

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 3

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL						1. WELL NAME and NUMBER Chesapeake 28-1				
2. TYPE OF WORK DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						3. FIELD OR WILDCAT WILDCAT				
4. TYPE OF WELL Gas Well Coalbed Methane Well: NO						5. UNIT or COMMUNITIZATION AGREEMENT NAME				
6. NAME OF OPERATOR LIBERTY PIONEER ENERGY SOURCE, INC						7. OPERATOR PHONE 801 224-4771				
8. ADDRESS OF OPERATOR 1411 East 840 North, Orem, UT, 84097						9. OPERATOR E-MAIL dgunnell@libertypioneer.com				
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) Patented			11. MINERAL OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>			12. SURFACE OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>				
13. NAME OF SURFACE OWNER (if box 12 = 'fee') Chesapeake Duck Club						14. SURFACE OWNER PHONE (if box 12 = 'fee') 801-566-5298				
15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee') 1911 South 900 West, ,						16. SURFACE OWNER E-MAIL (if box 12 = 'fee')				
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')			18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS YES <input type="checkbox"/> (Submit Commingling Application) NO <input checked="" type="checkbox"/>			19. SLANT VERTICAL <input checked="" type="checkbox"/> DIRECTIONAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/>				
20. LOCATION OF WELL		FOOTAGES		QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN		
LOCATION AT SURFACE		880 FNL 563 FEL		NENE	28	9.0 N	3.0 W	S		
Top of Uppermost Producing Zone		880 FNL 563 FEL		NENE	28	9.0 N	3.0 W	S		
At Total Depth		880 FNL 563 FEL		NENE	28	9.0 N	3.0 W	S		
21. COUNTY BOX ELDER			22. DISTANCE TO NEAREST LEASE LINE (Feet) 563			23. NUMBER OF ACRES IN DRILLING UNIT 40				
			25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed) 0			26. PROPOSED DEPTH MD: 1500 TVD: 1500				
27. ELEVATION - GROUND LEVEL 4215			28. BOND NUMBER RLB 0012097			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE 29-4162				
Hole, Casing, and Cement Information										
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Cond	20	16	0 - 90	1.0	Unknown	9.5	Unknown	1	1.0	1.0
Surf	12.25	9.625	0 - 200	36.0	J-55 LT&C	9.8	Class G	110	1.47	14.2
Prod	8.75	4.5	0 - 1500	10.5	J-55 LT&C	10.5	Class G	424	1.47	14.2
ATTACHMENTS										
VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES										
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER					<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN					
<input checked="" type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)					<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER					
<input type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)					<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP					
NAME Don Hamilton			TITLE Permitting Agent (Buys & Associates, Inc)				PHONE 435 719-2018			
SIGNATURE			DATE 01/04/2011				EMAIL starpoint@etv.net			
API NUMBER ASSIGNED 43003500030000			APPROVAL  Permit Manager							

LIBERTY PIONEER ENERGY SOURCE, INC.

Well Name: Chesapeake 28-1
Sec. 28, T 9 North, R 3 West, SLB&M
 Box Elder County, Utah

DRILLING PLAN

NOTE: This will be a vertical hole.

1. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS (Assumes KB elevation of 5')

<u>FORMATION</u>	<u>TOP (TVD)</u>	<u>SUB SURFACE</u>
QUATERNARY	SURFACE	1600'
CAMBRIAN	1600'	

2. ESTIMATED DEPTHS OF ANTICIPATED WATER, OIL, GAS, OR MINERAL FORMATIONS (Assumes KB elevation of 5')

<u>FORMATION</u>	<u>TOP</u>	<u>CONTENTS</u>
QUATERNARY	253	GAS

3. PRESSURE CONTROL EQUIPMENT (Schematic Attached - Figure 1)

BOP System Installed after setting the 9-5/8" Surface Casing:

- A) Type: 11" x 3,000 psi WP double-gate BOP and 11" x 3,000 psi WP annular BOP with hydraulic closing unit. 9-5/8" x 11" x 3,000 psi WP slip-on welded casing head and 11" x 3,000 psi WP x 7-1/16" x 3,000 psi WP tubing head.

The blowout preventer will be equipped as follows:

- 1) One set of blind rams.
- 2) One set of pipe rams.
- 3) Drilling spool with two side outlets (choke side: 3" minimum and kill side: 2" minimum).
- 4) Kill line: Two-inch minimum.
- 5) Two kill line valves, one of which will be a check valve (two-inch).
- 6) Choke line: Three-inch minimum.
- 7) Two choke line valves: Three-inch minimum.
- 8) One manually operated choke: Three-inch minimum.
- 9) Pressure gauge on choke manifold.
- 10) Upper kelly cock with handle readily available.

- 11) Full opening internal blowout preventer or drill pipe safety valve able to fit all connections.
- 12) Fillup line to be located above uppermost preventer.

B) Pressure Rating: 3,000 psi.

C) Testing Procedure:

At a minimum, this pressure test will be performed:

At a minimum, the BOP, choke manifold, and all related equipment will be pressure tested to the approved working pressure of the BOP stack (if isolated from the surface casing by means of a test plug) or to 70% of the internal yield strength of the surface casing (if not isolated from the surface casing by means of a test plug). Pressure will be maintained for a period of at least ten minutes or until requirements of the test are met, whichever is longer.

- 1) When the BOP is initially installed.
- 2) Whenever any seal subject to test pressure is broken.
- 3) Following related repairs.
- 4) At thirty-day intervals.

In addition to the above, the pipe rams will be activated daily and each trip, and the blind rams will be activated each trip (but not more frequently than once each day). All BOP tests and drills will be recorded in the IADC Driller's Log (four sheets).

D) Choke Manifold Equipment:

All choke lines will be straight lines, unless turns use tee-blocks, or are targeted with running tees. These lines will be anchored to prevent whip and vibration.

E) Accumulator:

The accumulator will have sufficient capacity to close all rams (plus the annular preventer, if applicable) and retain a minimum of 200 psi above the pre-charge pressure without the use of the closing-unit pumps. The fluid reservoir capacity will be double the accumulator capacity and the fluid level will be maintained at the manufacturer's recommendations. The BOP system will have two independent power sources to close the preventers. Nitrogen bottles (three minimum) will be considered one of these sources and will maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the

measured pre-charge pressure is found to be above or below the maximum or minimum limits.

F) Miscellaneous Information:

The blowout preventer and related pressure-control equipment will be installed, tested, and maintained in compliance with the specifications in and requirements of the DOGM. The choke manifold and BOP extension rods will be located outside the rig sub-structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the wellhead, but will be readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular drilling rig contracted to drill this hole.

4. THE PROPOSED CASING AND CEMENTING PROGRAM

A) Casing Program

<u>SIZE</u>	<u>INTERVAL</u>	<u>LENGTH</u>	<u>DESCRIPTION</u>
16"	0 – 90'	90'	¼" Wall
9 5/8"	0' – 200'	200'	J-55 LT&C 36 #/ft
4 1/2"	0' – 1500'	1500'	J-55 LT&C 10.5 #/ft

NOTE: Surface casing will be pressure tested to 1,000 psi prior to exiting casing.

B) Cementing Program:

SURFACE CASING: (Cement to Surface)

<u>CASING/HOLE SIZE</u>	<u>CEMENT SLURRY</u>	<u>SX</u>	<u>PPG</u>	<u>YIELD</u>
9 5/8" / 12 1/4" (100% open hole excess)	Class "G" Type III	110	14.2	1.47

NOTE: If cement returns are not observed, then Top out with one-inched from 100' with 50 sacks Class 'G' Type III .

PRODUCTION: (Cement to Surface)

<u>CASING/HOLE SIZE</u>	<u>CEMENT SLURRY</u>	<u>SX</u>	<u>PPG</u>	<u>YIELD</u>
4.5" – 8 3/4" (40% over theoretical open hole excess or 20% over open caliper)	Class 'G' + fluid loss	424	14.2	1.47

5. MUD PROGRAM:

A Water Base Mud system will be used from spud to Total Depth

<u>INTERVAL</u>	<u>WEIGHT (PPG)</u>	<u>VISCOSITY (SEC)</u>	<u>WL (CCS)</u>
SURFACE to 90'	8.5-9.5 ppg	30-60 sec	10-20 ccs
90 to 200'	8.5-9.8 ppg	30-60 sec	10-20 ccs
200' to 1,500'	9.9-10.5 ppg	30-60 sec	10-20 ccs

6. EVALUATION PROGRAM:

Cased hole Electric: It is anticipated that a log suite consisting of (DIL/Sonic/Neutron-Density/GR/Cal) will be run from TD to bottom of surface casing (a GR/Neutron from 200' to surface).

Drillstem Testing:

None anticipated.

Coring:

None anticipated.

Stimulation:

No stimulation has been formulated for this test at this time. The drill site, as proposed, will be of sufficient size to accommodate all completion activities.

The proposed Evaluation Program may change at the discretion of the well site geologist, with approval from the Division of Oil, Gas and Mining (DOG M) office.

Whether the well is completed as a dry hole or as a producer, *Well Completion and Recompletion Report and Log Form #3160-4*) will be submitted to the DOGM not later than thirty (30) days after the completion of the well or after completion of operations being performed.

Two (2) copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations will be filed with the DOGM.

7. ABNORMAL CONDITIONS

No abnormal temperatures or pressures are anticipated, however this area is close to the Great Salt Lake and some over pressured intervals have been seen in old wells. A maximum bottomhole pressure gradient of 0.52 psi per ft (10.0 ppg) could be expected, and is planned for.

