District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., 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 and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
Permit 906

APPLICATION FOR PERMIT TO DRILL

Operator Name and Address	OGRID Number
CHESAPEAKE OPERATING, INC. PO Box 18496 Oklahoma City, OK 73154-0496	147179
	API Number 30-015-33412

Property Code	Property Name	Well No.
33998	ESPERANZA 4	004

Surface Location

UL or Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
N	4	22S	27E	N	660	S	1530	W	Eddy

Bottom Holes

Pool: Carlsbad;Morrow, South (Pro Gas)

UL or Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
N	4	22S	27E	N	1980	S	660	W	Eddy

Work Type	Well Type	Cable/Rotary	Lease Type	Ground Level Elevation
New Well	GAS		Private	3134
Multiple	**Proposed Depth**	**Formation**	**Contractor**	**Spud Date**
N	12000	Morrow		05/20/2004

Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	440	460	0
Intl	12.25	9.625	40	5225	1230	0
Prod	8.75	5.5	17	12000	1205	4500

Casing/Cement Program: Additional Comments

Cmt 13 3/8 csg w/460 sx C1 C + 2% CaCl2 14.8 ppg. 1.34 yield; cmt. 9 5/8 csg. w/1020 sx of 50:50 Poz C1 C + 5% D44+ 10% D20+ .1pps D29+ 3 pps D42 11.9 ppg, 2.48 yield Tail in w/210 sx of C1 C + .1% D13 14.8 ppg. 1.32 yield circ to surf.; 5 1/2 csg. cmtd w/825 sx of 50:50 Poz C1. H + 5% D44 + 10% D20 + .1pps D29+ 5 pps D42 11.9 ppg, 2.5 yield. Tail: 380 sx of 50:50 Poz C1 H + 5% D44 + 2%D20 + .4% D167+ 3% D174+ .15% D800 14.4 ppg. 1.35 yield TOC @ 4500.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	2500	
Double Ram	5000	5000	

Precision Drilling

COMPUTALOG

PROPOSAL

FOR

CHESAPEAKE OPERATING, INC

ESPERANZA 4 WELL #4

30-015-33412

FROM SURFACE LOCATION:
660' FSL & 1530' FWL
SECTION 4, T-22S, R-27E
EDDY COUNTY, NM

RECEIVED
MAY 17 2004
OCD-ARTESIA

WELL FILE: **DRAFT**

APRIL 30, 2004

COMPUTALOG DRILLING SERVICES
9802 W. I-20
Midland, Texas
Phone: (432) 561-5500 Fax: (432) 561-5525

COMPUTALOG DRILLING SERVICES

Client : Chesapeake Operating, Inc.
Well Name : Esperanza 4 Well #4
Location : Eddy County, NM

Date : 4/30/04
File : DRAFT

KB Elevation : NA **Gr Elevation : NA**

Vertical Section Calculated Along Azimuth 326.61°

MD ft	Inc deg	Azi deg	TVD ft	North ft	East ft	V'Sect ft	D'Leg °/100	Build °/100	Turn °/100
			KOP, Build 1.5°/100'						
5300.00	**0.00**	**0.00**	**5300.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
5400.00	1.50	326.61	5399.99	1.09	-0.72	1.31	1.50	1.50	-33.39
5500.00	3.00	326.61	5499.91	4.37	-2.88	5.23	1.50	1.50	0.00
5600.00	4.50	326.61	5599.69	9.83	-6.48	11.77	1.50	1.50	0.00
5700.00	6.00	326.61	5699.27	17.47	-11.52	20.92	1.50	1.50	0.00
5800.00	7.50	326.61	5798.57	27.28	-17.98	32.68	1.50	1.50	0.00
5900.00	9.00	326.61	5897.54	39.27	-25.88	47.03	1.50	1.50	0.00
6000.00	10.50	326.61	5996.09	53.41	-35.20	63.96	1.50	1.50	0.00
6100.00	12.00	326.61	6094.16	69.69	-45.93	83.47	1.50	1.50	0.00
6200.00	13.50	326.61	6191.70	88.12	-58.08	105.54	1.50	1.50	0.00
6300.00	15.00	326.61	6288.62	108.67	-71.63	130.15	1.50	1.50	0.00
6400.00	16.50	326.61	6384.86	131.34	-86.56	157.30	1.50	1.50	0.00
6500.00	18.00	326.61	6480.36	156.10	-102.88	186.95	1.50	1.50	0.00
				End of Build					
6556.25	18.84	326.61	6533.73	170.94	-112.66	204.73	1.50	1.50	0.00
6600.00	18.84	326.61	6575.13	182.74	-120.44	218.86	0.00	0.00	0.00
6700.00	18.84	326.61	6669.77	209.70	-138.21	251.16	0.00	0.00	0.00
6800.00	18.84	326.61	6764.41	236.67	-155.99	283.45	0.00	0.00	0.00
6900.00	18.84	326.61	6859.05	263.64	-173.76	315.75	0.00	0.00	0.00
7000.00	18.84	326.61	6953.69	290.61	-191.54	348.05	0.00	0.00	0.00
7100.00	18.84	326.61	7048.33	317.58	-209.31	380.35	0.00	0.00	0.00
7200.00	18.84	326.61	7142.97	344.55	-227.09	412.65	0.00	0.00	0.00
7300.00	18.84	326.61	7237.61	371.51	-244.86	444.95	0.00	0.00	0.00
7400.00	18.84	326.61	7332.25	398.48	-262.64	477.25	0.00	0.00	0.00
7500.00	18.84	326.61	7426.89	425.45	-280.41	509.55	0.00	0.00	0.00
7600.00	18.84	326.61	7521.53	452.42	-298.19	541.85	0.00	0.00	0.00
7700.00	18.84	326.61	7616.17	479.39	-315.96	574.15	0.00	0.00	0.00
7800.00	18.84	326.61	7710.81	506.36	-333.73	606.44	0.00	0.00	0.00
7900.00	18.84	326.61	7805.45	533.32	-351.51	638.74	0.00	0.00	0.00
8000.00	18.84	326.61	7900.09	560.29	-369.28	671.04	0.00	0.00	0.00
8100.00	18.84	326.61	7994.73	587.26	-387.06	703.34	0.00	0.00	0.00
8200.00	18.84	326.61	8089.37	614.23	-404.83	735.64	0.00	0.00	0.00
8300.00	18.84	326.61	8184.01	641.20	-422.61	767.94	0.00	0.00	0.00
8400.00	18.84	326.61	8278.65	668.17	-440.38	800.24	0.00	0.00	0.00
8500.00	18.84	326.61	8373.29	695.13	-458.16	832.54	0.00	0.00	0.00
8600.00	18.84	326.61	8467.94	722.10	-475.93	864.84	0.00	0.00	0.00
8700.00	18.84	326.61	8562.58	749.07	-493.71	897.13	0.00	0.00	0.00
8800.00	18.84	326.61	8657.22	776.04	-511.48	929.43	0.00	0.00	0.00
8900.00	18.84	326.61	8751.86	803.01	-529.25	961.73	0.00	0.00	0.00

COMPUTALOG DRILLING SERVICES

Client : Chesapeake Operating, Inc.
Well Name : Esperanza 4 Well #4
Location : Eddy County, NM

