#### District I

District III

1625 N. French Dr., Hobbs, NM 88240

# State of New Mexico Engrave Minerals and Natural Resources

Form C-101 May 27, 2004

District II 1301 W. Grand Avenue, Artesia, NM 88210

1000 Rio Brazos Road, Aztec, NM 87410

CEMENT TO COVER ALL OIL, GAS AND WATER BEARING

RECEIVED it to appropriate District Office

DEC 2 1 2004

District IV 1220 S. St. Fra	meis Dr., Sa	ınta Fe, N	ZО м 87505	NES			,	OPP-ARTE	SIA	L. AN	MENDED REPORT	
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_			Operator Name CHI OPERAT	and Addres	S .			004378	OGRIL	) Number	r	
P.O. BOX 1799 MIDLAND, TEXAS 79702										Vumber		
·····			MIDLAND, IE	AAB 131		3.7		30 - 01	<u> </u>	<u>781</u>	11 No.	
Prope	rty Code				<sup>3</sup> Property VALL	Name E FELIZ				we	2 1 No.	
<sup>9</sup> Proposed Pool 1 HAPPY VALLEY; MORROW								10 Prop	osed Pool 2	2		
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		<del></del>		A	dditional We	ell Informat	ion		<u> </u>			
	Type Code N		12 Well Type Coo					Lease Type Code 15 Grour		ound Level Elevation 3215		
<sup>16</sup> M	ultiple		<sup>17</sup> Proposed Dept 11900				19 Contractor			<sup>20</sup> Spud Date 1/3/04		
Depth to Groun	ndwater 13	37'		Distance from nearest fresh water well Approx 800'			Distance from	Distance from nearest surface water  Greater than 1000'				
Pit: Liner:	Synthetic 2	12 mil	or better if needed.	Cla	y Pit Volum							
Closed	-Loop System	n 🗆		~~~~		Fresh Wate	r 🛛 Brine	☑ Diesel/Oil-based	☐ Gas/	Air 🔲		
			2:	Propo	sed Casing	and Cement	t Progra	m				
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12 ½	4**		9 5/8"		36-J-55	±22	±2200°		700		SURFACE	
83/4	,,	7° (C	ONTINGENCY)	2	.6-N-80	±100	000'	500	500		±8000°	
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7 7/8"(If 7" is not set)			5 1/2"	20/17# N-80		11,9	11,900'		As deemed necessary		zones	
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<sup>23</sup> I hereby ce	rtify that the	informat	ion given above is tru	e and com	nlete to the best		ОП (	CONTORDATAT	TION I	N // C	TON.	
of my knowle	dge and bel	ief. I furt	her certify that the D guidelines , a	drilling pi	t will be	Approved by		CONSERVA	<u> 110N 1</u>	71 1 1 2	OION	
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Printed name: JOHN W- WOLF						TIM W. GUM  DISTRICT II SUPERVISOR						
Title:					Approval DADEC 2 9 2004 Expiration Dat DEC 2 9 2005							
E-mail Addre	<u>~</u>	Jan 1				Approvar Da	BE V N	e cout	LAPH AHON	Dale? ==	- W & ZUUJ	
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Sold Seeth Perhaps South Fe N M 87505  Santa Fe N M 87505  WELL LOCATION AND ACREAGE DEDICATION PLAT  Property Code  Property Name Pool Room  Property Code  VALLE PELIZ  OSRO No.  CHI OPERATING, INC.  Surface Location  Lot 14 (N/2) 3 22-5 26-E us ten.  Feat from the Notification from Feet from 50 End/Neet fire County  Lot 14 (N/2) 8 Bottom Hole Location if Different From Surface  U. or Lot No. Section  Room-Standard Unit No.  Bottom Hole Location If Different From Surface  NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTEREST HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIMISION.  OPERATOR CERTIFICATION  Lat N 3225'35.4*  LON W 10417'07.8  Survey Complete C				•			IV			
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# CHI OPERATING, INC HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN FOR DRILLING/COMPLETING/WORKOVER/FACILITY WITH THE EXPECTATION OF H2S IN EXCESS OF 100 PPM

RECEIVED

DEC 2 1 2004

WELL/FACILITY IN QUESTION VALLE FELIZ #2 Drill Well SEC. 3-T22S-R26E 860' FNL & 1250' FWL EDDY COUNTY, NM

OOD: ARTESIA

This well/facility is not expected to have H2S, but due to the sensitive location,

The following is submitted as requested

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#### GENERAL H2S EMERGENCY ACTIONS:

In the event of an H2S emergency, the following plan will be initiated.