8. ANTICIPATED STARTING DATES AND MISCELLANEOUS

A. Anticipated Starting Dates:

Anticipated Commencement date - May 1, 2011
Drilling Days - Approximately 5 Days
Completion Days - Approximately 2 Days

B. Miscellaneous:

There shall be no deviation from the proposed drilling and/or workover program as approved. Safe drilling and operating practices must be observed.

All wells, whether drilling, producing, suspended or abandoned shall be identified in accordance with state regulations. There shall be a sign or marker with the name of the operator, the lease serial number, the well number and the surveyed description of the well.

Any changes in operation must have prior approval from the DOGM. Pressure tests are required before drilling out from under all casing strings set and cemented in place. Blowout preventer controls will remain in use until the well is either completed or abandoned. Preventers will be inspected and operated at least daily to insure good mechanical working order, and this inspection will be recorded on the daily drilling report. All BOP tests must be recorded in the daily drilling report.

The spud date will be orally reported to the DOGM, SLC Office within twenty-four (24) hours after spudding. If spudding occurs on a weekend or holiday, this report will be called in on the next regular workday following spudding of the well.

All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL-3A will be reported to the DOGM SLC Office. Major events will be reported verbally within twenty-four (24) hours and will be followed with a written report within fifteen (15) days. "Other than Major Events" will be reported in writing within fifteen (15) days. "Minor Events" will be reported to the DOGM

No well abandonment operations will be commenced without the prior approval of the DOGM. In the case of newly-drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the DOGM SLC Office Petroleum Engineer. A *Notice of Intention to Abandon* (Form 3160-5) will be filed with the Authorized Officer within fifteen (15) days following the granting of oral approval to plug and abandon.

Upon completion of approved plugging, a regulation marker will be erected in accordance with state regulations. The following information will be permanently placed on the marker with a plate, cap, or beaded-on with a welding torch: Company Name, Well Name and Number, Location by Quarter/Quarter, Section, Township, Range, and the Lease Number.

A *Subsequent Report of Abandonment* will be submitted within thirty (30) days following the actual plugging of the well bore. This report will indicate where plugs were placed and the current status of surface restoration operations. If surface restoration has not been completed at that time, a follow-up report will be filed when all surface restoration work has been completed and the location is considered ready for final inspection.

Pursuant to state regulations, lessees and operators are authorized to vent/flare gas during initial well evaluation tests, not exceeding a period of thirty (30) days or the production of fifty (50) MMCF of gas, whichever occurs first. An application must be filed with the DOGM, and approval received, for any venting/flaring of gas beyond the initial (30) day or otherwise authorized test period.

Not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than ninety (90) days, the operator shall notify the authorized officer by letter or

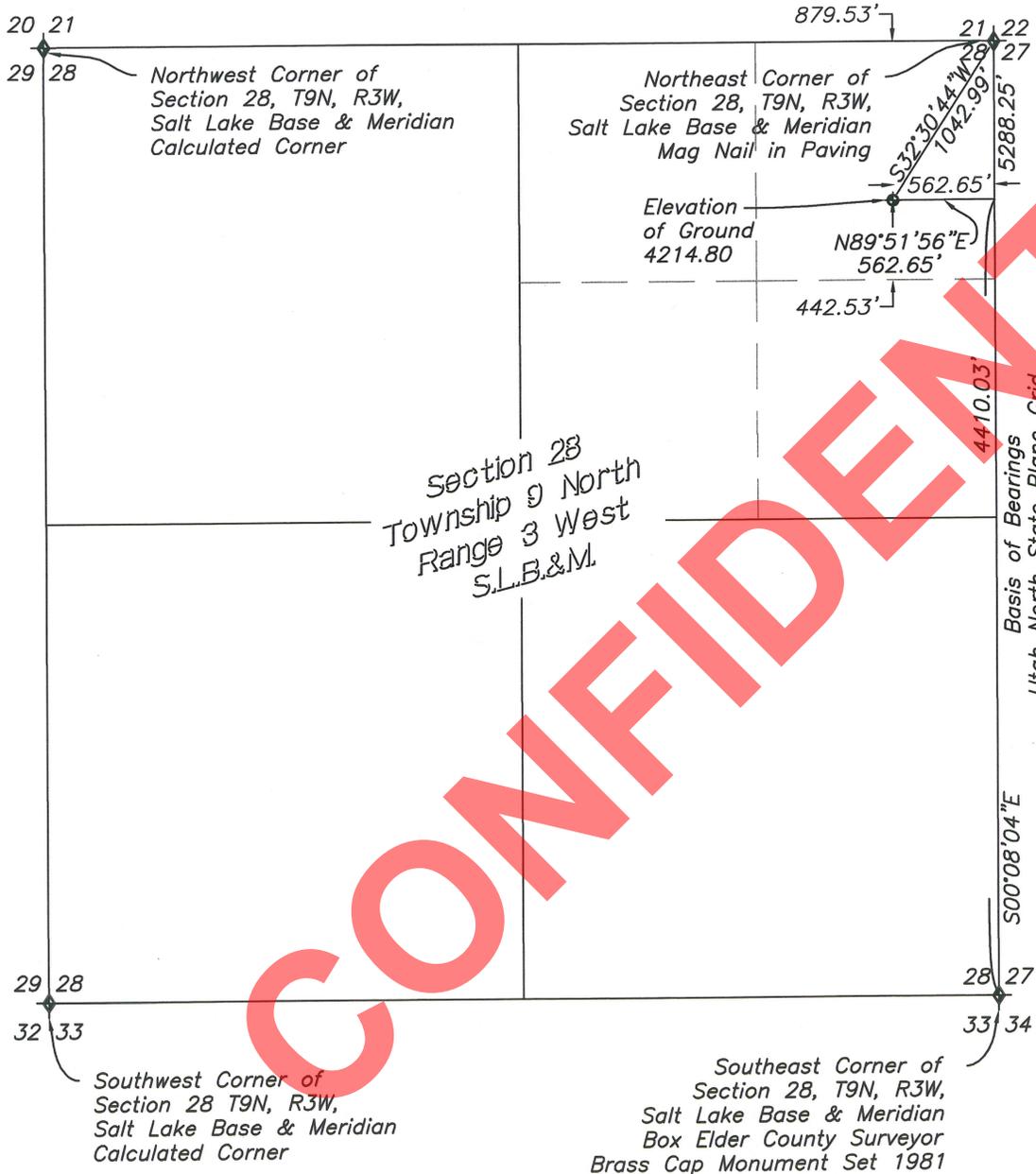
“*Sundry Notice*”, of the date on which such production has begun or resumed. The notification shall provide as a minimum, the following informational items:

- a. Operator name, address, and telephone number.
- b. Well name and number.
- c. Well location “1/4, 1/4, Section, Township, Range, Meridian,
- d. Date well was placed in a producing status.
- e. The nature of the wells production, i.e.: crude oil casing gas, or natural gas and entrained liquid hydrocarbons.

Richard B. Risien P. E.
Jetavic Petroleum Engineering Services, LLC
13007 Chavile Drive
Cypress, Texas 77429
281-807-4883 Office
281-807-5286 Fax
713-480-8199 Cell

Chesapeake 28-1

LOCATED IN THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 9 NORTH, RANGE 3 WEST, SALT LAKE BASE & MERIDIAN, BOX ELDER COUNTY, UTAH



Section 28
Township 9 North
Range 3 West
S.L.B.&M.

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BASIS OF ELEVATIONS

THE BASIS OF ELEVATION IS N.G.S. D-95 BENCHMARK, LOCATED IN THE NORTHEAST QUARTER OF SECTION 24, T9N, R2W. THE BENCHMARK IS A FIRST ORDER VERTICAL, CLASS 1, MONUMENT, WITH A PUBLISHED N.A.V.D. 88 ELEVATION OF 4501.70 FEET ABOVE MEAN SEA LEVEL.

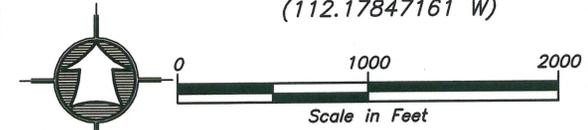
BASIS OF HORIZONTAL DATUM

THE HORIZONTAL DATUM WAS ESTABLISHED USING THE UTAH A.G.R.C. TURN NETWORK. THIS IS A REAL TIME CORRECTED NETWORK THAT UTILIZES MULTIPLE FIXED BASE SOLUTIONS AND USES THE NAD83 HORIZONTAL DATUM. A GEODETIC CALCULATOR PROGRAM WAS USED TO CONVERT THE NAD83 TO NAD27 DATUM.

CENTER OF PROPOSED WELL HEAD

NAD83
 LATITUDE = 41°29'21.5555" N
 (41.48932097 N)
 LONGITUDE = 112°10'45.3134" W
 (112.17925372 W)

NAD27
 LATITUDE = 41°29'21.7928" N
 (41.48938688 N)
 LONGITUDE = 112°10'42.4978" W
 (112.17847161 W)



LEGEND

- SECTION LINE
- - - 40 ACRE LINE
- ◆ SECTION CORNER
- ◆ PROPOSED WELL HEAD

SURVEY CERTIFICATE

I, K. Greg Hansen, do hereby certify that I am a Registered Land Surveyor, and that I hold Certificate No. 167819 as prescribed by the Laws of the State of Utah, and that I have made and/or Supervised the survey of the property shown and described hereon and that this plat is a true and correct representation of said survey to the best of my knowledge and belief.