Date : 4/30/04
File : DRAFT

KB Elevation : NA **Gr Elevation : NA**

Vertical Section Calculated Along Azimuth 326.61°

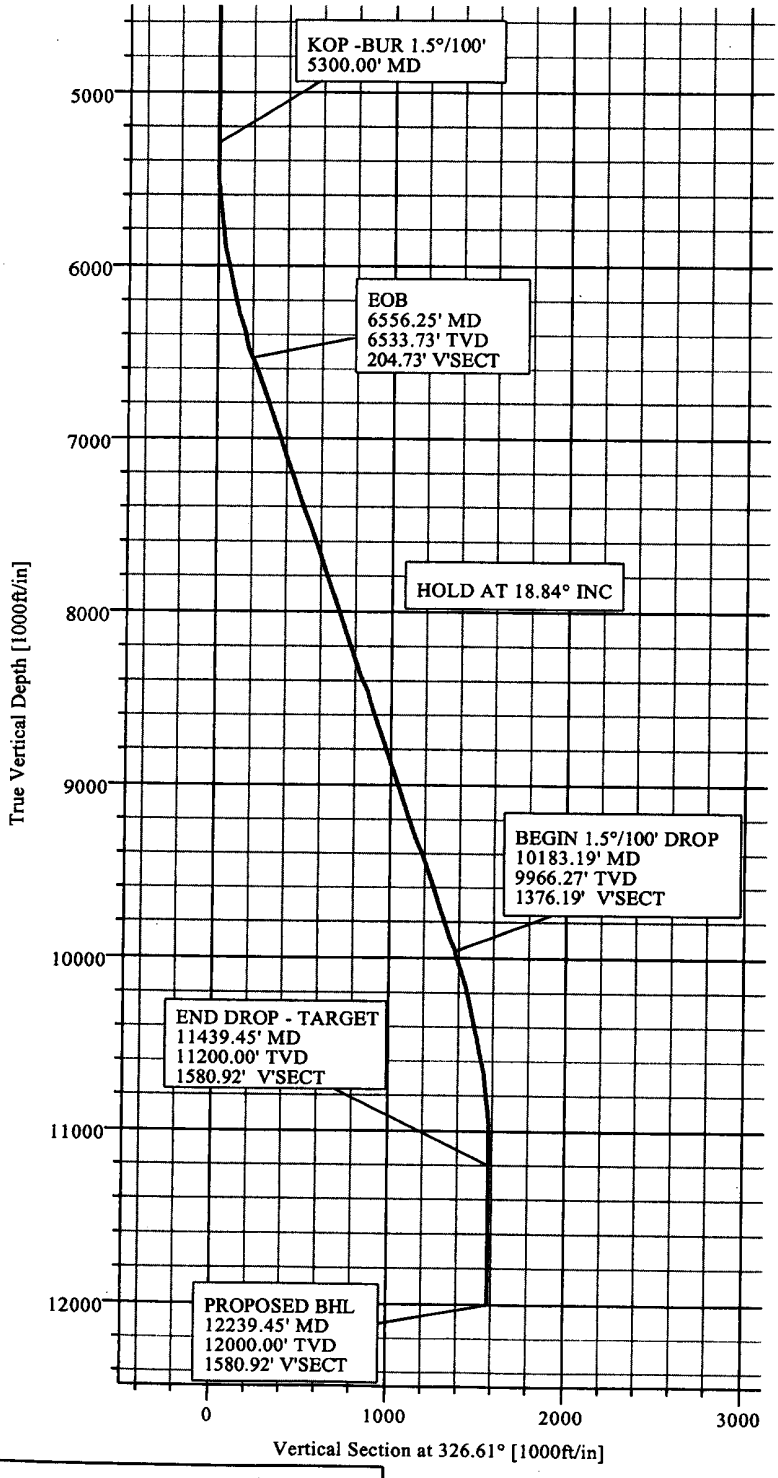
MD ft	Inc deg	Azi deg	TVD ft	North ft	East ft	V'Sect ft	D'Leg °/100	Build °/100	Turn °/100
9000.00	18.84	326.61	8846.50	829.97	-547.03	994.03	0.00	0.00	0.00
9100.00	18.84	326.61	8941.14	856.94	-564.80	1026.33	0.00	0.00	0.00
9200.00	18.84	326.61	9035.78	883.91	-582.58	1058.63	0.00	0.00	0.00
9300.00	18.84	326.61	9130.42	910.88	-600.35	1090.93	0.00	0.00	0.00
9400.00	18.84	326.61	9225.06	937.85	-618.13	1123.23	0.00	0.00	0.00
9500.00	18.84	326.61	9319.70	964.82	-635.90	1155.53	0.00	0.00	0.00
9600.00	18.84	326.61	9414.34	991.78	-653.68	1187.83	0.00	0.00	0.00
9700.00	18.84	326.61	9508.98	1018.75	-671.45	1220.12	0.00	0.00	0.00
9800.00	18.84	326.61	9603.62	1045.72	-689.23	1252.42	0.00	0.00	0.00
9900.00	18.84	326.61	9698.26	1072.69	-707.00	1284.72	0.00	0.00	0.00
10000.00	18.84	326.61	9792.90	1099.66	-724.77	1317.02	0.00	0.00	0.00
10100.00	18.84	326.61	9887.54	1126.63	-742.55	1349.32	0.00	0.00	0.00
				Begin 1.5°/100' Drop					
10183.19	18.84	326.61	9966.27	1149.06	-757.34	1376.19	0.00	0.00	0.00
10200.00	18.59	326.61	9982.19	1153.57	-760.30	1381.58	1.50	-1.50	0.00
10300.00	17.09	326.61	10077.38	1179.15	-777.16	1412.22	1.50	-1.50	0.00
10400.00	15.59	326.61	10173.34	1202.64	-792.65	1440.36	1.50	-1.50	0.00
10500.00	14.09	326.61	10270.00	1224.03	-806.74	1465.97	1.50	-1.50	0.00
10600.00	12.59	326.61	10367.30	1243.29	-819.44	1489.05	1.50	-1.50	0.00
10700.00	11.09	326.61	10465.16	1260.43	-830.74	1509.57	1.50	-1.50	0.00
10800.00	9.59	326.61	10563.54	1275.41	-840.61	1527.52	1.50	-1.50	0.00
10900.00	8.09	326.61	10662.35	1288.25	-849.07	1542.89	1.50	-1.50	0.00
11000.00	6.59	326.61	10761.52	1298.92	-856.10	1555.67	1.50	-1.50	0.00
11100.00	5.09	326.61	10861.00	1307.41	-861.71	1565.84	1.50	-1.50	0.00
11200.00	3.59	326.61	10960.71	1313.74	-865.87	1573.41	1.50	-1.50	0.00
11300.00	2.09	326.61	11060.59	1317.88	-868.60	1578.37	1.50	-1.50	0.00
11400.00	0.59	326.61	11160.56	1319.83	-869.89	1580.71	1.50	-1.50	0.00
				End of Drop / Target					
11439.45	**0.00**	**326.61**	**11200.00**	**1320.00**	**-870.00**	**1580.92**	**1.50**	**-1.50**	**0.00**
11500.00	0.00	326.61	11260.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
11600.00	0.00	326.61	11360.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
11700.00	0.00	326.61	11460.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
11800.00	0.00	326.61	11560.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
11900.00	0.00	326.61	11660.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
12000.00	0.00	326.61	11760.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
12100.00	0.00	326.61	11860.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
12200.00	0.00	326.61	11960.55	1320.00	-870.00	1580.92	0.00	0.00	0.00
				Proposed BHL					
12239.45	**0.00**	**326.61**	**12000.00**	**1320.00**	**-870.00**	**1580.92**	**0.00**	**0.00**	**0.00**

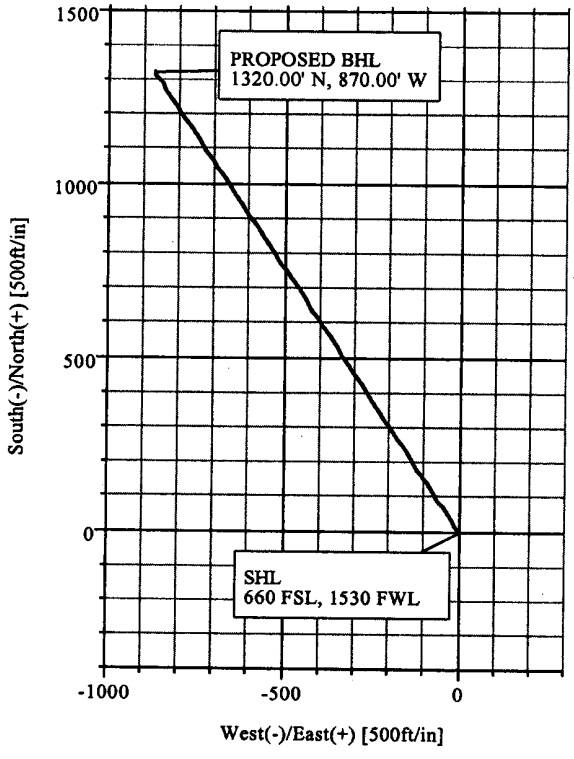
Bottom Hole Closure 1580.92ft Along Azimuth 326.61°

CHESAPEAKE OPERATING, INC.

ESPERANZA 4 WELL #4
SEC 4 T22S R27E
660 FSL, 1530 FWL
EDDY COUNTY, NM

Precision Drilling





COMPUTALOG
Drilling Services

COMPANY:	CHESAPEAKE OPERATING, INC.
WELL NAME:	ESPERANZA 4 WELL #4
LOCATION:	EDDY COUNTY, NM
FILE:	DRAFT
PROPOSAL/COMPLETION:	PROPOSAL
DATE:	APRIL 30, 2004
PREPARED BY:	RH

Oil Conservation Commission
State of New Mexico
1625 N. French Drive
Hobbs, New Mexico 88240

Attention: Mr. Bryan Aarant

Re: Esperanza #4

Dear Bryan:

The subject well is not located within the city limits of Carlsbad. The nearest public dwelling is approximately ½ mile away.

If you need anything further, please, let me know.

Yours truly,

Brenda Coffman

Brenda Coffman
Regulatory Analyst

State of New Mexico
Oil Conservation Commission
1301 W. Grand Avenue
Artesia, New Mexico 88210

Attention: Mr. Bryan Aarant

RE: Chesapeake Operating, Inc.
Esperanza #4
Section 4, T22S, R27E, UL N
Eddy County, New Mexico

Dear Bryan:

This letter is in reference to the OCD requirements for an H2S contingency plan for the captioned well. No H2S, abnormal pressures or temperatures are expected in the drilling of the above captioned well. H2S detection equipment will be installed prior to the top of the Delaware formation as a precautionary measure.

A copy of the Hydrogen Sulfide Drilling Operations Plan is enclosed for your review.

Yours truly,

Nick Newland/bc

Nick Newland
Drilling Superintendent

BC
Attachment (1)

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
March 12, 2004

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 ☐ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☐

Operator: Chesapeake Operating Inc Telephone: (432) 683-7443 e-mail address: nnewland@chk-energy.com
Address: 550 W. Texas Ave Ste. 1300 Midland, TX 79705
Facility or well name: Esperanza # 4 API #: _____ U/L or Qtr/Qtr _____ Sec _____ T _____ R _____
County: Eddy Latitude _____ Longitude _____ NAD: 1927 ☐ 1983 ☐ Surface Owner Federal ☐ State ☐ Private ☐ Indian ☐

Pit	Below-grade tank	
Type: Drilling ☑ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☑ Unlined ☐ Liner type: Synthetic ☑ Thickness 12 mil Clay ☐ Volume _____ bbl	Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	

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: onsite ☐ offsite ☐ If offsite, name of facility _____. (3) Attach a general description of remedial action taken including 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.

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: 5-9-07
Printed Name/Title Nick Newland, Drlg. Supt. Signature Nick Newland

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:
Date: _____
Printed Name/Title _____ Signature _____

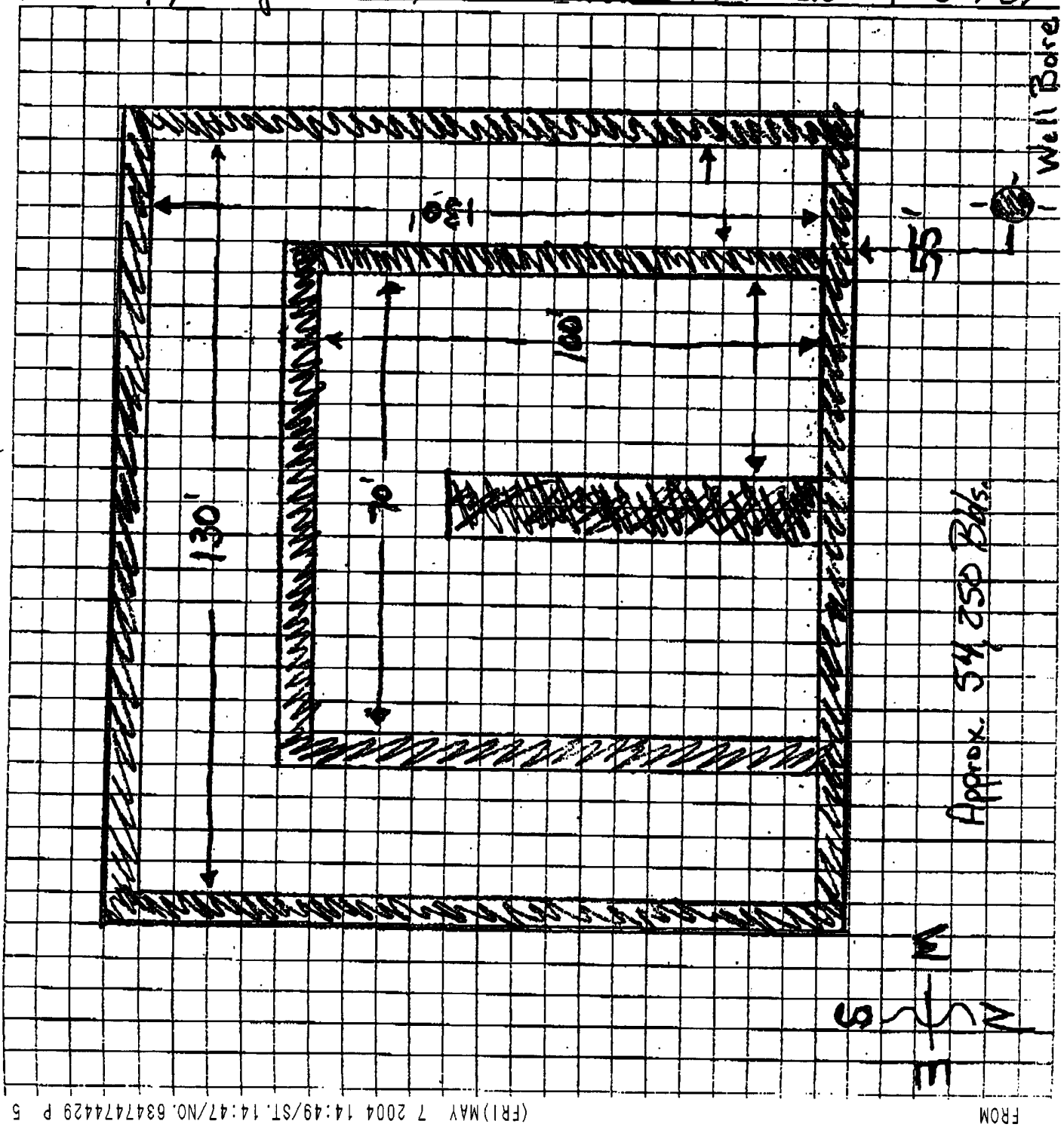
MIDLAND, TX (915) 684-7446
OKLAHOMA CITY, OK (405) 810-0021
VICTORIA, TX (361) 576-5297

