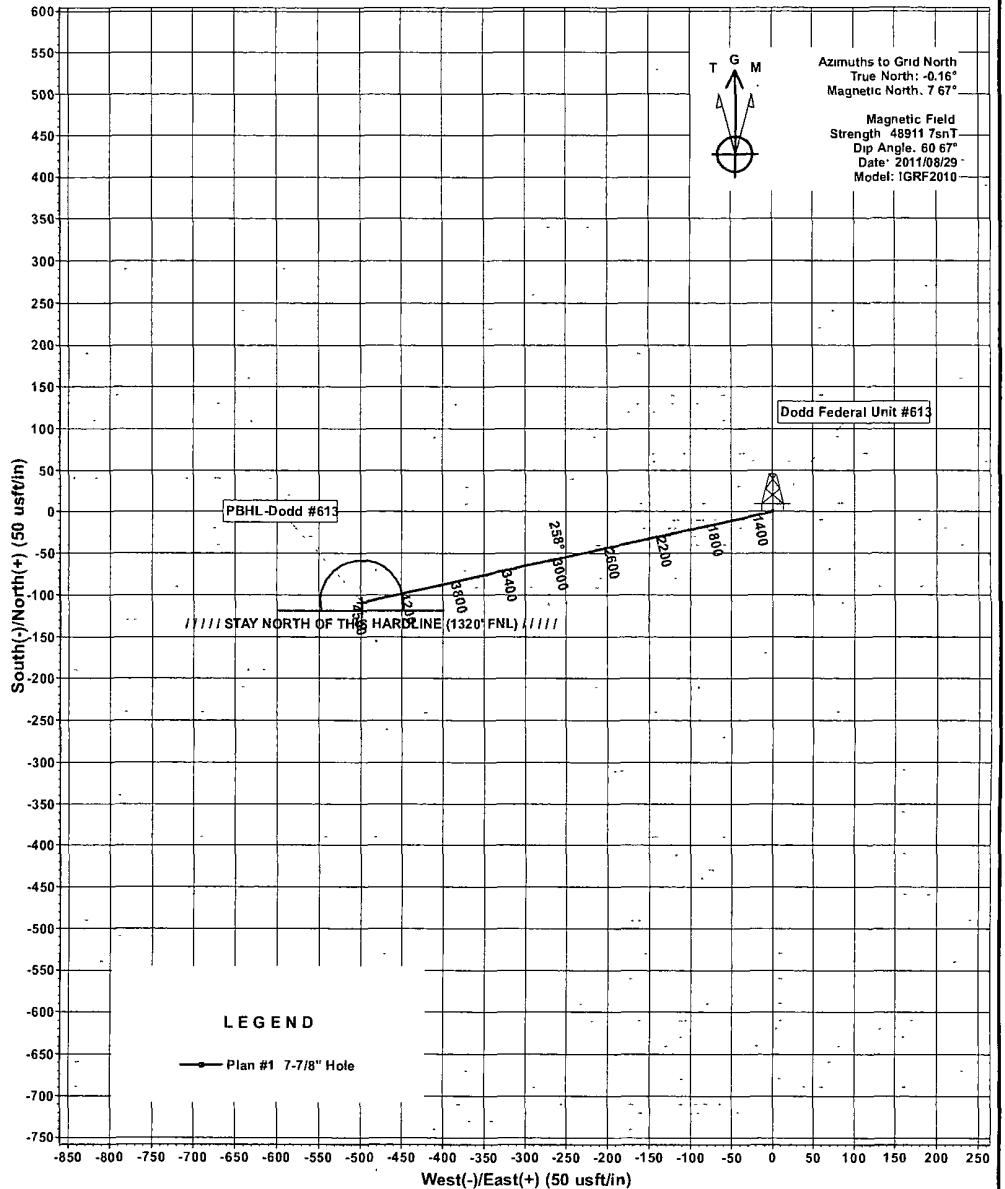
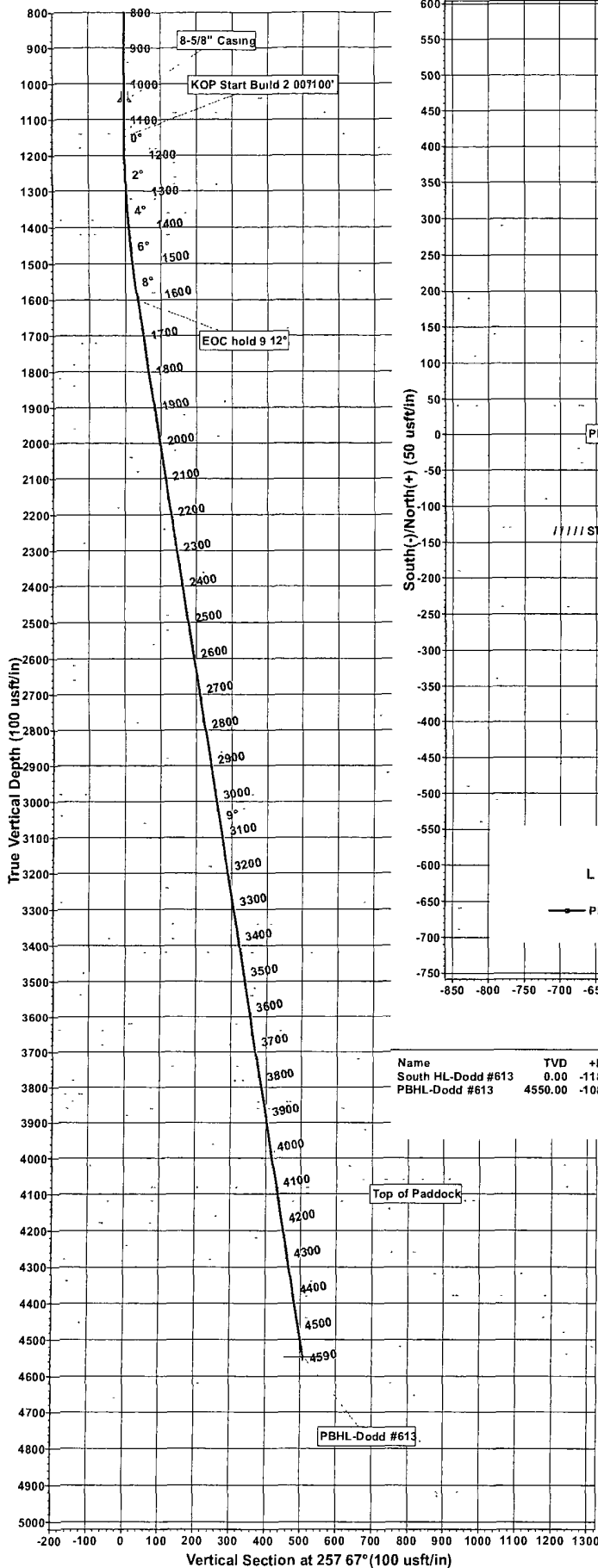
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction
4,133 91	4,100 00	Top of Paddock		0 00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,150 00	1,150 00	0 00	0 00	KOP Start Build 2 00°/100'
1,606 21	1,604 28	-7 74	-35 41	EOC hold 9 12°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Dodd Federal Unit #613
Wellbore: OH
Design: Plan #1 7-7/8" Hole