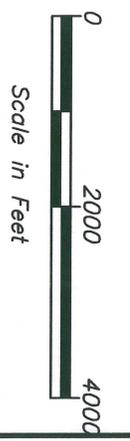
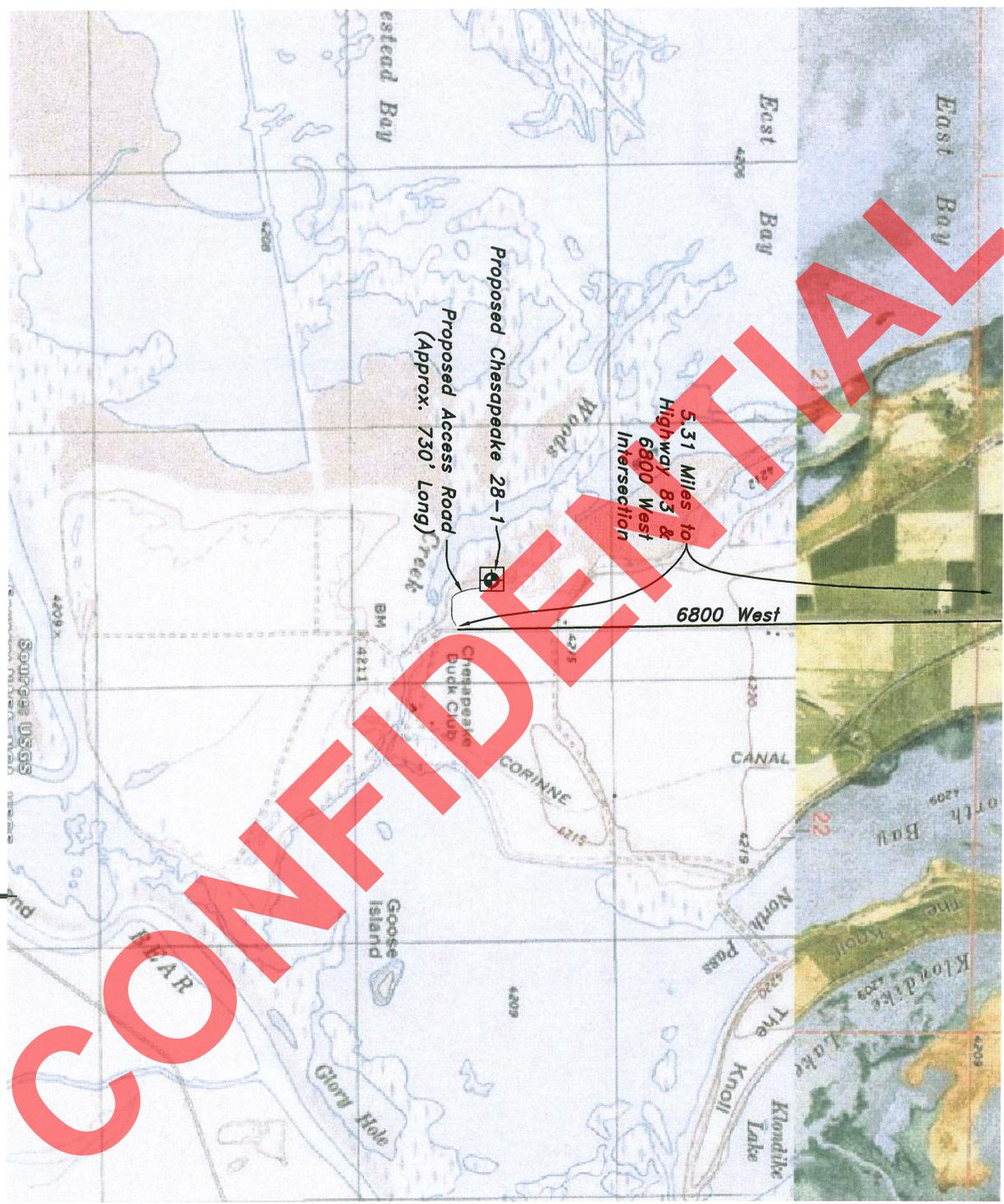


Jan. 4, 2011
date

	HANSEN & ASSOCIATES, INC. Consulting Engineers and Land Surveyors 538 North Main Street, Brigham, Utah 84302 Brigham City, Utah (435) 752-3272 (435) 752-3497 (cell) 369-4605 (fax)
Drawn By: <u> </u> Date: <u>12/16/10</u> Designed By: <u> </u> Checked By: <u> </u> Approved By: <u> </u> Scale: 1" = 1000' Drawing File: Chesapeake 28-1.dwg JOB NUMBER: 10-3-180	No. <u> </u> Date <u>1/4/11</u> Cpl. Added <u> </u> Revision <u> </u>
Well Location Drawings For: Liberty Pioneer Energy Source, Inc.	

Chesapeake 28-1

LOCATED IN THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 9 NORTH, RANGE 3 WEST, SALT LAKE BASE & MERIDIAN, BOX ELDER COUNTY, UTAH



Topographic Map For:
Liberty Pioneer Energy Source, Inc.

Drawn By: cqh Date: 12/16/10
 Designed By: _____
 Checked By: _____
 Approved By: _____
 Scale: 1" = 2000'
 Drawing File: Chesapeake 28-1.dwg
 JOB NUMBER: 10-3-180

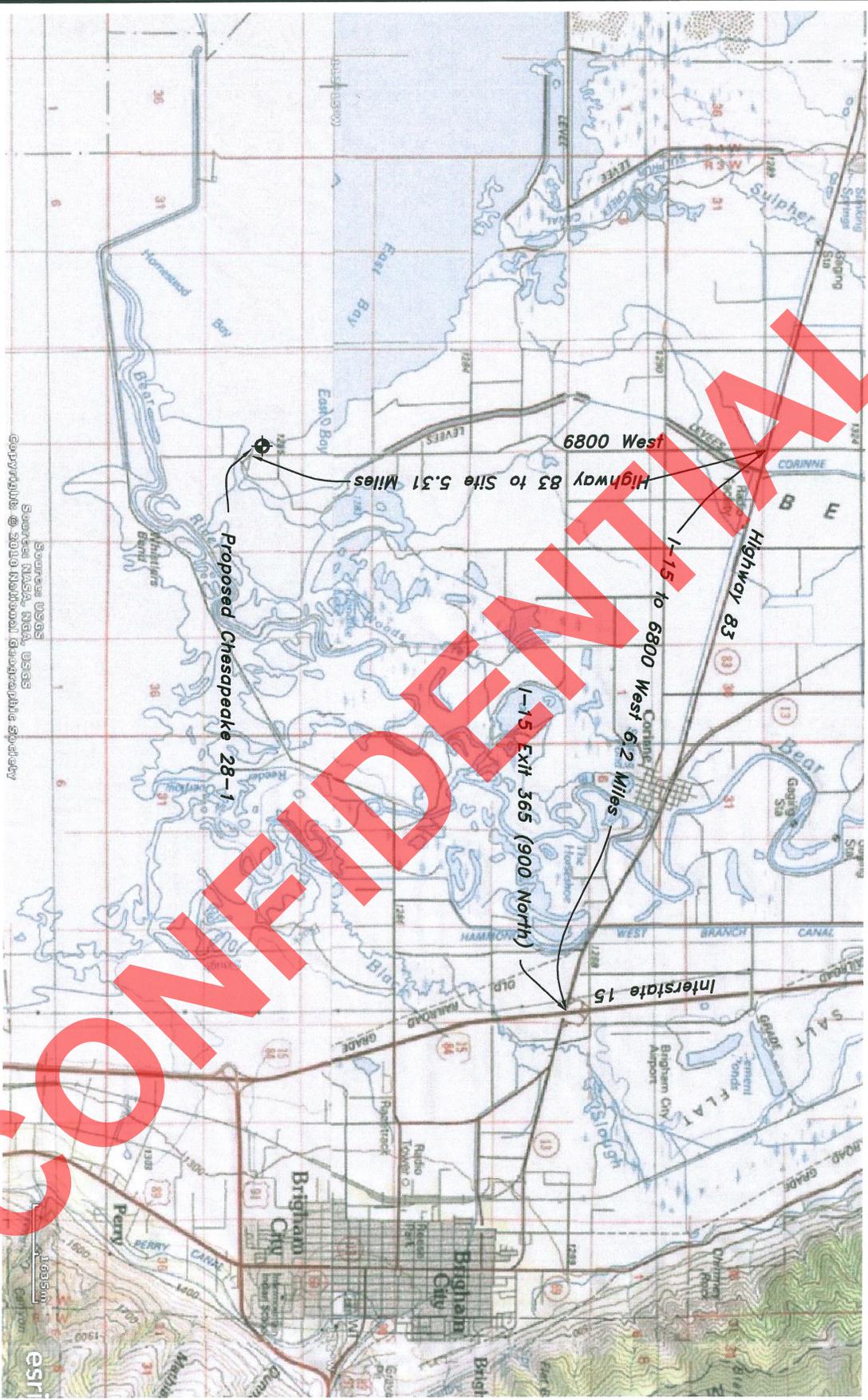


HANSEN & ASSOCIATES, INC.
 Consulting Engineers and Land Surveyors
 538 North Main Street, Brigham, Utah 84302
 Visit us at www.haies.net
 Brigham City Ogden Logan
 (435) 723-3491 (801) 399-4905 (435) 752-8272

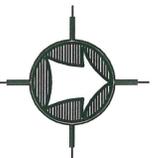
No.	Date	By	Revision

LOCATED IN THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 9 NORTH, RANGE 3 WEST, SALT LAKE BASE & MERIDIAN, BOX ELDER COUNTY, UTAH

Chesapeake 28-1



Source: USGS
 Sources: NAD83, NAD83, USGS
 Copyright © 2010 National Geographic Society



Scale 1:100,000

Topographic Map For:
Liberty Pioneer Energy Source, Inc.

