## COG Operating LLC

## Hydrogen Sulfide Drilling Operation Plan

# I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards an characteristics of hydrogen sulfide (H2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

## II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

1. **Well Control Equipment:**

   A. Flare line.

   B. Choke manifold with minimum of one remotely operated choke.

   C. Closed Loop Blow Down Tank

   D. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

   E. Auxiliary equipment may include if applicable: mud-gas separator, annular preventer & rotating head.

2. **Protective equipment for essential personnel:**

   A. SCBA (Self contained breathing apparatus) 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. **H2S detection and monitoring equipment:**

   A. Portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram.

   B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

   B. All elastomers used for packing and seals shall be H2S trim.

7. **Communication:**

   A. Radio communications in company vehicles including cellular telephone and 2-way radio.

   B. Land line (telephone) communication at Office.

8. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

## EXHIBIT #7

# WARNING

## YOU ARE ENTERING AN H2S

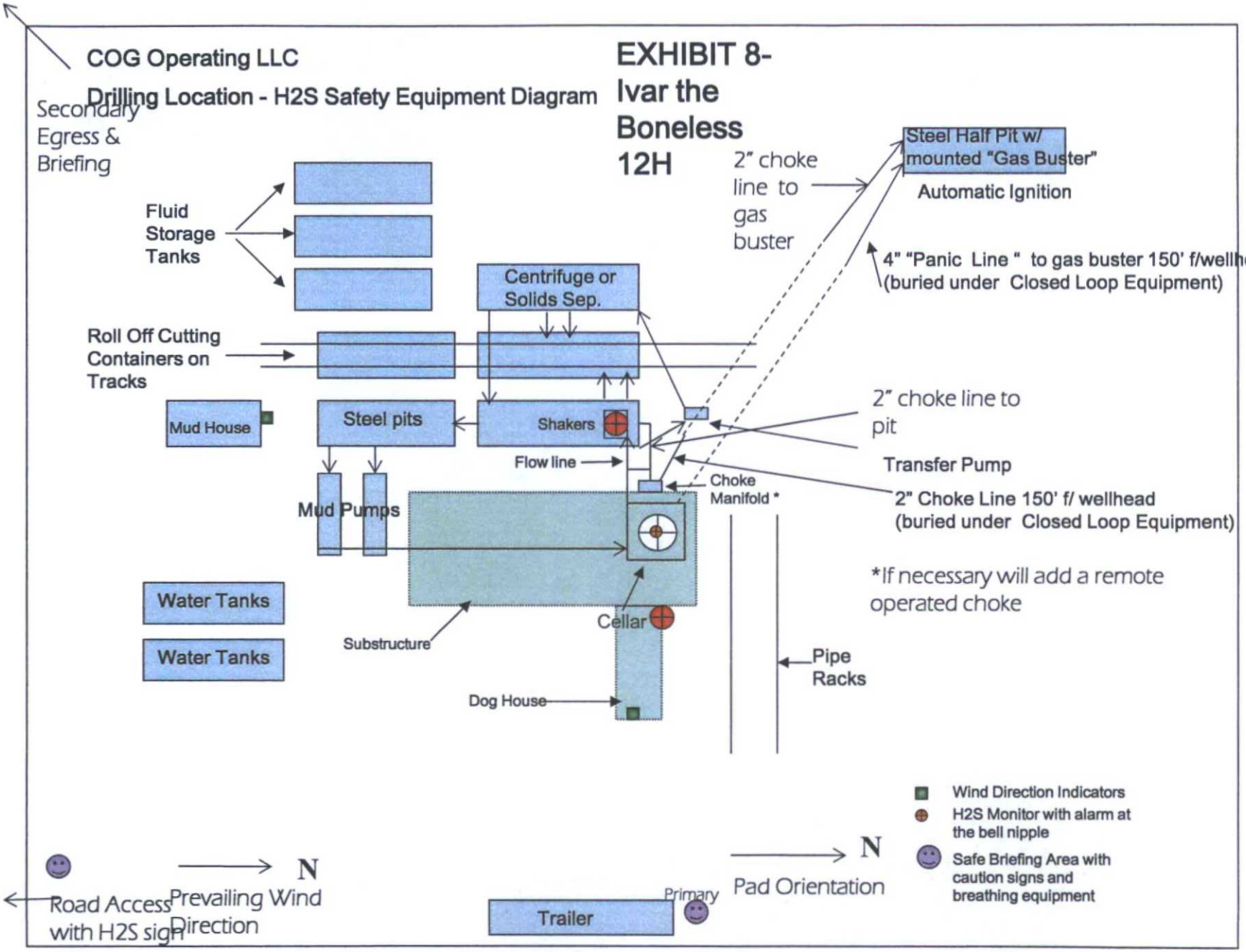
## AUTHORIZED PERSONNEL ONLY

1. BEARDS OR CONTACT LENSES NOT ALLOWED
2. HARD HATS REQUIRED
3. SMOKING IN DESIGNATED AREAS ONLY
4. BE WIND CONSCIOUS AT ALL TIMES
5. CHECK WITH COG OPERATING FOREMAN AT

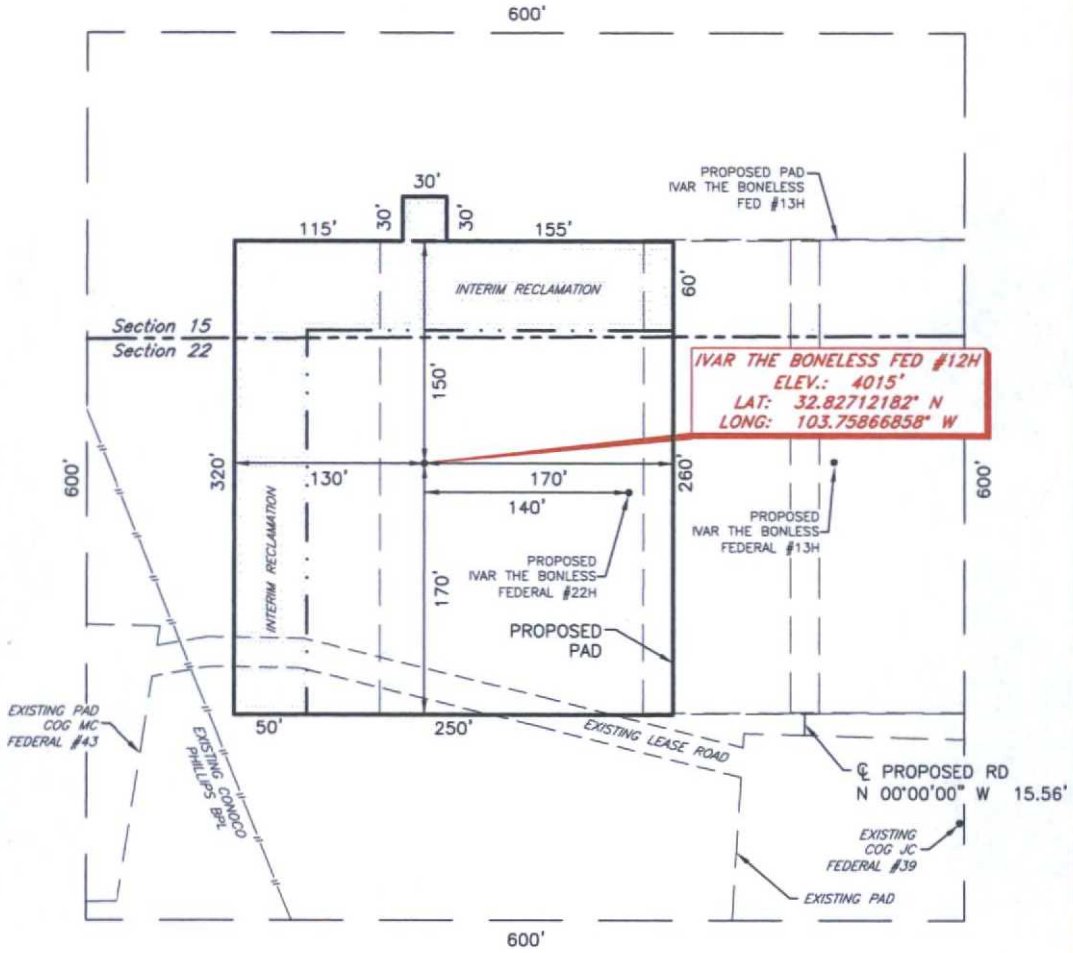
## COG OPERATING LLC
## 1-432-683-7443
## 1-575-746-2010