AMBAR LONE STAR FLUID SERVICES

HOUSTON, TX (281) 877-120
LAFAYETTE, LA (337) 237-530
NEW ORLEANS, LA (504) 566-041

Drlg. Pit

Subject: Chesapeake Operating, Inc.		Page No. 1	of 2
File: Esperanza #4		By: N. Newland	Date: 5-7-04

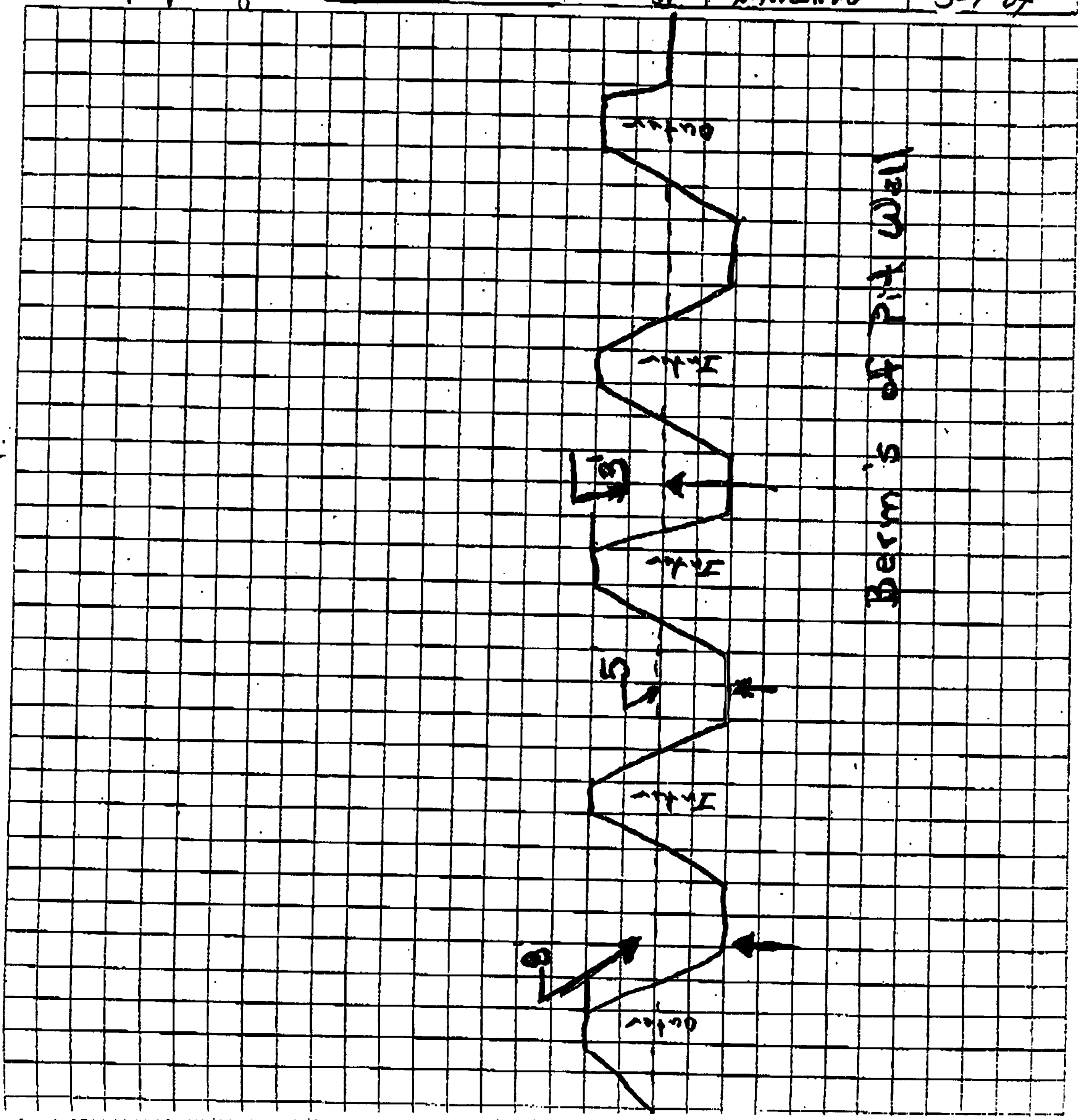


MIDLAND, TX (915) 684-7446
OKLAHOMA CITY, OK (405) 810-0021
VICTORIA, TX (361) 576-5297

AMBAR LONE STAR FLUID SERVICES

HOUSTON, TX (281) 877-120(
LAFAYETTE, LA (337) 237-530(
NEW ORLEANS, LA (504) 586-041

Subject: Chesepeake Operating, Inc.	Page No. 2	of 2	
File: Esperanza #4	By: N. Newland	Date: 5-7-04	



CHESAPEAKE OPERATING INC

DRILLING PROGNOSIS

WELL : Esperanza 4 #4

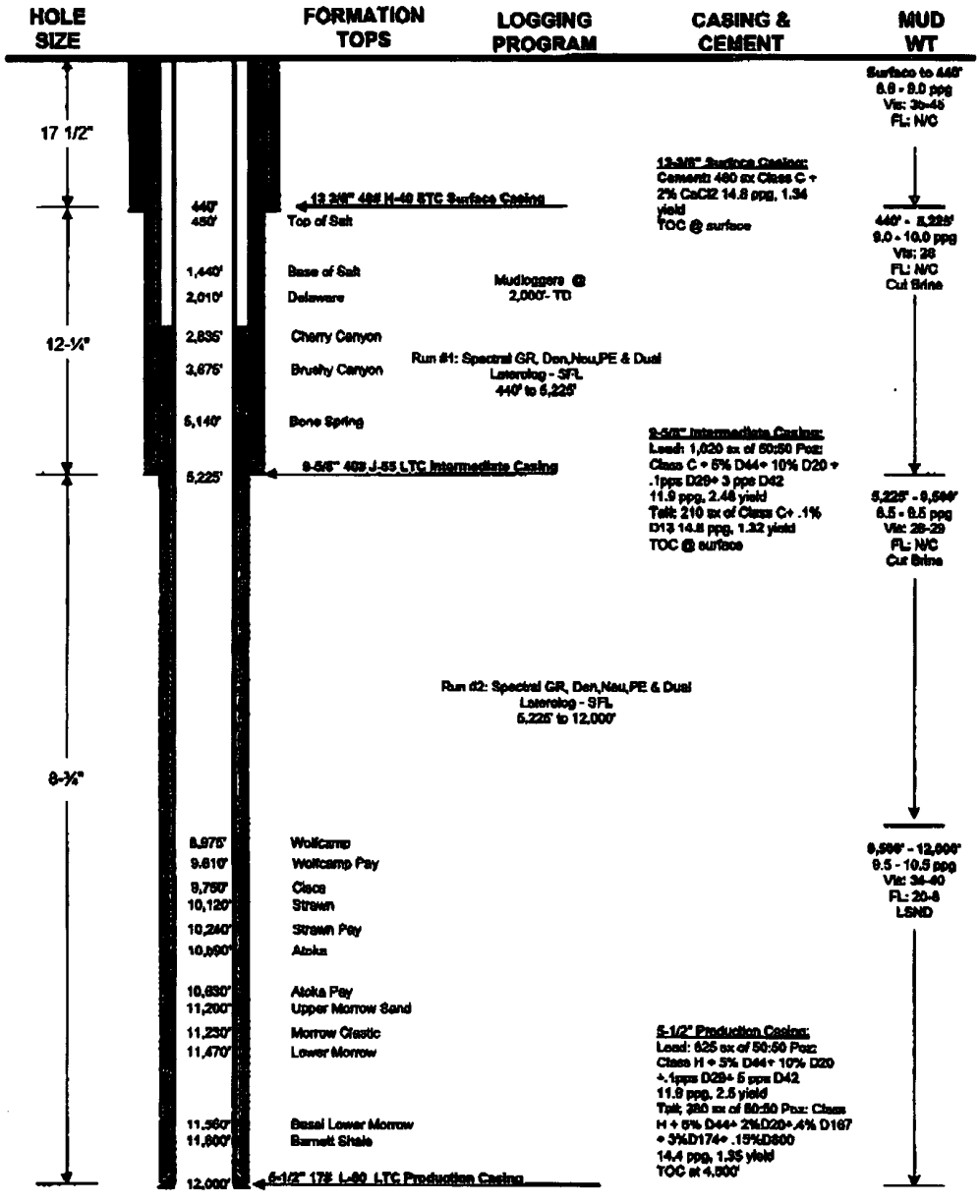
SHL : Section 4; T-22S, R-27E (660' FSL & 1,530' FWL)

TARGET : Section 4; T-22S, R-27E (1,980' FSL & 660' FWL)

COUNTY : Eddy **STATE** : New Mexico

FIELD : Esperanza Prospect

ELEVATION : GL - 3,135' (est) KB - 3,160' (est)



[redacted]

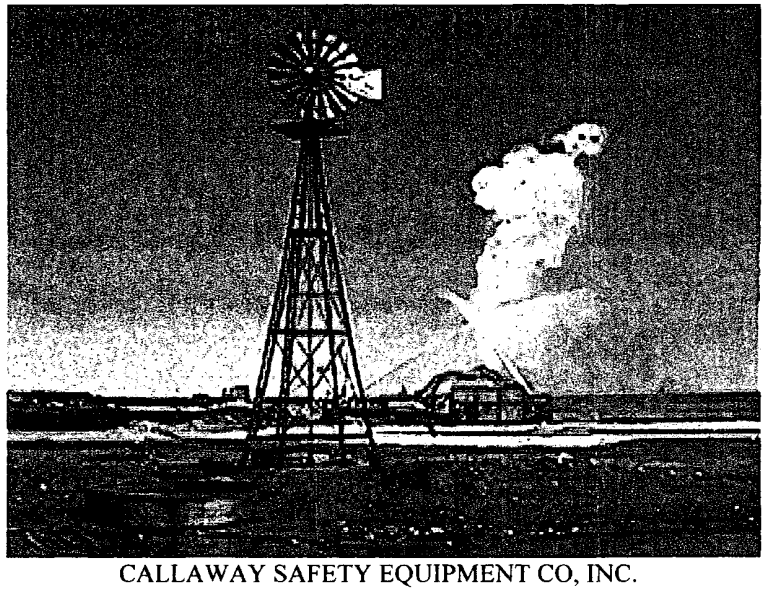
PREPARED BY: DFD **DATE:** 03/17/04

APPROVED BY: _____ **DATE:** _____

Chesapeake Operating, Inc.