- 1) All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
- 2) If for any reason a person must enter the hazardous area, they must wear a SCBA (Self contained breathing apparatus)
- 3) Always use the "buddy system"
- 4) Isolate the well/problem if possible
- 5) Account for all personnel
- 6) Display the proper colors warning all unsuspecting personnel of the danger at hand.
- 7) Contact the Company personnel as soon as possible if not at the location. (use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and co-ordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

#### EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

- 1) All personnel will don the self-contained breathing apparatus.
- 2) Remove all personnel to the "safe area". (always use the "buddy system"
- 3) Contact company personnel if not on location.
- 4) Set in motion the steps to protect and or remove the general public to an upwind "safe area". Maintain strict security & safety procedures while dealing with the source.
- 5) No entry to any unauthorized personnel.
- Notify the appropriate agencies: City Police-City street(s)
  State Police-State Rd
  Count Sheriff-County Rd.
  (will assist in general public evacuation/safety while maintaining roadblocks)
- 7) Call the NMOCD

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in arms way he will take the necessary steps to protect the workers & the public.

Page 2

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

	<u>OFFICE</u>	<b>MOBILE</b>		<u>HOME</u>				
Chi Operating, Inc.	432-685-5001							
Sonny Mann	505-365-2338	432-694-7062		505-365-2722				
John Wolf	John Wolf 432-685-5001 432-634-7061							
Bill Bergman	432-685-5001	432-557-8773		432-689-4011				
EMERGENCY RESPONSE NUMBERS: Eddy County, New Mexico								
State Police	State Police Eddy County Lea County							
Sheriff	Eddy County Lea County		505-74 505-	46-2701				
Emergency Medical	Service (Ambulance)		911 505-7	or 46-2701				
Eddy County Emergency Management (Harry Burgess) 505-887-9511								
State Emergency Response Center (SERC) 505-476-9620								
Police Department - Fire Department - A	505-746-5001 505-746-5001							
Police Department - Fire Department - C		505-885-2111 505-885-3125						
Fire Department - I	505-677-2349							
(NMOCD) New Mex District I (Lea, Roo District II (Eddy, Ch	•		93-6161 48-1283					
Callaway Safety Indian Fire & Safety American Safety	505-392-2973 800-530-8693 505-746-1096							
BJ Services Schlumberger				46-3146 48-1392				
Cudd Pressure Contr	rol	•	800-9	90-2833				

In the event greater than 100 ppm H2S is present, the ROE (Radius Of Exposure) calculations will be done to determine if the following is warranted:

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H2S could be present in concentrations greater than 100 ppm in the gas mixture.

# Calculation for the 100 ppm ROE:

(H2S concentrations in decimal form:)

X = [(1.589) (concentration) (Q)] (0.6258)

10,000 ppm += .011,000 ppm += .001

Calculation for the 500 ppm ROE:

100 ppm + = .0001

10 ppm + = .00001

X = [(0.4546) (concentration) (Q)] (.06258)

EXAMPLE: If a well/facility has been determined to have 100 ppm H2S in the gas mixture and the well/facility is producing at a gas rate of 200 MCFPD then:

ROE for 100 PPM

X=[(1.589)(.0001)(200,000)](0.6258)

X = 8.8

ROE for 500 PPM

X=[(.4546)(.0005)(200,000)] (0.6258)

X = 10.9'

(These calculations will be forwarded to the appropriate District NMOCD office when applicable)

#### **PUBLIC EVACUATION PLAN:**

(When the supervisor has determined that the General Public will be involved, the following plan will be implemented)

- 1) Notification of the emergency response agencies of the hazardous condition and Implement evacuation procedures.
- 2) A trained person in H2S safety, shall monitor with detection equipment the H2S Concentration, wind and area of exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class I groups A,B,C, & D, Division I, hazardous locations. All monitors will have a minimum capability of measuring H2S, oxygen, and flammable values.)
- 3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- 4) The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

# PROCEDURE FOR IGNITING AN UNCONTROLABLE CONDITION:

The decision to ignite a well should be a last resort and one if not both of the following pertain.