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
South HL-Dodd #613	0.00	-118.80	-497.60	668724.50	587915.00	32°50'17.095 N	104°2'49.553 W	Rectangle (Sides : L.0.00 W.200.00)	
PBHL-Dodd #613	4550.00	-108.80	-497.60	668734.50	587915.00	32°50'17.194 N	104°2'49.553 W	Circle (Radius: 5.00)	

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	1150.00	0.00	0.00	1150.00	0.00	0.00	0.00	0.00	0.00		
3	1606.21	9.12	257.67	1604.29	-7.74	-35.41	2.00	257.67	36.25		
4	4589.68	9.12	257.67	4550.00	-108.80	-497.60	0.00	0.00	509.36	PBHL-Dodd #613	

WELL DETAILS: Dodd Federal Unit #613

+N/-S	+E/-W	Northing	Easting	Ground Level	Latitude	Longitude	Slot
0.00	0.00	668843.30	588412.60	3630.00	32°50'18.258 N	104°2'43.717 W	

PROJECT DETAILS: Eddy County, NM (NAN27 NME) Plan: Plan #1 7-7/8" Hole (Dodd Federal Unit #613/OH)

Geodetic System:	US State Plane 1927 (Exact solution)	Created By:	Julio Pina	Date:	29-Aug-11
Datum:	NAD 1927 (NADCON CONUS)	Checked:		Date:	
Ellipsoid:	Clarke 1866	Reviewed:		Date:	
Zone:	New Mexico East 3001	Approved:		Date:	
System Datum:	Mean Sea Level				

COG OPERATING LLC

550 West Texas, Suite 1300
Midland, TX 79701

DIRECTIONAL PLAN VARIANCE REQUEST

**Dodd Federal Unit #613
EDDY, NM**

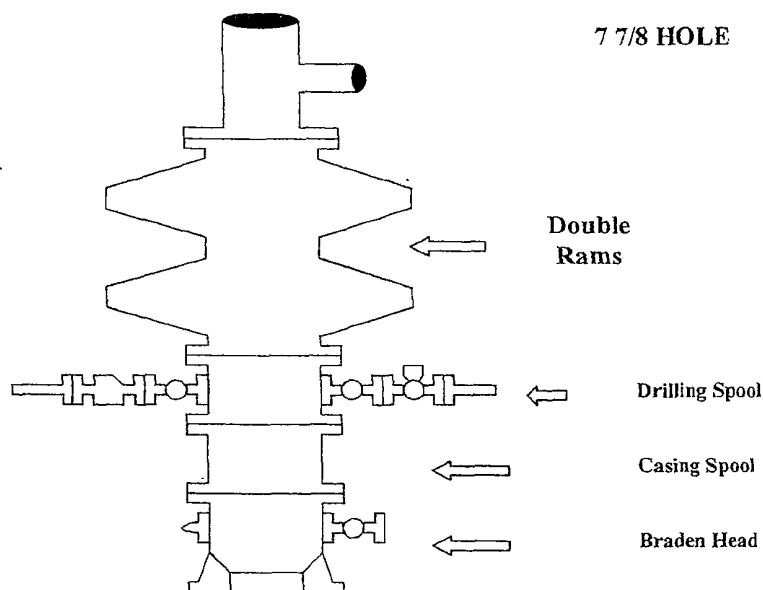
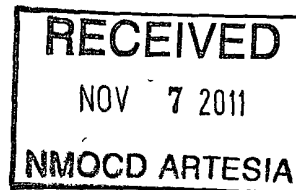
SHL	1201 FNL, 2478 FWL	Sec 14, T17S, R29E, Unit C
BHL	1310 FNL, 1980 FWL	Sec 14, T17S, R29E, Unit C

COG Operating LLC, as Operator, desires that the APD reflect the footages as stated on the surveyor's plat. However, Operator also desires to avoid inadvertently drilling the well to a non-standard location. Therefore, due to the proximity of the plat bottom hole location to the pro-ration unit hard line(s), the attached directional plan is designed to avoid the hard lines by as much as fifty feet; said fifty feet being in either (or both) the north-south and/or east-west directions as applicable.