Legals:
The Esperanza #4
660' FSL & 1530' FWL
Section 4, Township 22 South, Range 27 East
Basin SurveyS
N.M.P.M, Eddy County, New Mexico

"CONTINGENCY PLAN"



CALLAWAY SAFETY EQUIPMENT CO, INC.
11020 W. Hwy. 80 East
Odessa, Texas 79765
(432) 561-5049

Table Of Contents

I. H_2S CONTINGENCY PLAN SECTION

Scope

This contingency plan establishes guidelines for all company employees and contract employees whose work activities may involve exposure to Hydrogen Sulfide gas (H_2S).

Objective

1. Prevent any and all accidents, and prevent the uncontrolled release of H_2S into the atmosphere.
2. Provide proper evacuation procedures to cope with emergencies.
3. Provide immediate and adequate medical attention should an injury occur.

Discussion of Plan

Suspected Problem Zones: ___ San Andres & Cisco Reef

Implementation: This plan, with all details, is to be fully implemented before drilling to the _San Andres & Cisco Reef _

Emergency Response Procedure: This section outlines the conditions and denotes steps to be taken in the event of an emergency.

Emergency Equipment and Procedure: This section outlines the safety and emergency equipment that will be required for the drilling of this well.

Training Provisions: This section outlines the training provisions that must be adhered to prior to drilling into the San Andres & Cisco Reef Formations.

Emergency Call Lists: Included are the telephone numbers of all persons that would need to be contacted should an emergency exists.

Briefing: This section deals with the briefing of all people involved in the drilling operation.

Public Safety: Public Safety Personnel will be made aware of the drilling of this well.

CheckLists: Status Check Lists and Procedural Check Lists have been included to insure adherence to the plan.

General Information: A general information section has been included to supply support information.

II. EMERGENCY PROCEDURES SECTION

Emergency Procedures

I. In the event of any evidence of H_2S level above 10 ppm, take the following steps immediately:
   - A. Secure breathing apparatus.
   - B. Order non-essential personnel out of the danger zone.
   - C. Take steps to determine if the H_2S level can be corrected or suppressed, and if so, proceed with normal operations.

II. If uncontrollable conditions occur, proceed with the following:
   - A. Take steps to protect and/or remove any public downwind of the rig including partial evacuation or isolation. Notify necessary public safety personnel and the Texas Railroad Commission of the situation.
   - B. Remove all personnel to the Safe Briefing Area.
   - C. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation.
   - D. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety procedures.

III. Responsibility
   - A. The Company Approved Supervisor shall be responsible for the total implementation of the plan.
   - B. The Company Approved Supervisor shall be in complete command during any emergency.
   - C. The Company Approved Supervisor shall designate a back up Supervisor in the event that he/she is not available.

Emergency Procedure Implementation

I. Drilling or Tripping
   A. All Personnel
      1. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
      2. Check status of other personnel (buddy system).
      3. Secure breathing apparatus.
      4. Await orders from Supervisor.
   B. Drilling Foreman
      1. Report to the upwind Safe Briefing Area.
      2. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
      3. Determine the concentration of H2S.
      4. Assess the situation and take appropriate control measures.
   C. Tool Pusher
      1. Report to the upwind Safe Briefing Area.
      2. Don Breathing Apparatus and return to the point of release with the Drilling Foreman or Driller (buddy system).
      3. Determine the concentration of H2S.
      4. Assess the situation and take appropriate control measures.
   D. Driller
      1. Don escape unit.
      2. Check monitor for point of release.
      3. Report to the Safe Briefing Area.
      4. Check the status of other personnel (in a rescue attempt, always use the buddy system).
      5. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.
      6. Assume the responsibility of the Drilling Foreman and Tool Pusher until they arrive, in the event of their absence.
   E. Derrick Man
      1. Remain in the Safe Briefing Area until otherwise instructed by Supervisor.
   F. Mud Engineer
      1. Report to Safe Briefing Area.
      2. When instructed, begin check of mud for pH level and H2S level.
   G. Safety Personnel
      1. Don appropriate breathing apparatus.
      2. Check status of all personnel
      3. Await instructions from Drilling Foreman or Tool Pusher.

II. Taking A Kick
   A. All personnel report to Safe Briefing Area.
   B. Follow standard BOP procedures.

III. Open Hole Logging
   A. All unnecessary personnel should leave the rig floor.
   B. Drilling Foreman and Safety personnel should monitor the conditions and make necessary safety equipment recommendations.

IV. Running Casing or Plugging
   A. Follow "Drilling or Tripping" procedures.
   B. Assure that all personnel have access to protective equipment.

Simulated Blowout Control Drills

All drills will be initiated by activating alarm devices (air horn). One long blast, on air horn, for ACTUAL and SIMULATED Blowout Control Drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill 1	Bottom Drilling
Drill 2	Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire pit drill assignment. The times must be recorded on the IADC Driller's Log as "Blowout Control Drill".

Drill No.:_____
Reaction Time to Shut-In:_____minutes,_____seconds.
Total Time to Complete Assignment:_____minutes,_____seconds.

I. Drill Overviews
   A. Drill No. 1--Bottom Drilling
      1. Sound the alarm immediately.
      2. Stop the rotary and hoist kelly joint above the rotary table.
      3. Stop the circulatory pump.
      4. Close drill pipe rams.
      5. Record casing and drill pipe shut-in pressures and pit volume increases.
   B. Drill No. 2--Tripping Drill Pipe
      1. Sound the alarm immediately.
      2. Position the upper tool joint just above the rotary table and set slips.
      3. Install a full opening valve or inside blowout preventor tool in order to close the drill pipe.
      4. Close the drill pipe rams.
      5. Record the shut-in annular pressure.

II. Crew Assignments

A. Drill No. 1--Bottom Drilling

1. Driller
   a. Stop the rotary and hoist kelly joint above the rotary table.
   b. Stop the circulatory pump.
   c. Check flow.
   d. If flowing, sound the alarm immediately.
   e. Record the shut-in drill pipe pressure.
   f. Record all data reported by the crew.
   g. Determine the mud weight increase needed or other courses of action.
2. Derrickman
   a. Open choke line valve at BOP.
   b. Signal Floor Man #1 at accumulator that choke line is open.
   c. Close choke and upstream valve after pipe tams have been closed.
   d. Read the shut-in annular pressure and report readings to Driller.
3. Floor Man #1
   a. Close the pipe trams after receiving the signal from the Derrickman.
   b. Report to Driller for further instructions.
4. Floor Man #2
   a. Notify the Tool Pusher and Operator Representative of the H_2S alarms.
   b. Check for open fires and, if safe to do so, extinguish them.
   c. Stop all welding operations.
   d. Turn-off all non-explosion proof lights and instruments.
   e. Report to Driller for further instructions.
5. Tool Pusher
   a. Report to the rig floor.
   b. Have a meeting with all crews.
   c. Compile and summarize all information.
   d. Calculate the proper kill weight.
   e. Ensure that proper well procedures are put into action.
6. Operator Representative
   a. Notify the Drilling Superintendent.
   b. Determine if an emergency exists and if so, activate the contingency plan.

B. Drill No.2--Tripping Pipe

1. Driller
   a. Sound the alarm immediately when mud volume increase has been detected.
   b. Position the upper tool joint just above the rotary table and set slips.
   c. Install a full opening valve or inside blowout preventor tool to close the drill pipe.
   d. Check flow.
   e. Record all data reported by the crew.
   f. Determine the course of action.
2. Derrickman
   a. Come down out of derrick.
   b. Notify Tool Pusher and Operator Representative
   c. Check for open fires and, if safe to do so, extinguish them.
   d. Stop all welding operations.
   e. Report to Driller for further instructions.
3. Floor Man #1
   a. Pick up full opening valve or inside blowout preventors and stab into tool joint above rotary table (with Floor Man #2).
   b. Tighten valve with back-up tongs.
   c. Close pipe rams after signal from Floor Man #2.
   d. Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.
   e. Report to Driller for further instructions.
4. Floor Man #2
   a. Pick-up full opening valve or inside blowout preventors and stab into tool joint above rotary table (with Floor Man #1).
   b. Position back-up tongs on drill pipe.
   c. Open choke line valve at BOP.
   d. Signal Floor Man #1 at accumulator that choke line is open.
   e. Close choke and upstream valve after pipe rams have been closed.
   f. Check for leaks on BOP stack and choke manifold.
   g. Read annular pressure.
   h. Report readings to the Driller.

5. Tool Pusher
   a. Report to rig floor.
   b. Have a meeting with all crews.
   c. Compile and summarize all information.
   d. Calculate proper kill weight.
   e. See that proper well kill procedures are put into action.
6. Operator Representative
   a. Notify Drilling Superintendent.
   b. Determine if an emergency exists, and if so, activate the contingency plans.

III. IGNITION PROCEDURES SECTION

Responsibility

The decision to ignite the well is the responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. In the event the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

Instructions for Igniting the Well

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and attach a safety rope. One man must monitor the atmosphere for explosive gases with the Explosimeter, while the Drilling Foreman is responsible for igniting the well.
2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.
3. Ignite from upwind and do not approach any closer than is warranted.
4. Select the ignition site best suited for protection and which offers an easy escape route.
5. Before igniting, check for the presence of combustible gases.
6. After igniting, continue emergency actions and procedures as before.
7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

NOTE: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Do not assume the area is safe after the well is ignited.

IV. TRAINING PROGRAM SECTION

Training Requirements

When working in an area where Hydrogen Sulfide gas (H_2S) might be encountered, definite training requirements must be carried out. The Company Supervisor will insure that all personnel, at the well site, have had adequate training in the following:

1. Hazards and characteristics of H_2S.
2. Physical effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H_2S detection.
5. Emergency rescue.
6. Resuscitators.
7. First aid and artificial resuscitation.
8. The effects of H_2S on metals.
9. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

V. EMERGENCY EQUIPMENT SECTION

Emergency Equipment Requirements

I. Signs
   A. Located at the location entrance with the following information:

(Lease)
CAUTION-POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

II. * Fresh air breathing equipment
   A. Air line units for all rig personnel on location.
   B. Cascade system with hose lines to rig floor and one to the derrick man and other operation areas. Spare cascade (trailer) on location

III. Wind socks or wind streamers
   A. Two 10" windsocks located at strategic locations at a height visible from the rig floor.
   B. Wind streamers (if preferred) to be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

IV. Hydrogen Sulfide detector and alarms.
   A. 1-four channel H_2S monitor with alarms.
   B. 4 sensors located at floor, bell nipple, shale shaker, and pits
   * C. Hand operated detectors with tubes.
   * D. H_2S monitor tester.