Drawn By: cgh Date: 12/16/10
 Designed By: _____
 Checked By: _____
 Approved By: _____
 Scale: 1:100,000
 Drawing File: Chesapeake 28-1.dwg
 JOB NUMBER: 10-3-180



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No.	Date	By	Revision

RECEIVED: Jan. 04, 2011

SURFACE DAMAGE AGREEMENT

This Agreement is between CHESAPEAKE DUCK CLUB, hereinafter referred to a "Lessor", whose address is 1911 South 900 West, Salt Lake City, UT 84104 and GOLDEN SPIKE, LLC, hereinafter referred to as "Lessee", whose address is 1411 East 840 North, Orem, UT 84097 and LIBERTY PIONEER ENERGY SOURCE, INC, hereinafter referred to as "Operator", whose address is 1411 East 840 North, Orem, UT 84097.

The above parties agree to the basic understanding as follows:

Prior to the commencement of any drilling operation by Lessee, Operator or the assigns of either on any land on which Lessor owns surface rights ("Subject Lands"), Operator shall pay as compensation for damage to the surface, the following payments:

\$500 for each drill-site location (Drill pad and associated access road).

Operator shall use or have access to the Subject Property at its own risk. Operator agrees to bear all liabilities caused by the Lessee or its assigns and to provide proof of liability insurance and well site bond to the Lessor upon Lessor's request.

- (1) The parties herein shall mutually agree upon the location of access roads. No access road shall exceed 30 feet in width. All pipelines, power lines, and telephone lines will be buried below plow depth and mapped. In the event of a dry hole, the drill site and roadways will be restored to original condition as per the included Property Reclamation Agreement, or to Lessor's reasonable specifications.
- (2) Unauthorized persons will not be allowed on location or have access to the location. The Operator retains discretion over persons allowed access to each location. Operator will make every reasonable effort to have a company representative on the location at all times during drilling/completion operations.
- (3) Operator will reimburse Lessor for damages caused by or directly related to Operator's exploration and production of oil or gas. Operator will reimburse Lessor at a fair market value or replacement costs.
- (4) While Operator may build drill pads up to 300' x 300', Operator shall use reasonable efforts to make each drill pad as small as is reasonably necessary for each well.

PROPERTY RECLAMATION AGREEMENT

1. All topsoil will be stripped, stockpiled, and then replaced to support re-vegetation.
2. Ditches, and culverts, gates, cattle guards will be returned to original condition, or to Lessor's specifications.
3. Reclamation work will begin within 120 days of plugging of any well drilled by Operator on Operator's Lessors surface estate. Natural causes such as unusual weather conditions or ground settling may delay reclamation.
4. All construction and maintenance costs shall be born by Operator.

The terms of this Surface Damage Agreement and Property Reclamation Agreement are in addition to,

and not in lieu of, the terms of that certain Oil and Gas Lease dated October 12, 2009 recorded in Box Elder County, Entry 285380, Book 1111, Page 260. In the event of any conflict between this Agreement and said Oil and Gas Lease, the latter shall control."

This agreement pertains to all surface areas of the Subject Lands disturbed in exploration and/or development. This Agreement is fully assignable by Lessor, Lessee and Operator and shall be binding upon Lessor, its executors, administrators, successors, and assigns and upon Lessee, its executors, administrators, successors, and assigns and upon Operator, its executors, administrators, successors, and assigns.

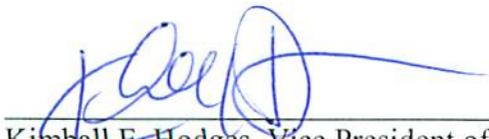
Signed this 23rd day of December, 2010.



Daniel Gunnell, manager of ~~SUNOCO~~ ^{PETRO FUSO}, LLC
manager of Golden Spike, LLC, Lessee