COG Operating LLC

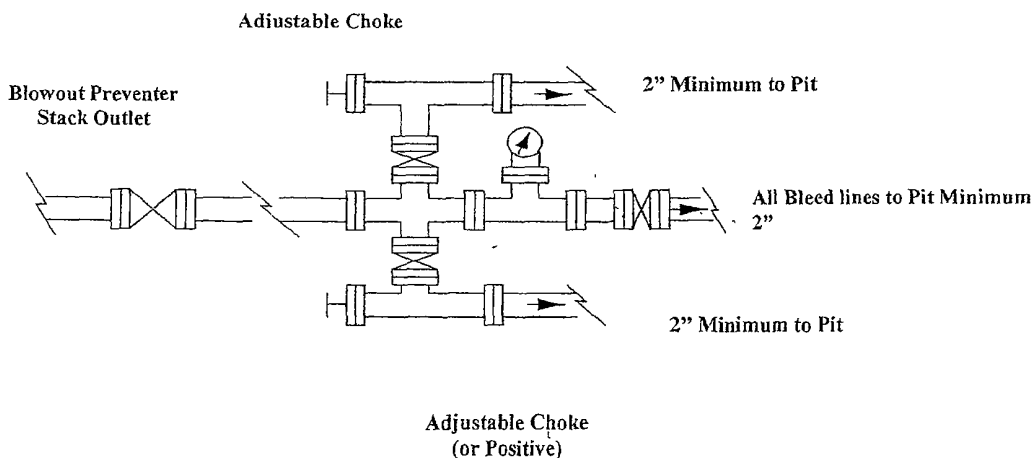
Exhibit #9

BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

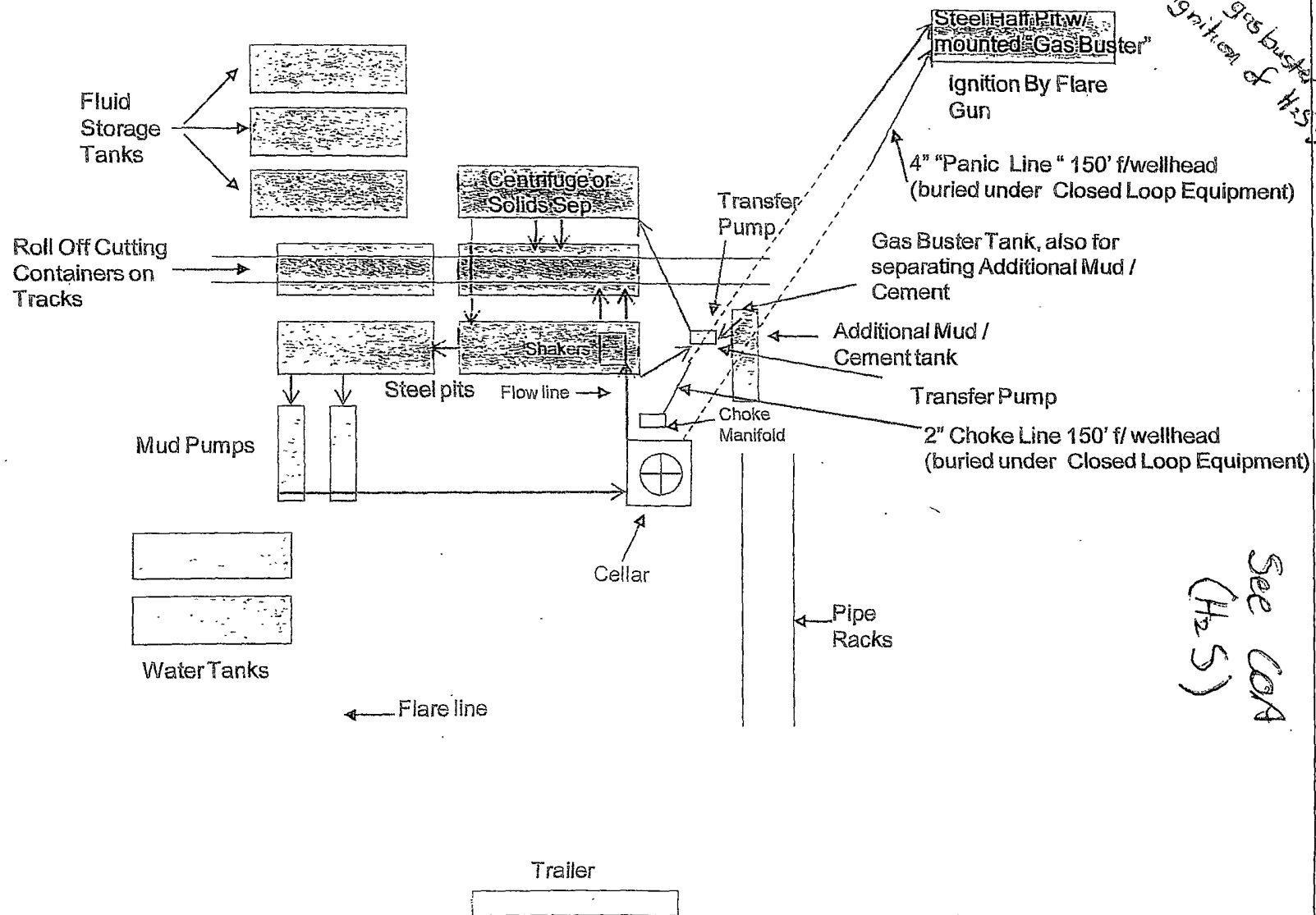
Choke Manifold Requirement (2000 psi WP)
No Annular Required