V. Condition sign and flags
   A. One each of green, yellow, and red condition flags to be displayed to denote conditions:
      GREEN--Normal Conditions
      YELLOW--Potential Danger
      RED--Danger, H2S Present
   B. The condition flag shall be posted at the location entrance.

VI. * Auxiliary rescue equipment
   A. Stretcher
   B. Two 100' lengths of 5/8" nylon rope.

VII. * Mud inspection devices
   A. Garrett Gas Train or Hach Tester for inspection of Hydrogen Sulfide concentration in the mud system.

VIII. Fire extinguishers
   A. Adequate fire extinguishers shall be located at strategic locations.

IX. Blowout prevention equipment
   A. The well shall have hydraulic BOP equipment for the anticipated BHP.
   B. Equipment must be tested upon installation.

X. * Combustible gas detectors
   A. There shall be one combustible gas detector on location at all times.

XI. BOP testing
   A. BOP, Choke Line and Kill Line will be tested as specified by operator.

XII. Audio system
   A. Radio communication shall be available at the rig.
   B. Radio communication shall be available at the rig floor or trailer.
   C. Radio communication shall be available on vehicles.

XIII. Special control equipment
   A. Hydraulic BOP equipment with remote control on ground.
   B. Rotating head at surface casing point.

XIV. Evacuation Plan
   A. Evacuation routes should be established prior to spudding each well.
   B. Should be discussed with all rig personnel.

XV. Designated Areas
   A. Parking and visitor area.
      1. All vehicles are to be parked at a pre-determined safe distance from the wellhead.
      2. Designated smoking area.
   B. Safe Briefing Area
      1. Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.
      2. Personal protective equipment should be stored in both protection centers or if a moveable trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both protection centers should be accessible.

- *Additional equipment will be available at Callaway Safety Midland, Texas.
- Additional personnel hydrogen sulfide monitors on location for all hands.
- Automatic Flare ignitor installed on rig

VI. CHECK LIST SECTION

Status Check List

Note: Date each item as they are implemented.

1. Sign at location entrance. _____
2. Two (2) wind socks (in required locations). _____
3. Wind streamers (if required). _____
4. 30 minute pressure demand air packs on location for all rig personnel and mud loggers. _____
5. Air packs, inspected and ready for use. _____
6. Spare bottles for each air pack (if required). _____
7. Cascade system and hose line hook up. _____
8. Cascade system for refilling air bottles. _____
9. Choke manifold hooked-up and tested. (Before drilling out surface casing.) _____
10. Remote Hydraulic BOP control (hooked-up and tested before drilling out surface casing.) _____
11. BOP Preventor tested (before drilling out surface casing.) _____
12. Mud engineer on location with equipment to test mud for Hydrogen Sulfide. _____
13. Safe Briefing Areas set-up. _____
14. Condition sign and flags on location and ready. _____
15. Hydrogen Sulfide detection system hooked-up. _____
16. Hydrogen Sulfide alarm system hooked-up. _____

17. Stretcher on location at Safe Briefing Area. _____

18. 1-100' length of 5/8" nylon rope on location. _____

19. 1-20 # or 30# ABC fire extinguisher in safety trailer in addition to those on rig. _____

20. Combustible gas detector on location and tested. _____

21. All rig crews and supervisors trained (as required). _____

22. Access restricted for unauthorized personnel. _____

23. Drills on H_2S and well control procedures. _____

24. All outside service contractors advised of potential Hydrogen Sulfide on the well. _____

25. NO SMOKING sign posted. _____

26. Hand operated H_2S detector with tubes on location. _____

27. 25mm flare gun with flares. _____

28. Automatic Flare ignitor installed on rig _____

Procedural Check List

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to insure that it has not been tampered with.
3. Check pressure on supply air bottles to see that they are capable of recharging.
4. Make sure all of the Hydrogen Sulfide detection systems are operative.

Perform the following each week:

1. Check each piece of breathing equipment to make sure that the demand regulator is working. This requires that the bottle be opened and the mask assembly be put on tight enough so that when you inhale, you get air.
2. Blowout preventor skills.
3. Check supply pressure on BOP accumulator stand-by source.
4. Check all work/escape units for operation: demand regulator, escape bottle air volumes, supply bottle of air volume.
5. Check breathing equipment mask assembly to see that straps are loosened and turned back, ready to put on.
6. Check pressure on breathing equipment air bottles to make sure they are charged to full volume.
7. Check breathing equipment air bottles to make sure all demand regulators are working. This requires that the bottles be opened and the mask assembly be put on tight enough so that when you inhale, you get air
8. Confirm pressure on all supply air bottles.
9. Perform breathing equipment drills with on-site personnel.
10. Check the following supplies for availability:
    a. Stretcher
    b. Safety belts and ropes
    c. Emergency telephone lists
    d. Spare air bottles
    e. Spare oxygen bottles (if resuscitator required)
    f. Hand operated H2S detectors and tubes
11. Test the Explosimeter to verify batteries are good.

VII. BRIEFING PROCEDURES SECTION

Briefing Procedures

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

Pre-Spud Meeting

Date: Prior to spudding the well.
Attendance: Drilling Supervisor
Drilling Engineer
Drilling Foreman
Rig Pushers
Rig Driller
Mud Engineer
All Safety Personnel
Service Companies
Purpose: Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

VIII. EVACUATION PLAN SECTION

General Plan

The direct lines of action prepared by CALLAWAY SAFETY EQUIPMENT CO., INC. to protect the public form hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foreman, Tool Pusher, Driller) determine Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.
2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation need to be implemented.
3. Company approved safety personnel that have been trained in the use of Hydrogen Sulfide detection equipment and self-contained breathing equipment will be utilized.
4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.
   NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.
5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

See Emergency Reaction Plan

Emergency Assistance Telephone List

PUBLIC SAFETY	
Eddy County Sheriff Department	**(505) 887-7551**
New Mexico State Police	**(505) 888-3137**
Fire Department	**(505) 885-2111**
Hospitals	**(505) 887-4100**
Carlsbad City Police	**(505) 885-2111**
New Mexico D.O.T.	**(505) 827-5100**
Bureau of Land Management	**(505) 393-3612**
U.S. Department of Labor	**(505) 248-5302**

Chesapeake Operating, Inc.

Drilling Superintendent / HS&E		
Nick Newland	**Cell**	**(432) 556-3120**
	Home	**(432) 686-7197**
Drilling Supervisor/Consultant		
Gene Lee	**Cell**	**(505) 631-9748**

Nabors Rig #311

Odessa Office		**(432) 363-8180**
Tool Pushers		
Raymond Jimenez	**Cell**	**(432) 664-8811**
Jeff Ward	**Cell**	**(432) 664-8811**

Safety Contractor

Callaway Safety Equipment	**Hobbs**	**(505) 392-2973**
	Odessa	**(505) 561-5049**

Affected Public Notification List
(within a 65' radius of exposure @100ppm)

The geologic zones that will be encountered during drilling are known to contain hazardous quantities of H_2S. The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms, and other precautionary measures.

Evacuee Description:
Residents

Notification Process:
A continuous siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

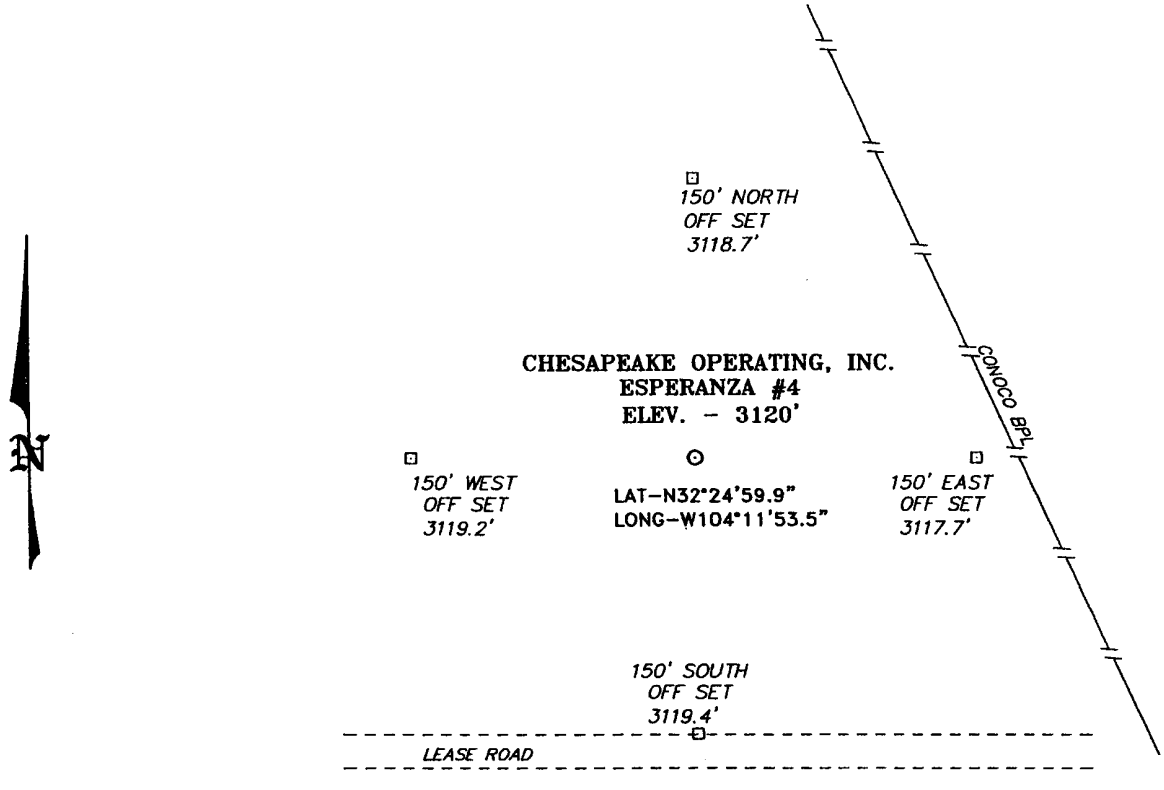
Evacuation Plan:
All evacuees will migrate lateral to the wind direction.

The Oil Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local fire and emergency medical service as necessary.

IX. MAPS AND PLATS SECTION

SECTION 4, TOWNSHIP 22 SOUTH, RANGE 27 EAST, N.M.P.M.,

EDDY COUNTY, **NEW MEXICO.**



100 0 100 200 FEET

SCALE: 1" = 100'

DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF US HWY 62/180 AND CO. RD. 605, GO SOUTHWEST ON 62/180 FOR APPROX. 0.75 MILE TO A LEASE ROAD; THENCE SOUTHEASTERLY ON LEASE ROAD FOR APPROX. 0.6 MILE; THENCE EAST FOR 0.11 MILE TO A POINT 150 FEET SOUTH OF PROPOSED LOCATION.