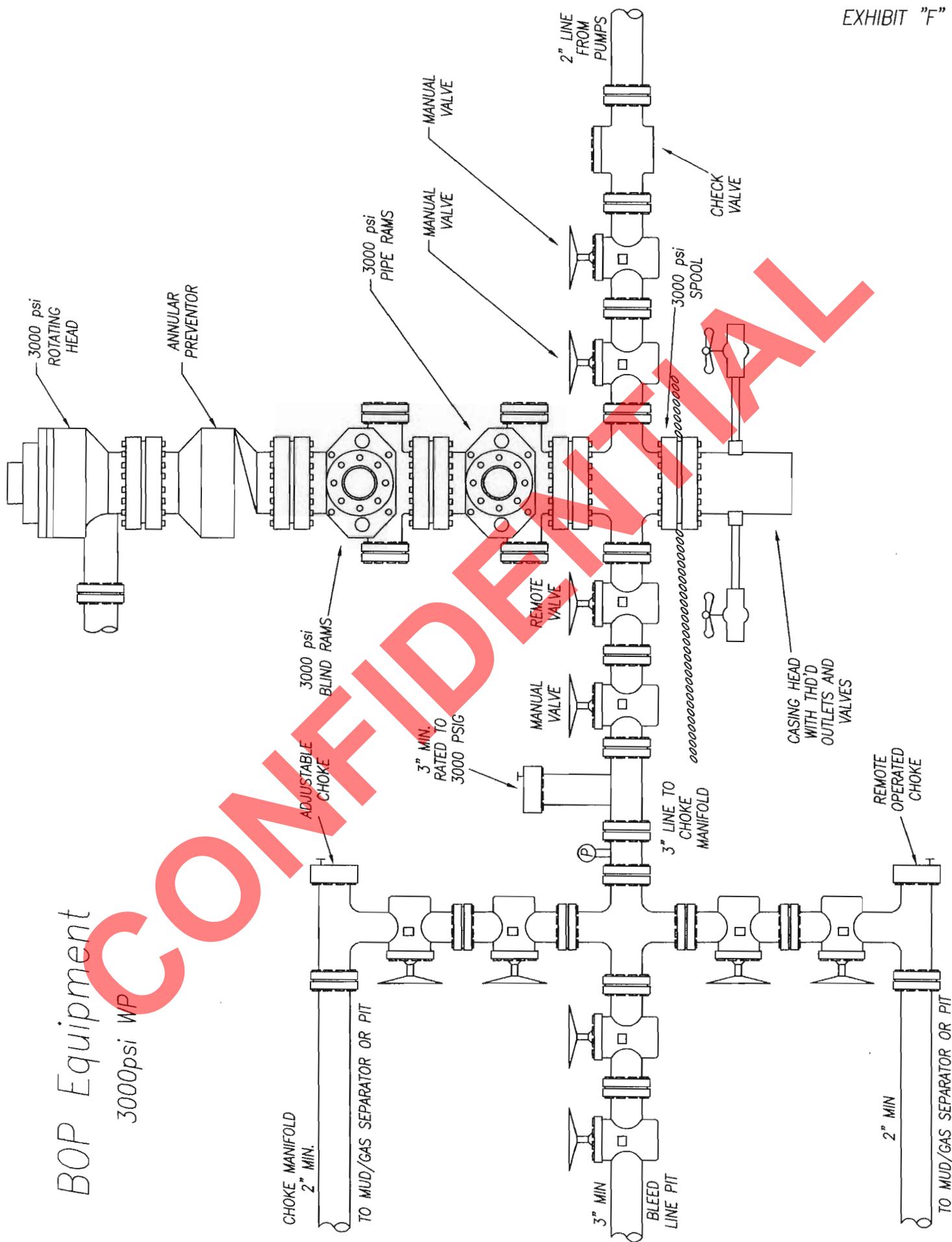


J. Thomas Bowen, President of
Chesapeake Duck Club, Lessor



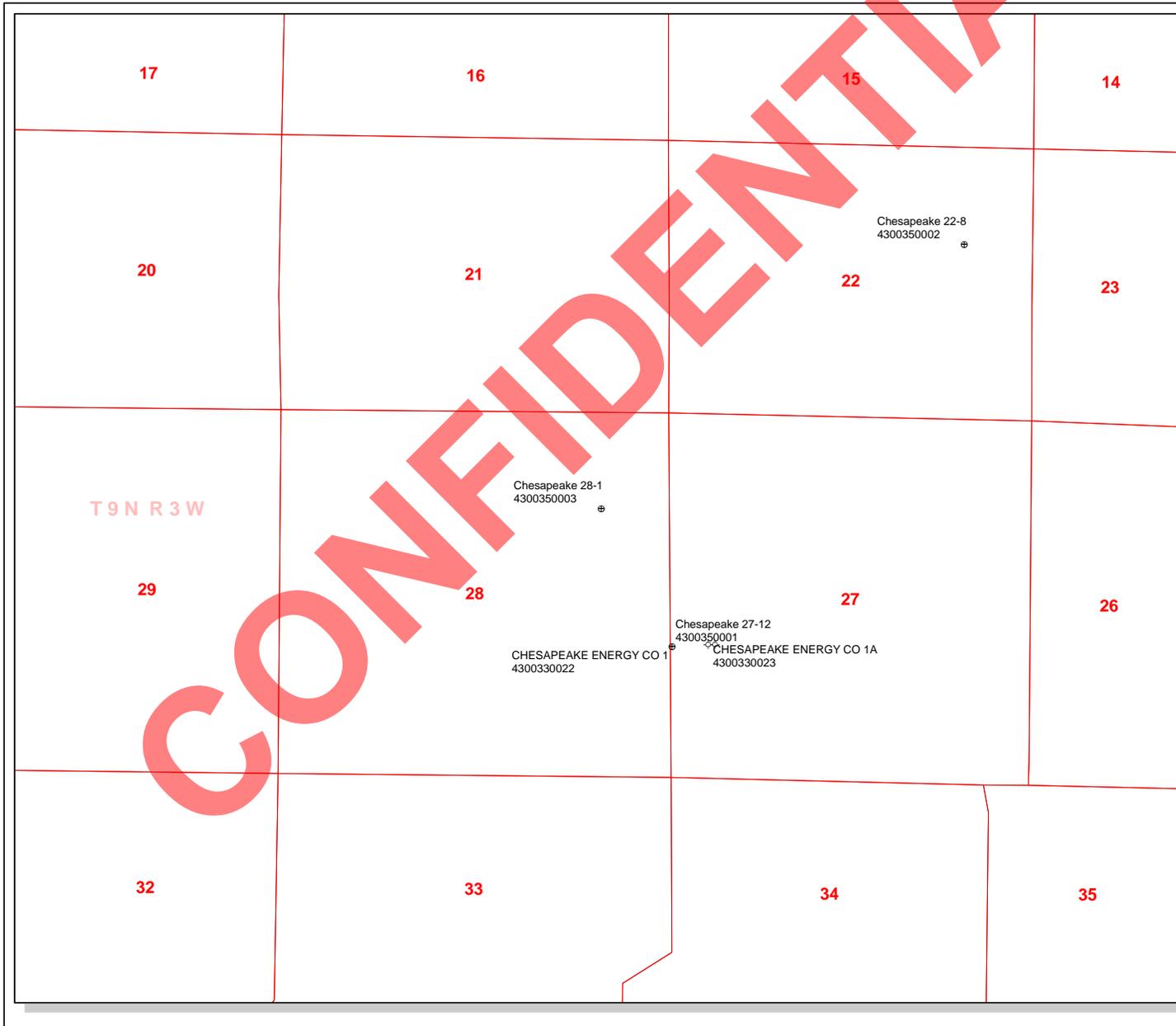
Kimball E. Hodges, Vice President of
Liberty Pioneer Energy Source, Inc., Operator

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BOP Equipment
3000psi WP

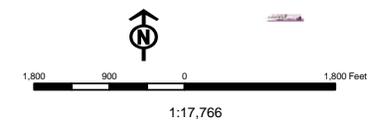
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API Number: 4300350003
Well Name: Chesapeake 28-1
Township 09.0 N Range 03.0 W Section 28
Meridian: SLBM
 Operator: LIBERTY PIONEER ENERGY SOURCE, INC

Map Prepared:
 Map Produced by Diana Mason

- | | |
|---------------|------------------------------------|
| Units | Wells Query |
| STATUS | Status |
| ACTIVE | APD - Approved Permit |
| EXPLORATORY | DRL - Spudded (Drilling Commenced) |
| GAS STORAGE | GIW - Gas Injection |
| NF PP OIL | GS - Gas Storage |
| NF SECONDARY | LA - Location Abandoned |
| PI OIL | LOC - New Location |
| PP GAS | OPS - Operation Suspended |
| PP GEOTHERML | PA - Plugged Abandoned |
| PP OIL | PGW - Producing Gas Well |
| SECONDARY | POW - Producing Oil Well |
| TERMINATED | RET - Returned APD |
| Fields | SGW - Shut-in Gas Well |
| Unknown | SOW - Shut-in Oil Well |
| ABANDONED | TA - Temp. Abandoned |
| ACTIVE | TW - Test Well |
| COMBINED | WDW - Water Disposal |
| INACTIVE | WIW - Water Injection Well |
| STORAGE | WSW - Water Supply Well |
| TERMINATED | |
| Sections | |
| Township | |





2580 Creekview Road
Moab, Utah 84532
435/719-2018

January 10, 2011

Mrs. Diana Mason
State of Utah
Division of Oil Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

RE: Request for Exception to Spacing – Liberty Pioneer Energy Source, Inc. – Chesapeake 28-1
880' FNL & 563' FEL, NE/4 NE/4, Section 28, T9N, R3W, SLB&M, Box Elder County, Utah

Dear Diana:

Liberty Pioneer Energy Source, Inc respectfully submits this request for exception to spacing (R649-3-3) based on topography since the well is located less than 460 feet to the drilling unit boundary. Liberty Pioneer Energy Source, Inc. is the only owner and operator within 460' of the surface and target location as well as all points along the intended well bore path and are not within 460 feet of any uncommitted tracts or a unit boundary.

Thank you very much for your timely consideration of this application. Please feel free to contact me at 435-719-2018 if you have any questions or need additional information.

Sincerely,

Don Hamilton
Don Hamilton
Agent for Liberty Pioneer Energy Source, Inc

cc: Kimball Hodges, Liberty Pioneer Energy Source, Inc



2580 Creekview Road
Moab, Utah 84532
435/719-2018

January 10, 2011

Mrs. Diana Mason
State of Utah
Division of Oil Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

RE: Request for Exception to Spacing – Liberty Pioneer Energy Source, Inc. – Chesapeake 28-1
880' FNL & 563' FEL, NE/4 NE/4, Section 28, T9N, R3W, SLB&M, Box Elder County, Utah

Dear Diana:

Liberty Pioneer Energy Source, Inc respectfully submits this request for exception to spacing (R649-3-3) based on topography since the well is located less than 460 feet to the drilling unit boundary. Liberty Pioneer Energy Source, Inc. is the only owner and operator within 460' of the surface and target location as well as all points along the intended well bore path and are not within 460 feet of any uncommitted tracts or a unit boundary.

Thank you very much for your timely consideration of this application. Please feel free to contact me at 435-719-2018 if you have any questions or need additional information.

Sincerely,

Don Hamilton
Don Hamilton
Agent for Liberty Pioneer Energy Source, Inc

cc: Kimball Hodges, Liberty Pioneer Energy Source, Inc



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Office of the Governor
PUBLIC LANDS POLICY COORDINATION

JOHN HARJA
Director

January 24, 2011

Diana Mason
Petroleum Specialist
Department of Natural Resources, Division of Oil Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

Subject: Application for Permit to Drill 880 FNL 563 FEL, 880 FNL 563 FEL and 2063 FSL
566 FWL
RDCC Project Nos. 24760 through 24762

Dear Ms. Mason:

The State of Utah, through the Public Lands Policy Coordination Office (PLPCO), has reviewed this project. Utah Code (Section 63J-4-601, *et. seq.*) designates PLPCO as the entity responsible to coordinate the review of technical and policy actions that may affect the physical resources of the state, and to facilitate the exchange of information on those actions among federal, state, and local government agencies. As part of this process, PLPCO makes use of the Resource Development Coordinating Committee (RDCC). The RDCC includes representatives from the state agencies that are generally involved or impacted by public lands management.

Division of Air Quality

Because fugitive dust may be generated during soil disturbance the proposed project will be subject to Air Quality rule R307-205-5 for Fugitive Dust. These rules apply to construction activities that disturb an area greater than 1/4 acre in size. A permit, known as an Approval Order, is not required from the Executive Secretary of the Air Quality Board, but steps need to be taken to minimize fugitive dust, such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks. A copy of the rules can be found at www.rules.utah.gov/publicat/code/r307/r307.htm.

If compressors or pump stations are constructed at the site a permit application, known as a Notice of Intent (NOI), should be submitted to the Executive Secretary at the Utah Division of Air Quality at 150 N. 1950 West, Salt Lake City, Utah, 84116 for review according to R307-401: Permit: Notice of Intent and Approval Order, of the Utah Air Quality Rules. A copy of the rules can be found at www.rules.utah.gov/publicat/code/r307/r307.htm.

The state encourages the use of Best Management Processes (BMP s) in protecting air quality in Utah. The state recommends the following BMP s as standard operating procedures:

- 1) Emission Standards for Stationary Internal Combustion Engines of 2 g/bhp-hr of NOx for engines less than 300 HP (Tier 3) and 1 g/bhp-hr of NOx for engines over 300 HP (Tier 3).
- 2) No or low bleed controllers for Pneumatic Pumps, Actuators and other Pneumatic devices.
- 3) Green completion or controlled VOC emissions methods with 90% efficiency for Oil or Gas Atmospheric Storage Tanks, VOC Venting controls or flaring, Glycol Dehydration and Amine Units Units, VOC Venting controls or flaring, Well Completion, Re-Completion, Venting, and Planned Blowdown Emissions.

The State of Utah appreciates the opportunity to review this proposal and we look forward to working with you on future projects. Please direct any other written questions regarding this correspondence to the Public Lands Policy Coordination Office at the address below, or call Judy Edwards at (801) 537-9023.

Sincerely,



John Harja
Director

Liberty Pioneer Energy Source, Inc.

Spill Emergency Response Plan

CONFIDENTIAL

March 2011

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Appendix A

Initial Response and Notification Information

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1.0 Introduction

The Emergency Response Plan is designed to help Liberty Pioneer Energy Source, Inc. (Liberty Pioneer) respond quickly and effectively to emergency situations. The Plan's primary goal is to help the company prevent any loss of life or damage to property, wildlife, or the environment.

Emergency situations can result in injury or loss of life to personnel, and damage to public or private property. The best way to handle emergency situations is to prevent their occurrence. However, if emergencies do arise, prompt and effective control can help to minimize damage.