- 1) Human life and/or property are in danger.
- 2) There is no hope of bring the situation under control with the prevailing conditions at the site.

#### **INSTRUCTIONS FOR IGNITION:**

- 1) Two people are required. They must be equipped with positive pressure; self contained breathing apparatus and a "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
- 2) One of the people will be a qualified safety person who will test the atmosphere for H2S, Oxygen, & LFL. The other person will be the company supervisor, he is responsible for igniting the well.
- 3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun shall be used, with a ±500' range to ignite the gas.
- 4) Prior to ignition, make a final check for combustible gases.
- 5) Following ignition, continue with the emergency actions & procedures as before.

#### REQUIRED EMERGENCY EQUIPMENT:

- 1) Breathing Apparatus:
  - Rescue Packs (SCBA) 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  - Work/Escape Packs 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
  - Emergency Escape Packs 4 packs shall be stored in the doghouse for emergency evacuation.
- 2) Signage & Flagging:
  - One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  - A Colored Condition flag will be on display, reflecting the condition at the site at that time.
- 3) Briefing Area: Two, perpendicular areas will be designated by signs and readily accessible.

- 4) Wind Socks: Two windsocks will be placed in strategic locations, visible from all angles.
- 5) H2S Detectors and Alarm: The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The 3 sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
  - Rig Floor
  - Bell Nipple
  - End of Flow line or where well bore fluid are being discharged.
- 6) Auxiliary Rescue Equipment:
  - Stretcher
  - Two OSHA full body harness
  - 100' of 5/8" OSHA approved rope
  - 1 20# Class ABC fire extinguisher
  - Communication via cell phones on location and vehicles on location.

# USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA):

SCBA should be worn when any of the following are performed:

- Working near the top or on top of a tank.
- Disconnecting any line where H2S can reasonably be expected.
- Sampling air in the area to determine if toxic concentrations of H2S exist.
- Working in areas where over 10 ppm on H2S has been detected.
- At any time there is a doubt as the level of H2S in the area.

All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

Facial hair and standard eyeglasses are not allowed with SCBA.

Contact lenses are never allowed with SCBA.

Air quality shall continuously be checked during the entire operation.

After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.

All SCBA shall be inspected monthly.

# RESCUE & FIRST AID FOR VICTOMS OF HYDROGEN SULFIDE (H2S) POISONING:

Do not panic.

Remain calm & think.

Get on the breathing apparatus.

Remove the victim to the safe breathing area as quickly as possible. Upwind an uphill from source or cross wind to achieve upwind.

Notify emergency response personnel.

Provide artificial respiration and /or CPR, as necessary.

Remove all contaminated clothing to avoid further exposure.

A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

# **H2S TOXIC EFFECTS:**

H2S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H2S is approximately 20% heavier than air (Sp.Gr=1.19 / Air=1) and color less. It forms an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H2S) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

#### Various Gases

Common	Chemical	Sp. Gr.	Threshold	Hazardous	Lethal
Name	Abbrev.		Limits	Limits	Concentration
				100 (1	600
Hydrogen Sulfide	H2S	1.19	10 ppm 15 ppm	100 ppm/ hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/ hr	300 ppm
Sulfur Dioxide	SO2	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL2	2.45	1 ppm	4 ppm / hr	1000 ppm
Carbon Monoxide	СО	0.97	50 ppm	400 ppm / hr	1000 ppm
Carbon Dioxide	CO2	1.52	5000 ppm	5 %	10 %
Methane	CH4	0.55	90,000	Combustible @ 5%	N/A

- 1 Threshold limit Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without Adverse effects.
- 2 Hazardous limit Concentration that may cause death
- 3 Lethal concentration Concentration that will cause death with short-term exposure.
- 4 Threshold limit 10 ppm NIOSH guide to chemical hazards
- 5 Short-term threshold limit.

### PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATIONS		PYSICAL EFFECTS			
.001%	10 ppm	Obvious and unpleasant odor. Safe for 8hr exposure			
.005%	50 ppm	Can cause some flu-like symptoms and can cause pneumonia			
.01%	100 ppm	Kills the sense of smell in 3 –15 minutes. May irritate eyes and throat.			
.02%	200 ppm	Kills the sense of smell rapidy. Severly irritates eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and/or death.			
.06%	600 ppm	Loss of consciousness quickly, death will result in not rescued promptly.			