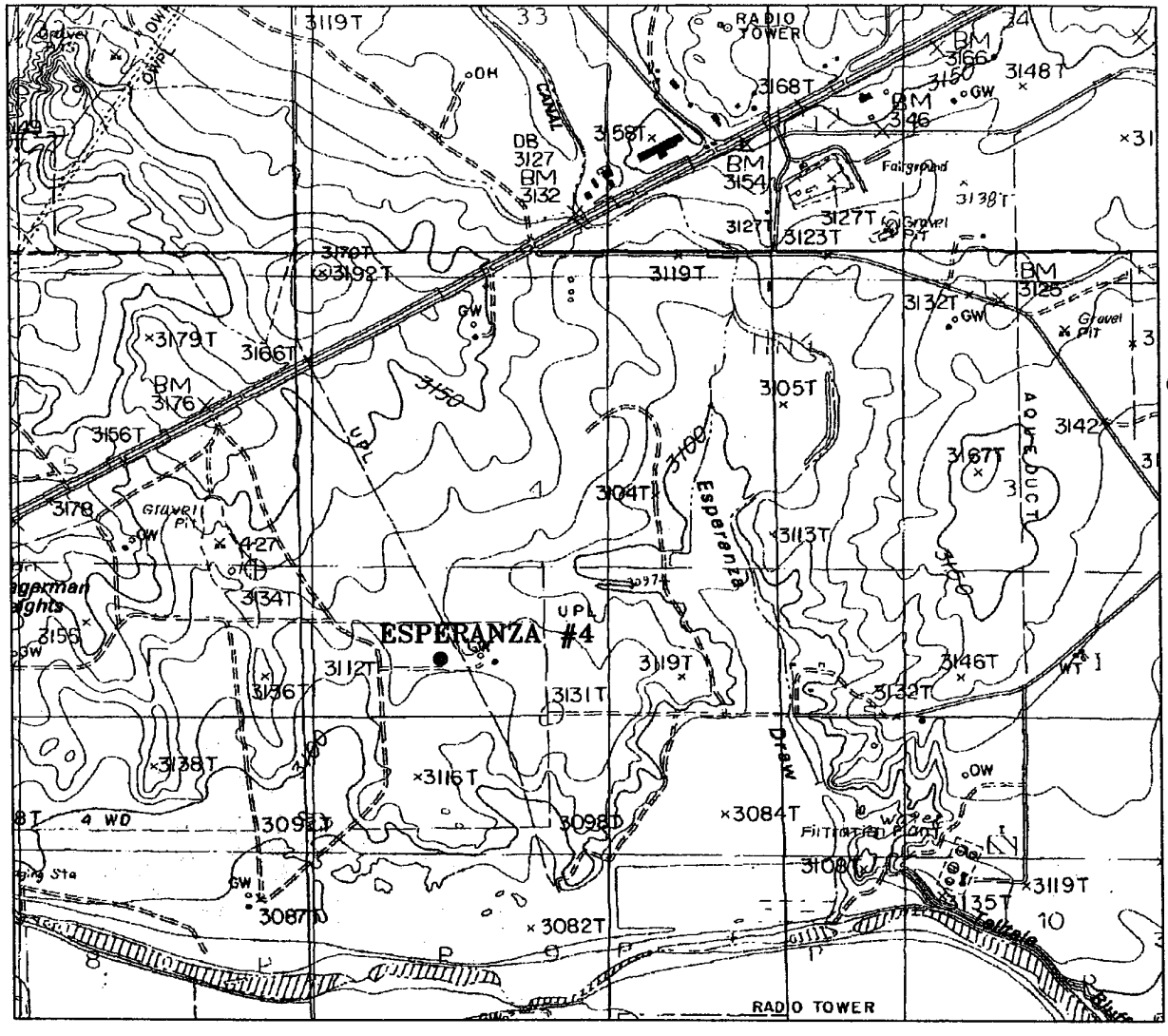
CHESAPEAKE OPERATING, INC.

REF: ESPERANZA No. 4 / Well Pad Topo

THE ESPERANZA No. 4 LOCATED 660' FROM THE SOUTH LINE AND 1530' FROM THE WEST LINE OF SECTION 4, TOWNSHIP 22 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 4134	Drawn By: K. GOAD		
Date: 03-30-2004	Disk: KJG CD#4 - 4134A.DWG	Survey Date: 03-29-2004	Sheet 1 of 1 Sheets

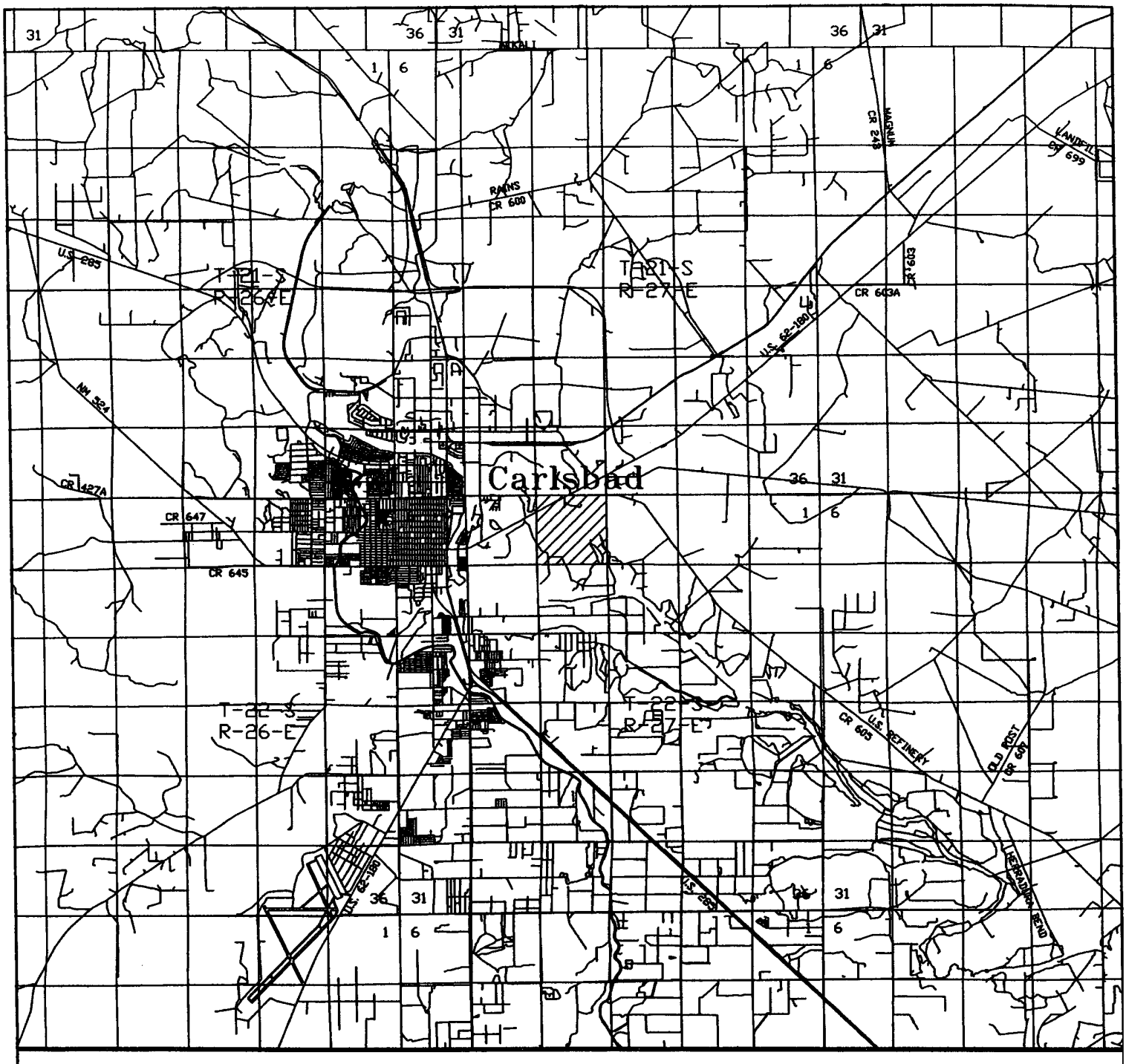


ESPERANZA #4
Located at 1530' FSL and 660' FWL
Section 4, Township 22 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	4134AA - KJG CD#5
Survey Date:	03-29-2004
Scale:	1" = 2000'
Date:	03-30-2004

CHESAPEAKE OPERATING, INC.



ESPERANZA #4
Located at 1530' FSL and 660' FWL
Section 4, Township 22 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	4134AA - KJG CD#5
Survey Date:	03-29-2004
Scale:	1" = 2 MILES
Date:	03-30-2004

CHESAPEAKE OPERATING, INC.

X. GENERAL INFORMATION SECTION

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., 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 and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
Permit 906

APPLICATION FOR PERMIT TO DRILL

Operator Name and Address	OGRID Number
CHESAPEAKE OPERATING, INC. PO Box 18496 Oklahoma City, OK 73154-0496	147179
	API Number

Property Code	Property Name	Well No.
	ESPERANZA 4	004

Surface Location

UL or Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
N	4	22S	27E		660	S	1530	W	Eddy

Bottom Holes

Pool: CARLSBAD;MORROW, SOUTH (PRO GAS) 73960

UL or Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
N	4	22S	27E		660	S	1530	W	Eddy

Pool: Carlsbad;Morrow, South (Pro Gas)

UL or Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
N	4	22S	27E		1980	S	660	W	Eddy

Work Type	Well Type	Cable/Rotary	Lease Type	Ground Level Elevation
New Well	Gas		Private	3134
Multiple	**Proposed Depth**	**Formation**	**Contractor**	**Spud Date**
Y	12000	Morrow		05/20/2004

Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	440	460	0
Intl	12.25	9.625	40	5225	1230	0
Prod	8.75	5.5	17	12000	1205	4500

Casing/Cement Program: Additional Comments

Cmt 13 3/8 csg w/460 sx Cl C + 2% CaCl2 14.8 ppg. 1.34 yield; cmt. 9 5/8 csg. w/1020 sx of 50:50 Poz Cl C + 5% D44+ 10% D20+ .1pps D29+ 3 pps D42 11.9 ppg, 2.48 yield Tail in w/210 sx of Cl C + .1% D13 14.8 ppg. 1.32 yield circ to surf.; 5 1/2 csg. cmtd w/825 sx of 50:50 Poz Cl. H + 5% D44 + 10% D20 + .1pps D29+ 5 pps D42 11.9 ppg, 2.5 yield. Tail: 380 sx of 50:50 Poz Cl H + 5% D44 + 2%D20 + .4% D167+ 3% D174+ .15% D800 14.4 ppg. 1.35 yield TOC @ 4500.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	2500	
Double Ram	5000	5000	

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. Electronically Signed By: Mark Mabe	
Title: Manager	
Date: 05/03/2004	Phone: 432-685-4339

OIL CONSERVATION DIVISION	
Electronically Approved By:	
Title:	
Approval Date:	Expiration Date:
Conditions of Approval: No Conditions	

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., 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 and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-102
Permit 906

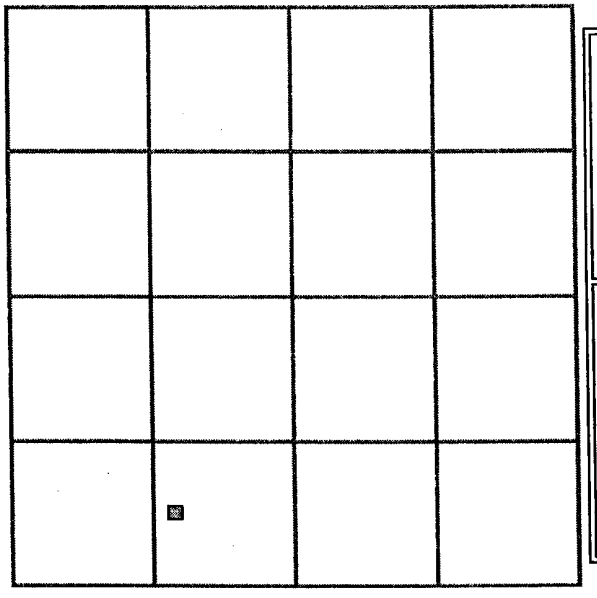
WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Name	Pool Code
	CARLSBAD;MORROW, SOUTH (PRO GAS)	73960
Property Code	**Property Name**	**Well No.**
	ESPERANZA 4	004
OGRID No.	**Operator Name**	**Elevation**
147179	CHESAPEAKE OPERATING, INC.	3134

Surface And Bottom Hole Location

UL or Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
N	4	22S	27E		660	S	1530	W	Eddy

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Electronically Signed By: Mark Mabe

Title: Manager

Date: 05/03/2004

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.