The plan is prepared:

- To define emergencies or situations that could become emergencies.
- To clearly detail the actions and responsibilities of each company personnel and contractor when encountering an emergency situation or major spill.
- To provide information on the means of handling serious incidents and identify the organizations involved.
- To identify the Liberty Pioneer personnel and regulatory agencies that must be notified.
- To provide a basis for training personnel to respond to emergencies.

Prompt action is mandatory to control emergencies situations and limit damage. All applicable personnel should be informed to take quick action to protect life and property. Incidents should be reported immediately to Liberty Pioneer supervisors and managers.

This plan is not intended to replace existing SPCC (Spill Prevention, Control and Countermeasures) Plans, but provides guidelines for emergency situations.

This document is not meant to be a comprehensive summary of spill emergency response and remediation techniques; rather it is intended to provide operations personnel with sufficient information so they can readily assess a spill, know which government agency to report to, what to report, and how to address the spill. This document only covers spills that are "manageable" with the tools and resources that operations personnel have readily available to them. The document does not cover unmanageable or catastrophic spills that require specialized expertise and equipment.

Regardless of the size or type of spill, if difficulties or uncertainties arise, contact Buys & Associates, Inc. environmental personnel for advice and assistance. Please refer to the contact information provided in Section 4.1.

This Operational Spill Guideline covers spills associated with construction, drilling, completion and production operations and services associated with them.

A copy of this Project Specific Operation Spill Guideline is on file at the following locations:

Liberty Pioneer Energy Source, Inc.
Construction/Drilling Site
Orem Office
Division of Oil, Gas and Mining
SLC Office
Box Elder County
Tremonton Office

2.0 Spill Reporting Procedures

Spill reporting is an important part of environmental management. There can be fines and penalties imposed upon a company for not reporting a spill if it is considered a “reportable” occurrence under the legislation. This section outlines when a spill is reportable, and to whom the spill must be reported. In addition to reporting to regulators, Liberty Pioneer personnel must be informed, and an incident/accident report completed and submitted to the Liberty Pioneer – Orem Office (Kimball Hodges). Sections 3 and 4 outline external and internal reporting procedures respectively.

3.0 External Spill Reporting Requirements

External spill reporting requirements are state and federal requirements as they relate to “reportable” spills.

3.1 What is a Reportable Spill?

3.1.1 Oil, Condensate, and Produced Water

Reportable spills are:

ANY spill of oil, condensate or produced water **OFF LOCATION** including all spills associated with pipelines.

ON LOCATION spills in excess 25 US gallons or all spills which would require more than a shovel and small containment barrel to manage.

Any spill of chemical (on location or off location) identified as a **toxic substance** according to the MSDS documentation provided with the product.

Spills that may cause an adverse effect to the environment. An adverse effect is defined as “*impairment of or damage to the environment, human health, or safety or property*” Specifically it is considered the following:

- Spill is confirmed to have moved off-location (including vertical migration to water table);
- Contaminants are present off-location at levels generally accepted to be problematic to soil, groundwater, livestock, and vegetation. This includes third party impact such as vegetation damage, and livestock impact;
- Release is into surface water or a watercourse and moves off location.
- Release or spill has potential for offsite odor complaints; and
- Potential for toxic or flammable release to air going offsite.

For assistance in determining if a release can be classified as an “adverse effect” or “potentially hazardous to the environment”, contact Buys & Associates, Inc. environmental personnel (See contact information provided in Section 4.1).

3.1.2. Chemical and Refined Hydrocarbon Spill

Spills of production chemicals, fuels, lubricating oils as well as other refined hydrocarbons require reporting. Reporting of **ANY AMOUNT** of chemicals identified as toxic substances is required. Most of these compounds are associated with the downstream refining end of the petroleum industry, and are therefore not dealt with in detail in this report.

3.1.2.1 Release into Water

A release of **ANY AMOUNT** of a chemical into surface water, a watercourse or groundwater that can cause an adverse effect on the environment must be immediately reported. Typically this means water found external to a bermed area. The regulations require reporting of any amount that can cause an adverse effect. This effectively means any chemical, fuel or lubricant used in construction, drilling, completion and production operations that is spilled into surface water must be reported. The regulatory authority then decides if any further action is required.

3.1.2.2 Releases onto the Ground

A release of chemical or fuels onto the ground must be reported if the amount equals or exceeds the amount stated in the Transportation of Dangerous Goods (TDG) Regulations as outlined in Table 3.1.

3.1.3 Cumulative Releases

Cumulative Releases involve the slow release of material over a sufficiently long time that the volumes eventually become significant and represent a potential risk to the environment. Cumulative releases that typically occur at our operations are associated with loadouts, tank farms, pits, etc. and are relatively confined, therefore not causing a “significant environmental effect”. Although the reporting of cumulative releases is required if they are causing a significant environmental effect, it should only be done in

consultation with Liberty Pioneer's environmental staff (See contact information in Section 4.1)

3.2 Who is to Report?

When an operator, maintenance person or other employee discovers a reportable spill, the area supervisor of Liberty Pioneer must be notified immediately. The area supervisor must immediately contact the appropriate government agency (Table 3.4) to report the spill. Liberty Pioneer employees and contractors are not to contact regulators unless directed to do so.

3.3 When to Report and What to Report?

A release should be reported to the appropriate government agency as soon as it is discovered or at the first available opportunity. The requirement for reporting is both verbal and written depending on the severity of the spill. Government authorities will advise if a written report is required at the time the verbal report is provided. Reporting personnel should make a point of inquiring about the need for a written report. Table 3.2 outlines the specific information to be provided verbally and in written reports for spills of oil, condensate and produced water, as well as spills of chemicals and refined hydrocarbons. Verbal reports are provided as soon as possible, written reports are provided according to the schedule required by the government agency.

Proposed activities are located in Box Elder County. In the Box Elder County region, the respective County Hazardous Material Response Coordinator will contact state and federal agencies. Written reports will be compiled and submitted by Liberty Pioneer.

4.0 Information to Report

4.1 Initial Verbal Report (to be provided immediately) See Form 6.1

The first priority during any emergency is the protection of human life. The following guidelines should be followed after it is determined that the actions can be taken without endangering the health and safety of personnel or the public.

The second priority is the protection of property and the environment.

The personnel who is first aware of the incident will assess the situation, provide assistance if necessary, and/or call for emergency services. Steps should then be taken to correct the problem or reduce the severity of the situation, if it is safe to do so. The personnel will then notify the On-site Supervisor.

In the event that any of the contact persons are unavailable, contact the next person in the chain of command. Do not simply leave a voice mail and consider that notification has been made. Continue to call the applicable supervisors and managers until a live person has been notified.

Situation	Immediate Response	Who To Call
Spills;	Contain or limit spill;	On-site Supervisor
Damage to property;	Assess damage;	
Adverse publicity	Control access to site.	
Personnel injury (severe)	Provide assistance and call for help or transport injured person.	Call 911. Then call On-site Supervisor.
Fires and explosions;	Evacuate the immediate area.	Call 911.
Hydrogen sulfide release;	Call for help from at least one block away.	Then call On-site Supervisor.
Well blowout;		
Bomb threat		
Severe weather		Call On-site Supervisor.

The most critical aspects of spill response are accurately locating the spill, isolating or shutting in the source of the spill if possible, and containing and recovering surface fluids. All of these activities must be undertaken with due consideration for the safety of the operator, clean-up crews and the general public.

The personnel discovering the spill (or first at the spill site) will:

Take actions to safely stop the release, contain it to the location, and prevent the spill from reaching surface water.

Notify the On-site Supervisor or Drilling Manager, giving details of estimated volume spilled, status of discharge, and other details that will facilitate response and clean-up:

Oil, Condensate and Produced Water

- The location and time of the release;
- The type and quantity of the material released;
- The details of any action taken so far, and the actions proposed to be taken at the site;
- A general description of the location of the release and of the immediate surrounding area;

Chemical and Refined

- Date and time of the release, or the time period over which the release occurred if known;
- The location of the release;
- The duration, frequency and rate of release if known;
- The type of chemical released according to TDG classification and amount released if known;
- A discussion of spill containment and recovery procedures used;
- A discussion of steps to be taken to prevent similar spills;
- The status of the remediation program (remediated, under active remediation or to be remediated);
- The remediation plan and schedule of implementation if required; and
- Information regarding landowner notification

Oil, Condensate and Produced Water

- Date and time of the release, or the time period over which the release occurred if known;
- The location of the release; The duration, frequency and rate of release if known;
- The type of material released (crude oil, produced water, sour gas, etc.) including concentration of key components and amount released if known;
- A discussion of spill containment and recovery procedures used;
- A discussion of steps to be taken to prevent similar spills;
- The status of the remediation program (remediated, under active remediation or to be remediated);
- The remediation plan and schedule of implementation if required; and information regarding landowner notification

Chemical and Refined Hydrocarbon

- A description of the circumstances leading up to the release;
- A discussion of spill containment and recovery procedures used;
- A discussion of steps to be taken to prevent similar future spills; and an outline of the proposed spill site reclamation program

Verbal Reporting Procedures:

The following contacts must be made in the event of an injury, reportable spill or other emergency:

Box Elder Sheriff's Department, Emergency Response Coordinator: Kevin Potter - (435) 734-3814

Kevin Potter or the Sheriff's office dispatcher will assess the need for service and will dispatch emergency Police, Ambulance, Fire and/or Hazardous Material Response as required.

Construction, drilling, completion and production operations personnel will contact the Box Elder County Sheriff's Department (435) 734-3814 in the early stages of operation to advise them of the start of operation and to provide instructions to reach the operations site. The directions will be kept on file with the Emergency Response Coordinator and utilized if required.