NOTES REGARDING THE BLOWOUT PREVENTERS**Master Drilling Plan
Eddy County, New Mexico**

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

COG Operating LLC
Closed Loop Equipment Diagram



Closed Loop Operation & Maintenance Procedure

All drilling fluid circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) are circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid is continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll off containers are lined and de-watered with fluids re-circulated into system.

Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

This equipment will be maintained 24 hrs./day by solids control personnel and or rig crews that stay on location.

Cuttings will be hauled to either:

CRI (permit number R9166)

or

GMI (permit number 711-019-001)

dependent upon which rig is available to drill this well.



Steel Tank



110'

170'



Well Head

130'

30'x30'
Stinger

140'

TOP SOIL

ROAD
ACCESS

Exhibit

Not To Scale

COG OPERATING LLC
Rig Layout-Closed Loop
System Dodd #613

DISTRICT 2-- CHECKLIST FOR INTENTS TO DRILL

Operator COG Ops OGRID # 22913
Well Name & # Dodd Federal UNIT 613 Surface Type (F) (S) (P)
Location: UL C Sect 14 Township 17 s, RNG 29 e, Sub-surface Type (F) (S) (P)

OGRID # 4275

Surface Type (F) (S) (P)

Sub-surface Type (F) (S) (P)

- A. Date C101 rec'd 11/7/2011 C101 reviewed 11/24/2011

- B. 1. Check mark, Information is OK on Forms:

OGRID ☒, BONDING ☒, PROP CODE ☒, WELL # ☒, SIGNATURE ☒

2. Inactive Well list as of: 11/21/2011 # wells 3071, # Inactive wells 8

- a. District Grant APD but see number of inactive wells:

No letter required ☒; Sent Letter to Operator _____, to Santa Fe _____

3. Additional Bonding as of: 11/21/2011

- a. District Denial because operator needs addition bonding:

No Letter required ✓; Sent Letter to Operator _____, To Santa Fe _____

- b. District Denial because of ~~inactive~~ well list and Financial Assurance:

No Letter required ✓; Sent Letter to Operator , To Santa Fe

- C, C102 YES , NO , Signature

1. Pool Grayburg Jackson; SR-OG Code 28509

- a. Dedicated acreage 40, What Units

- b. SUR. Location Standard ☒ : Non-Standard Location

- c. Well shares acres: Yes , No , # of wells plus this well #

2. 2nd. Operator in same acreage, Yes , No

Agreement Letter _____, Disagreement letter _____

3. Intent to Directional Drill Yes / , No /

- a. Dedicated acreage ✓, What Units

- b. Bottomhole Location Standard, Non-Standard Bottomhole

4. Downhole Commingle: Yes ☐ No ☒

- | a. Pool #2 | Code | Acres |
|------------|------|-------|
|------------|------|-------|

- Pool #3 _____, Code _____, Acres _____

- Pool #4 _____, Code _____, Acres _____

5. POTASH Area Yes ☐ No ☒

- D. Blowout Preventer Yes ☒, No ☐

- E. H2S Yes ☒, No ☐

- F. C144 Pit Registration Yes , No

- G. Does APD require Santa Fe Approval:

1. Non-Standard Location: Yes , No ✓, NSL #

2. Non-Standard Proration: Yes ☐, No ☒, NSP # _____

3. Simultaneous Dedication: Yes ☐, No ☒, SD # _____

Number of wells Plus # ✓

4. Injection order Yes ☐ , No ☒ ; PMX # _____ or WFX # _____

5. SWD order Yes , NO ☒; SWD #

6. DHC from SF _____; DHC-HOB _____; Holding _____

7. OCD Approval Date 11/21/2011

API #30-015.. 391017

8. Reviewers