Surveyed By: Gary L Jones

Date of Survey: 03/29/2004

Certificate Number: 7977

Hydrogen Sulfide Drilling Operations Plan

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H2S
B. Physical effects and hazards
C. Proper use of safety equipment and life support systems.
D. Principle and operation of H2S detectors, warning system and briefing
E. Evacuation procedure, routes and first aid.
F. Proper use of 30 minute pressure demand air pack.

2 H2S Detection and Alarm Systems

A. H2S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.

3 Windsock and/or wind streamers

A. Windsock at mudpit area should be high enough to be visible.
B. Windsock at briefing area should be high enough to be visible.
C. There should be a windsock at entrance to location.

4 Condition Flags and Signs

A. Warning sign on access road to location.
B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H2S present in dangerous concentration. Only emergency personnel admitted to location.

5 Well control equipment

A. See exhibit "E"

6 Communication

A. While working under masks chalkboards will be used for communication.
B. Hand signals will be used where chalk board is inappropriate.
C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drillstem Testing

A. Exhausts will be watered.
B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
C. If location is near any dwelling a closed DST will be performed.

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas seperator will be brought into service along with H2S scavengers if

CHESAPEAKE OPERATING INC

DRILLING PROGNOSIS

WELL : Esperanza 4 #4

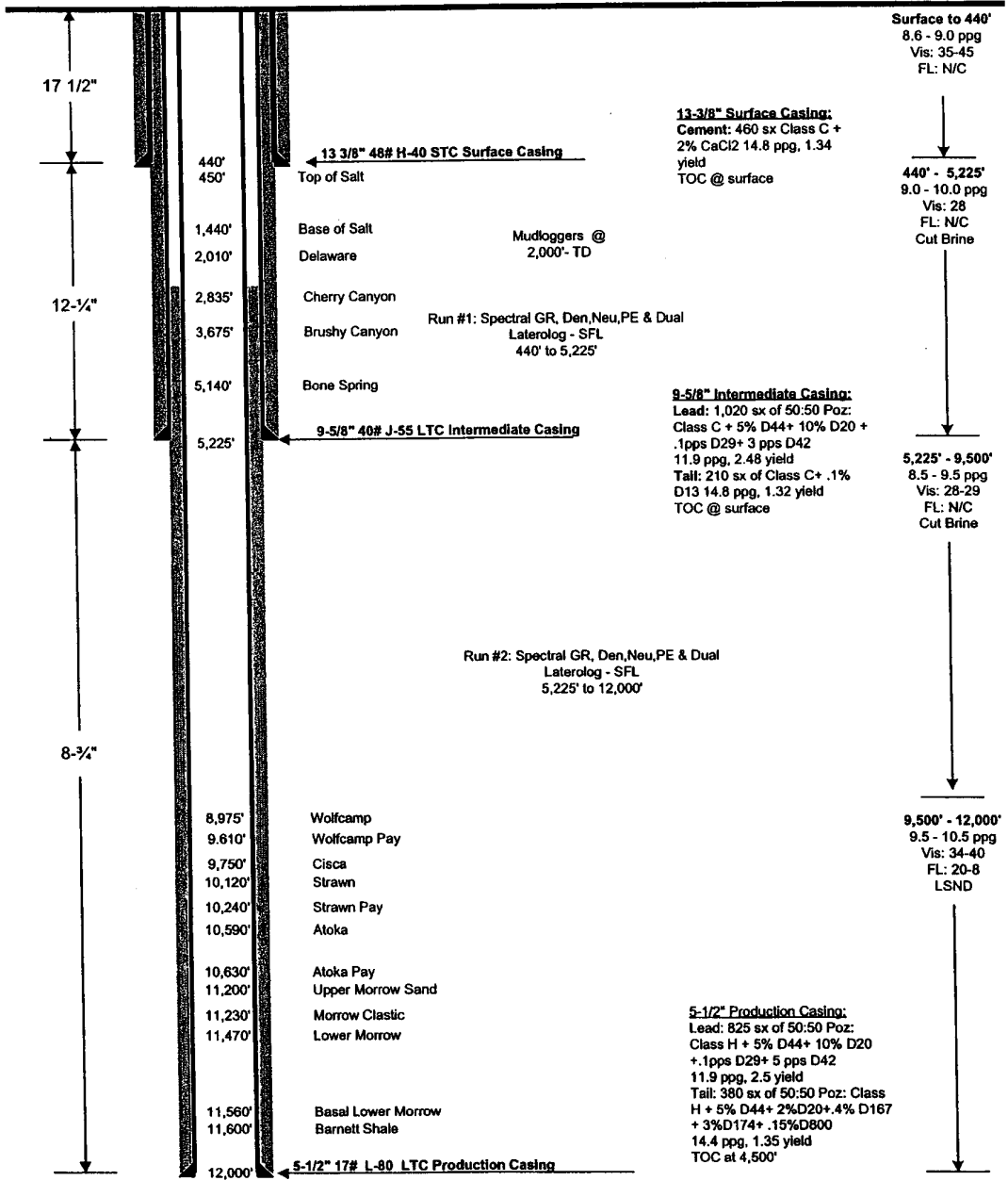
SHL : Section 4; T-22S, R-27E (660' FSL & 1,530' FWL)

TARGET : Section 4; T-22S, R-27E (1,980' FSL & 660' FWL)

COUNTY : Eddy **STATE : New Mexico**

FIELD : Esperanza Prospect

ELEVATION : GL - 3,135' (est) KB - 3,160' (est)



PREPARED BY: DFD **DATE:** 03/17/04

APPROVED BY: _____ **DATE:** _____

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

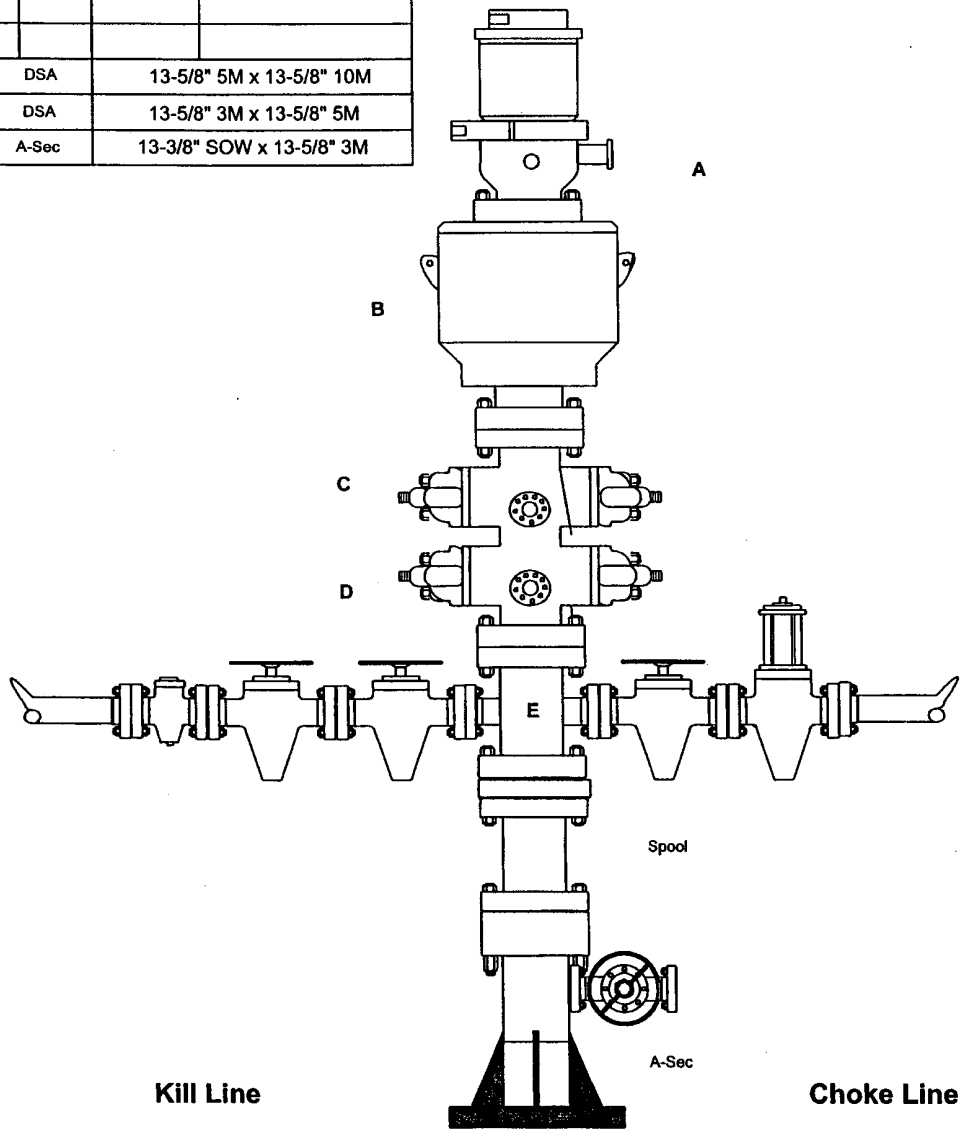
WELL : Esperanza 4 #4

RIG : Nabors #311

COUNTY : Eddy **STATE:** New Mexico

OPERATION: Drill out below 13-3/8" Casing

	SIZE	PRESSURE	DESCRIPTION
A	13-5/8"	500#	Rot Head
B	13-5/8"	5,000#	Annular
C	13-5/8"	10,000#	Pipe Rams
D	13-5/8"	10,000#	Blind Rams
E	13-5/8"	10,000#	Mud Cross
DSA		13-5/8" 5M x 13-5/8" 10M	
DSA		13-5/8" 3M x 13-5/8" 5M	
A-Sec		13-3/8" SOW x 13-5/8" 3M	