In the event of a spill the Emergency Response Coordinator will contact the Box Elder County Hazardous Material Response Team who will access the situation and activate the Box Elder County Hazmat response plan as required. The Emergency Response Coordinator will also act as first contact advisor to initial clean-up efforts. The Emergency Response Coordinator will also contact additional regulatory agencies as required.

Once initial emergency notification has been completed contact must be made to Liberty Pioneer prior to contacting any additional regulatory agencies or clean-up contractors.

Liberty Pioneer Energy Source, Inc.:

Daniel R. Gunnell (President and CEO)	801-224-4771 (office)
	801-224-1593 (mobile)
Kimball Hodges (Vice President)	801-224-4771 (office)
	801-787-5351 (mobile)
Richard Risien	281-807-4883 (mobile)
Don Hamilton (Emergency Response Coord.)	435-719-2018 (office)
	435-650-3866 (mobile)
	435-719-2018 (home)

Kimball Hodges or alternative contact, will activate Liberty Pioneer's spill response personnel, if required, and dispatch an environmental/ spill specialist to site. The On-site Supervisor will dispatch a Drilling Construction Supervisor to the site to manage spill containment and clean up operations if spill severity requires it. The On-site Supervisor will communicate with the Box Elder County Hazardous Material Response Coordinator. The Division of Oil, Gas and Mining will help facilitate and manage the overall clean-up operation and ensure to that all government requirements are met.

Initial clean-up response would be provided through Thayne F Gerhardt. Thayne F Gerhardt could provide trackhoes, backhoes, bulldozers, vac trucks and dump trucks, as needed. Nielson also has truck capable of transporting and disposing of hydrocarbon-saturated soils.

Thayne F Gerhardt	435-744-5148 (Office)
	435-279-0508 (mobile)

Liberty Pioneer Health, Safety and Environment Department:

The Liberty Pioneer HSE Department will provide spill clean up guidance and will prepare detailed spill reports for the regulatory agencies. HSE spill specialists will liaise with Box Elder County Hazardous Material Response Coordinator to ensure that all government regulations and requirements are met. HSE spill specialists will work with and advise the onsite Drilling Construction Supervisor regarding clean up measures required. HSE spill specialist will coordinate all post clean up sampling activity and reporting to the respective regulatory agencies:

Utah Division of Oil, Gas and Mining:

Ted Smith- Permitting, Petroleum Specialist	801-538-5303 (Office)
Dan Jarvis – Field Operations Manager	801-538-5338 (Office)
Brad Hill – Oil and Gas Permitting Manager	801-538-5315 (Office)

Box Elder County Road Department:

Bill Gilson, Box Elder County Road	435-257-5450 (Office)
------------------------------------	-----------------------

Initial regulatory contact should be with Ted Smith of the Utah Division of Oil, Gas and Mining. He will be able to activate their spill response plans. If unable to contact Ted Smith directly, contact Dan Jarvis. If both points of contact fail contact Brad Hill.

In the State of Utah, "undesirable events" must be reported to the Utah Division of Oil, Gas and Mining (UDOGM). UDOGM does not provide emergency response for undesirable Events, but must be notified of their occurrence.

Environmental Protection Agency:

General Number for Spill reporting (Federal): **800 424-8802 (24 hour)**

The EPA **must** be notified in the event of an oil spill. This number can also be used to report a suspected terrorist threat. This number is US Coast Guard In Washington National Response center. They will contact the region in which the spill occurs and a regional coordinator may be dispatched to the site depending on severity of the spill. Both the Liberty Pioneer supervisor and the Box Elder County Hazardous Material Response Coordinator must contact the EPA.

Department of Environmental Quality: **801 536-4123 (24 hours)**
Utah State division of EPA

This division **must** be contacted in the event of any spill (regardless of size). This is the state emergency response commission. A representative will be sent to the site if required.

Any spill which enters or has potential to enter "waters of the State", a call to 801-536-4100, after hours 801-536-4123, outside Salt Lake area 1-800-572-6400 must be made. Box Elder County Hazardous Material Response Coordinator should be consulted prior to making these calls.

WRITTEN REPORTS

Following the above phone calls, complete written reports of all undesirable events should be submitted to UDOGM using the Incident Report e-Form (via internet) OR by using the Incident Report Form at the end of this plan, as soon as conclusive information is available. All written reports must be reviewed by Liberty Pioneer management prior to submission.

UDOGM
1594 West North Temple,
Salt Lake City, Utah 84116
Hours: 7:00 a.m. - 6:00 p.m. Monday - Thursday
Phone: (801) 538-5340

5.0 General Spill Response Plan

5.1 Initial Communication and Action Procedure

Internal spill reporting procedures require completion of a Company incident/accident report as well as a spill assessment form. Information contained on this form assists operators in providing verbal reports to government authorities. The spill assessment form also helps to characterize the spill sufficiently that appropriate response procedures can be initiated. The assessment form covers spills from all facilities associated with the upstream oil and gas sector including pipelines, however the form will be completed for reportable spills only. The form is to be completed by operators at the time the spill is discovered. It is maintained with the operator's files with a copy forwarded to Liberty Pioneer. The assessment form is not submitted to any government agencies. A copy of the assessment form is contained in Appendix C.

The following spill response procedure is to be adopted for any spill.

The most critical aspects of spill response are accurately locating the spill, isolating or shutting in the source of the spill, if possible, and containing and recovering surface fluids. All of these activities must be undertaken with due consideration for the safety of the operator, clean-up crews and the general public. Reporting of the spill should take place once initial activities to contain and recover the spill are underway. Reports should be submitted to the appropriate government agencies, as well as to Liberty Pioneer. The spill assessment form as well as an incident/accident report form must be completed and retained in company files.

5.2 Supervisor's Responsibilities.

Liberty Pioneer's environmental staff can provide advice and assistance with respect to operator responsibilities as required. Operator is responsible for the following items:

- Assessing the location and source of the spill and determining if the spill can be contained;
- Assessing the hazards associated with responding to a spill ;
- Determining the extent/impact of the spill;
- Contacting and dispatching clean-up crews;
- Controlling access to the spill site;
- Coordinating the containment and recovery of surface fluids;
- Notifying company and regulatory agencies;
- Completion of spill assessment form, and incident/accident report form;
- Ensuring topsoil is salvaged and segregated; and
- Scheduling clean-up and repairs.

5.3 “First Response” Companies

First response companies will provide assistance with initial containment and recovery of product. Operators should be aware of local “first response” companies that they can call on to assist in initial containment of the spill:

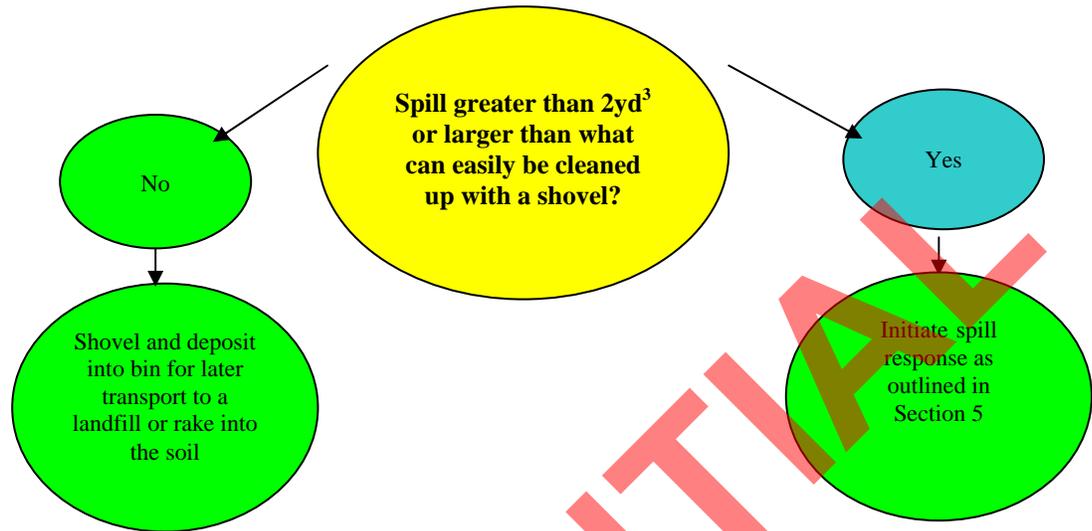
Thayne F Gerhardt	435-744-5148 (Office) 435-279-0508 (mobile)
Buys & Associates, Inc.	435-719-2018 (Office)
Don Hamilton	435-650-3886 (Mobile)
Doug Henderer	303-781-8211 (Office)
Enviro Care (Katie Nesie)	800-820-9058 (Office)
HMHTTC Response Inc. (Jeff Jacobson)	973-770-6900 (Office)

6.0 Spill Management

6.1 Small versus Large Spills

Many spills occur that are typically very small and located within the pad area. For smaller spills under 14 barrels, the technique for spill clean-up is basically shoveling the material into a bin and disposing of it along with other oil field waste materials as per routine disposal methods to a landfill. Generally, Class I landfills accept this type of waste, however if the material is contained within bins, Class II landfills may also accept the bins. Other methods of manual recovery include using cans, buckets or rakes to pick-up contaminated soils on the surface. The important point to consider when remediation small spills is to ensure that **ALL** of the affected soils have been removed or otherwise dealt with and all actions to clean-up, repair the problem, and prevent further occurrence are well documented. This is most easily accomplished if the spill is actioned immediately, thereby not allowing the spill to soak into the ground.