***EDDY COUNTY EMERGENCY NUMBERS***
ARTESIA FIRE DEPT. 575-746-5050
ARTESIA POLICE DEPT. 575-746-5000
EDDY CO. SHERIFF DEPT. 575-746-9888

***LEA COUNTY EMERGENCY NUMBERS***
HOBBS FIRE DEPT. 575-397-9308
HOBBS POLICE DEPT. 575-397-9285
LEA CO. SHERIFF DEPT. 575-396-1196


COG Operating LLC
Drilling Location - H2S Safety Equipment Diagram
EXHIBIT 8-
Ivar the
Boneless
12H
Secondary
Egress &
Briefing
Fluid
Storage
Tanks
Centrifuge or
Solids Sep.
Roll Off Cutting
Containers on
Tracks
Mud House
Steel pits
Shakers
Flow line
Mud Pumps
Choke
Manifold *
Water Tanks
Water Tanks
Substructure
Cellar
Dog House
Pipe
Racks
2" choke
line to
gas
buster
Steel Half Pit w/
mounted "Gas Buster"
Automatic Ignition
4" "Panic Line " to gas buster 150' f/wellhead
(buried under Closed Loop Equipment)
2" choke line to
pit
Transfer Pump
2" Choke Line 150' f/ wellhead
(buried under Closed Loop Equipment)
*If necessary will add a remote
operated choke
Wind Direction Indicators
H2S Monitor with alarm at
the bell nipple
Safe Briefing Area with
caution signs and
breathing equipment
N
Pad Orientation
Primary
Trailer
N
Prevailing Wind
Direction
Road Access
with H2S sign

# COG OPERATING, LLC
## INTERIM RECLAMATION
## IVAR THE BONELESS FED #12H
## (85' FNL & 1283' FWL)
### SECTION 22, T17S, R32E
### N. M. P. M., LEA CO., NEW MEXICO




*DIRECTIONS TO LOCATION*

*From the intersection of CR-126 (Conoco Rd.) and CR-126A (Maljamar Rd.) Go North on CR-126A approx. 0.6 miles to a lease road on the right;*

*Turn right and go Southeast approx. 0.3 miles to a lease road;*

*Turn left and go North approx. 382 feet through existing pad;*

*Location is 440 feet Northwest of JC Fed #39 pumping unit.*

THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA IS SHOWN FROM A PREVIOUS SURVEY REFERENCED HEREON.

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location plat from an actual survey made on the ground under my direct supervision, said unclassiefied survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR

Robert M. Howett
Robert M. Howett NM PS 19680

SCALE: 1" = 100'
0 50 100

BEARINGS ARE NAD 83 GRID - NM EAST
DISTANCES ARE GROUND.

Firm No.: TX 10193838 NM 4655451



| NO. | REVISION | DATE |
|---|---|---|
| | | |
| | | |
| | | |

JOB NO.: LS140548
DWG. NO.: 140548PAD

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 1-14-2015
SURVEYED BY: IE/DH
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1