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	10,000#	Check Valve
2"	10,000#	Gate Valve
2"	10,000#	Gate Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
4"	10,000#	Gate Valve
4"	10,000#	HCR Valve

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
811 South First, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, New Mexico 87504-2088

Form C-102
Revised March 17, 1999

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	ESPERANZA	4

OGRID No.	Operator Name	Elevation
	CHESAPEAKE OPERATING, INC.	3120'

Surface Location

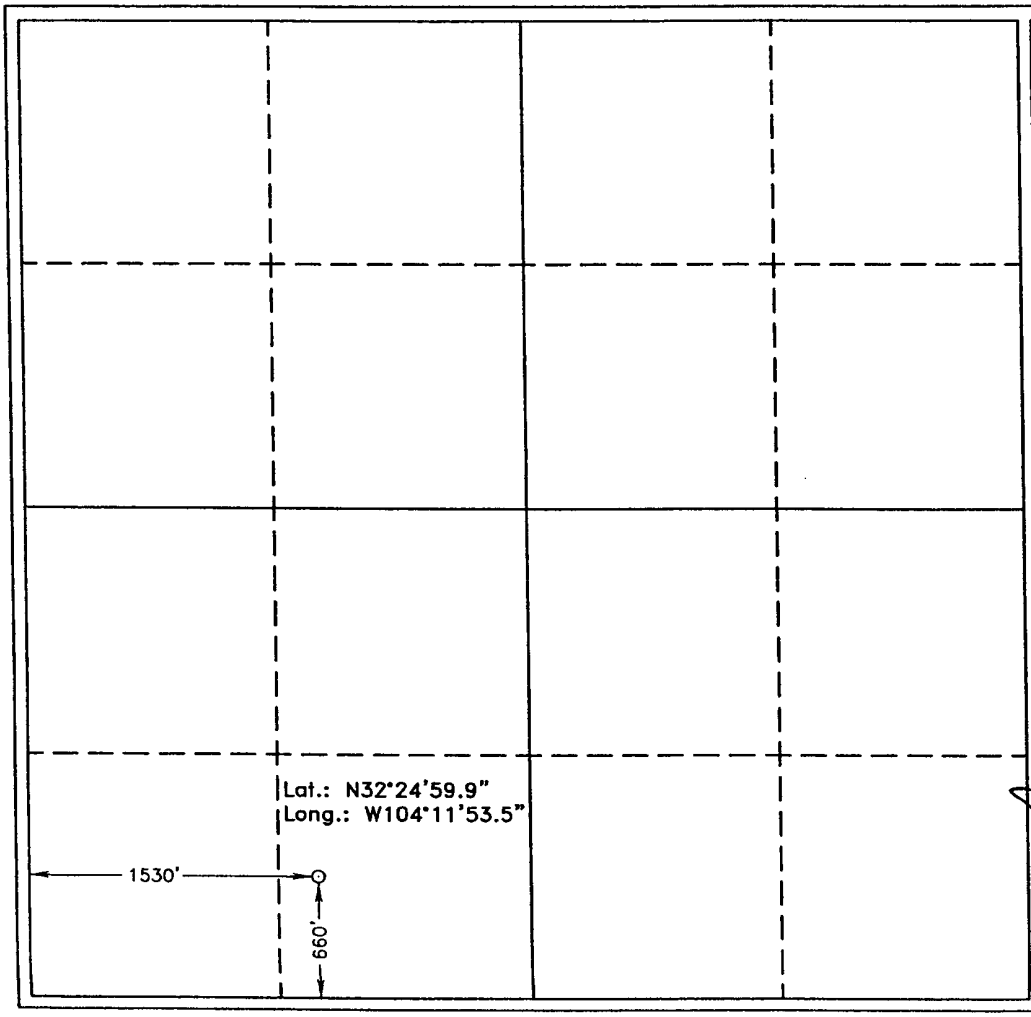
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	4	22 S	27 E		660	SOUTH	1530	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

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



OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name

Title

Date

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 supervison, and that the same is true and correct to the best of my belief.

MARCH 29, 2004

Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

W.O. No. 4154

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

Toxic Effects of Hydrogen Sulfide Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 20 ppm, which is .002% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is between five and six times more toxic than Carbon Monoxide. Toxicity data for Hydrogen Sulfide and various other gases are compared below in Table I. Physical effects at various Hydrogen Sulfide levels are shown in Table II.

Table I
Toxicity of Various Gases

Common Name	Chemical Formula	Specific Gravity	Threshold Limit (A)	Hazardous Limit (B)	Lethal Concentration C)
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H2S	1.18	10 ppm (D) 20 ppm (E)	250 ppm/hr	600 ppm
Sulfur Dioxide	SO2	2.21	5 ppm		1000 ppm
Chlorine	CL2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO2	1.52	5000 ppm	5%	10%
Methane	CH4	0.55	90,000 ppm	(9%)	Combustible above 5% in air

A. Threshold Limit--Concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects.
B. Hazardous Limit--Concentration that may cause death.
C. Lethal Concentration--Concentration that will cause death with short-term exposure.
D. Threshold Limit--10 ppm, 1972 ACGIH (American Conference of Governmental industrial Hygienists)
E. Threshold Limit--20 ppm, 1966 ANSI acceptable ceiling concentration for eight-hour exposure (based on 40-hour week) is 20 ppm. OSHA Rules and Regulations (Federal Register, Volume 37, No. 202, Part II, dated 10/18/72).

Table II
Physical Effects of Hydrogen Sulfide

Percent %	ppm	Physical Effects
0.001	10	Obvious and unpleasant odor.
0.002	20	Safe for 8 hrs. exposure
0.01	100	Kills smell in 3 to 5 minutes; may sting eyes and throat.
0.02	200	Kills smell shortly; stings eyes and throat.
0.03	300	IDLH (Immediately Dangerous to Life & Health) Level
0.05	500	Dizziness; breathing ceases in a few minutes
0.07	700	Unconscious quickly; death will result if not rescued.
0.10	1000	Unconscious at once; followed by death within minutes.

*Caution: Hydrogen Sulfide is a colorless and transparent gas and is highly flammable. It is heavier than air and may accumulate in low places.

Use of Self-Contained Breathing Apparatus

I. Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

II. Respirators shall be inspected frequently, at random, to insure that they are properly used, cleaned, and maintained.

III. Anyone who may use respirators shall be trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere.(Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone that may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

IV. Maintenance and care of respirators

- A. A program of maintenance and care of respirators shall include the following:
  1. Inspection for defects, including leak checks.
  2. Cleaning and disinfecting.
  3. Repair.
  4. Storage.
- B. Inspection: Self-Contained Breathing Apparatus for emergency use shall be inspected monthly, and records maintained, for the following:
  1. Fully charged cylinders.
  2. Regulator and warning device operation.
  3. Condition of face piece and connection.
  4. Elastomer or rubber parts shall be stretched or massaged to keep them pliable and prevent deterioration.
- C. Routinely used respirators shall be collected, cleaned, and disinfected as frequently as necessary to insure proper protection is provided.

V. Persons assigned tasks that require the use of Self-Contained Breathing Equipment shall be certified physically fit for breathing equipment usage by the local company physician at least annually.

VI. Respirators should be worn during the following conditions:

- A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H2S.
- B. When breaking out any line where H2S can reasonably be expected.
- C. When sampling air in areas to determine if toxic concentrations of H2S exist.
- D. When working in areas where over 20 ppm H2S has been detected.
- E. At any time where there is a doubt as to the H2S level in the area to be entered.

Rescue-First Aid for Hydrogen Sulfide Poisoning

Do Not Panic!!!

Remain Calm--THINK

1. Hold your breath (Do not inhale; stop breathing.) and go to Briefing area.

2. Put on breathing apparatus.

3. Remove victim(s) to fresh air as quickly as possible. (Go upwind from the source or at right angles to the wind; NOT downwind.)

4. Briefly apply chest pressure--arm lift method of artificial respiration to clear the victim's lungs and to avoid inhaling any toxic gas directly from the victim's lungs

5. Provide for prompt transportation to the hospital, and continue giving artificial respiration if needed.

6. Hospital(s) or medical facilities need to be informed, beforehand, of the possibility of H2S gas poisoning, no matter how remote the possibility.

7. Notify emergency room personnel that the victim(s) have been exposed to H2S gas.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration, as well as first aid for eyes and skin contact with liquid H2S. Everyone needs to master these necessary skills.

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
March 12, 2004

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 ☐ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☐

Operator: Chesapeake Operating Inc Telephone: (432) 683-7443 e-mail address: nnewland@chk.com
Address: 550 W. Texas Ave Ste. 1300 Midland, TX 79705
Facility or well name: Esperanza # 4 API #: _____ U/L or Qtr/Qtr _____ Sec 4 T 22S R 27E
County: Eddy Latitude _____ Longitude _____ NAD: 1927 ☐ 1983 ☐ Surface Owner Federal ☐ State ☐ Private ☐ Indian ☐

Pit	Below-grade tank	
Type: Drilling ☑ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☑ Unlined ☐ Liner type: Synthetic ☑ Thickness 12 mil Clay ☐ Volume _____ bbl	Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	

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: onsite ☐ offsite ☐ If offsite, name of facility _____. (3) Attach a general description of remedial action taken including 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.

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: 5-7-04
Printed Name/Title Nick Newland, Drlg. Supt. Signature Nick Newland

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
Date: MAY 13 2004
Printed Name/Title Field Rep II Signature

Please see attached stipulations and/or requirements:

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor

Joanna Prukop
Cabinet Secretary
Acting Director
Oil Conservation Division

13 May 2004

Chesapeake Operating, Inc.
Faskin Center, Tower II
550 West Texas Ave., Suite 1300
Midland, Texas 79701

RE:

Permit Stipulations - Esperanza # 4 660FSL & 1530FWL Unit N SEC-4 T-22S R-27E

The Oil Conservation Division of Artesia is in receipt of your application to construct a pit for the purpose of drilling. The request is hereby accepted and approved with the following provisions:

1. Construction and closing of pit(s) must meet the criteria of Rule 19.15.2.50 and the Pit Guidelines.
2. The pit is not located in any watercourse, lakebed, sinkhole, playa lake, or wetland.
3. Notice is to be given to the OCD prior to construction of the pit(s).
4. Upon cessation of drilling the freestanding fluid will be removed and disposed of in an OCD approved facility.
5. Due to liner choice, the pits contents and the liner shall be removed and disposed of in a manner approved by the Division.
6. The pit will not be used for any additional storage of fluids.
7. The Division may attach additional conditions to any permit upon a finding that such conditions are necessary to prevent the contamination of fresh water, or to protect public health or the environment. (19.15.2.50.C.3.G.1.)
8. Re-seeding mixture will must be approved or authorized by surface owner.

If I can be of any further assistance, please feel free to call (505) 748-1283 ext. 109.

Sincerely,

Van Barton