The following illustrates the decision matrix for spill clean-up.



6.2 Remediation for Large Spills

The information contained within this section is meant to provide guidance on initial containment, recovery and treatment measures to be applied to spills, which are “manageable” with the equipment and expertise available to the majority of Liberty Pioneer operations supervisors. This section is not meant for larger, uncontrolled spills that will require specialized equipment and expertise.

Spills will require initial containment and treatment so as to minimize spill clean up and site restoration work, and the potential for environmental and public health risks. This section provides information on initial treatment to stabilize the spill and prevent the worst effects from settling in before the site can be sampled and more specific treatments applied. Contact Liberty Pioneer Environmental staff for any additional advice or assistance that may be required. See contact information provided in Section 4.1.

6.2.1 Spill Containment

Containment measures may be broadly categorized into two groups: land based and water based. The options for containment make use of a wide range of locally available materials such as straw, chicken wire, and snow fencing as well as commercial sorbents and booms.

6.2.1.1 Land Containment Methods

It is important to note that land spills are generally much easier to deal with than spills that have reached a waterway. Efforts should be made to prevent or stop spilled product from entering the water.

Land containment of spills can be achieved by using minor earthworks such as trenches and earth dams or dykes. In the winter, snow can be used for a similar purpose. Snow is also a suitable sorbent material for spills other than salt spills. Salt will melt the snow and result in further spread of salt contamination.

Trenches

Trenches can be used to intercept and hold all types of fluids, however trench construction is practical only in the summer. Figures 6.1 and 6.2 provide details of an interceptor trench and methods of using trenches to intercept overland and subsurface flow.

Trench construction should include the use of a plastic liner. This prevents downward migration into subsurface soils and potentially groundwater. Relatively shallow trenches may be strategically placed down slope of a spill to intercept surface and subsurface spilled materials. This method is effective in preventing subsurface contamination of water and eventual discharge to streams and other water bodies. Equipment required to build a trench includes:

- Backhoe, loader, dozer;
- Shovels, picks; and
- Plastic liners.

Dams and Dykes

Earth and snow dams may be constructed across ditches or low areas to contain a spill and stop its flow. The entire flow of the spilled material and any surface drainage may be contained. Construction materials include earth, wood, sandbags, and snow. The dam or dyke should be lined with plastic sheeting to make it impermeable to the spilled product. In the winter, water may be sprayed on the snow dams or dykes to create ice. Dams should be of sufficient size to contain the entire spill volume; insufficient capacity may result in overtopping and/or failure.

6.2.1.2 Containment on Waterways

Water containment measures generally include the use of booms or barriers. However dams and weirs may also be used for ditches with flowing water and for smaller streams. Figure 6.3 illustrates the use of dams and weirs. These methods are typically used where it is necessary to allow the water to flow, while retaining lighter than water liquids such as petroleum products that separate readily from water.

Water bypass or underflow dams may also be constructed on small, slow-flowing streams. Water bypass involves first constructing an earthen dyke to stop the flow of water, and then inserting a pipe below the level of the spilled material and discharging the water on the other side of the dyke. (Figure 6.4). It is important to note that the discharge

end of the pipe should not be inclined above the level of the dyke or overtopping and failure will result.

Weirs made from plywood, lumber and sheet metal may also be used in ditches with flowing water and may be placed to completely or partially block culvert openings. These barriers may be suspended from stakes on either side of the culvert openings and raised or lowered to maintain the desired water level while retaining the oil.

Recovery of material collected behind dams and weirs may be made with the use of sorbents, skimmers or by direct suction.

Other water containment measures include the use of booms or barriers. These methods are typically limited to the containment and recovery of materials that will readily separate from and float on water. The type and size of a boom will depend on the specific location and the conditions within which the boom will be used. The general principles for using a boom are:

- To contain a spill of floating liquid or debris;
- To deflect or divert material to a defined area so that it may be recovered; and
- To protect sensitive areas from contamination

There are many common items that can be used as improvised booms. These include:

- Railroad ties;
- Telephone or power poles;
- Trees;
- Lumber;
- Inflated fire hose;
- Styrofoam;
- Chicken wire or fishing net and sorbent materials (rolled into a sausage shape).

It is important that buoyant material be used within the boom; otherwise it will become water logged and sink after several hours. Rope or wire can be used to hold the boom sections in place. Natural sorbents include straw and evergreen boughs. Commercial sorbents have greater capacity to absorb oil and other petroleum products; they last longer, and can be reused. Foam sections have good sorbent capacity and excellent buoyancy. Figures 6.5 and 6.6 illustrate methods of connecting booms together and construction of a "jellyroll" or "sausage roll" using improvised sorbent barriers.

Proper boom deployment is a critical consideration. The angle of the boom relative to the flow direction must be related to water flow velocity in order to achieve effective containment (Figure 6.7). Several booms arranged in parallel may be necessary to contain the entire product. These should be spaced to allow for particles, which may escape the first boom, float to the surface, and be contained by the next boom. In

addition, the use of several booms permits the removal of a boom for cleaning. Figures 6.7 to 6.9 illustrate boom deployment methods. The chart at the bottom of Figure 6.7 illustrates the proper angle to deploy the boom based on water velocity. The higher the stream velocity, the more perpendicular the boom will be with respect to the crossing. In the example shown in the illustration, proper boom deployment is at an angle of 24° for a stream flow velocity of 175 feet/minute.

Fixed barriers can be used in streams with soft beds where stakes can be driven. A snow fence barrier may be installed to span the width of a stream less than 1 m deep and may be anchored at both ends with steel or wooden stakes. Stakes are driven into the stream bottom at 3 to 6 foot intervals. Straw bales or commercial sorbents are placed on the upstream side. The barrier should be angled against the current for collection of product along the shore. Multiple snow fence barriers can be used to provide backup against potential losses from upstream barriers. Net or chicken wire barriers can be constructed for the same purpose. Figure 6.10 illustrates a typical snow fence barrier.

6.2.2 Recovery

Recovery efforts must be undertaken as soon as it is practical and safe to do so. Focus on rapid recovery of spilled materials is required to reduce and/or eliminate any potential dangers or hazards to the environment. Recovery methods generally include suction, mechanical removal and use of sorbent materials.

Suction

Direct suction includes the use of vacuum trucks or portable pumps. Large capacity wet service shop vacs may also be used if there is an available power source nearby. Suction screens may be required to prevent hose plugging by floating debris and to prevent pump damage. Care should be taken to reduce the uptake of water in order to minimize the amount of material, which requires disposal, and prevent mixing of oil and water.

Manual and Mechanical Recovery

Manual and mechanical recovery, discussed previously, is an effective option for the removal of small spills. Manual recovery using hand tools (shovels, buckets, rakes, cans) is also effective in removing spills from areas that are inaccessible to larger equipment. Though labor intensive and time consuming, manual recovery is often the only method of recovery available and in some cases is the preferred method as it causes the least amount of damage to an area.

Mechanical recovery using heavy equipment is an option typically reserved for larger spills. Details with respect to the use of heavy equipment are provided in local area emergency response plans.

Use of Sorbent Material

Sorbents are materials that soak up oil or other product. They are commonly used for final clean up and recovery of small amounts of product or to remove product in places that are inaccessible by other means of recovery. They are effective in recovering thin as well as thick layers of product; however large volumes of sorbent material may be required for thick deposits.

6.2.3 Initial Treatment

Initial treatments are designed to prevent the worst effects of a spill from “settling in” before the site can be sampled and more specific treatments completed. The purpose of initial treatment is to “buy time” to allow for more extensive sampling and analytical programs to be completed and to optimize treatment programs. Initial treatments are especially important on salt spills, as these initial remediation measures will greatly assist in deterring or slowing the soil “salinization” process. These treatments should proceed within 24 to 48 hours of the spill, before the spill dries out or receives much rain. If there has been considerable rain resulting in soft soils, chemicals may have to be hand broadcast or sprayed from offsite to prevent vehicles from rutting the soil.

6.2.3.1 Soils Handling

Soil handling must be minimized to the extent possible during wet soil conditions. Typically if there is a potential to create ruts that are greater than 3 inches deep, equipment should be kept off the soils and the spill should be accessed on foot and manually dealt with as explained in Section 6.2.2. However, under an emergency situation this may not always be feasible and it may be necessary to strip the topsoil ahead of the machinery when accessing the site to prevent compaction and destruction of the soil structure. In particular, soils must be handled carefully during excavations. The following measures should be taken when excavating soils:

- Strip the topsoil away from the area where you intend to excavate. Stockpile the topsoil away from the area where you plan to stockpile the spoil materials to avoid mixing the two together. When it is time to fill the hole, fill it first with the spoil materials, leaving a low “roach” or mound to account for settling. Respread the topsoil evenly on top of the mound being sure to completely cover the excavated area. It is particularly important during winter excavations to not replace the topsoil until the spoil pile has settled; and
- If the topsoil was contaminated during the spill, treat the topsoil according to the specifications listed below for brine and hydrocarbon spills.

6.2.3.2 Brine Spills

For the purposes of this document, brine is defined as:

- Water with over 10 000 mg/l (ppm) of total dissolved solids (TDS); **OR**
- Emulsions containing over 20% brine (emulsions with less than 20% brine can be treated as a hydrocarbon spill since the oil component will be sufficiently high that it is treatable as such); **OR**
- Previous spills have caused “bare spots” on the ground where vegetation either does not grow, grows slowly, or is characterized by plants that appear different from the surrounding area.

Information on the composition and general chemistry of fluids characterizing the field areas may be obtained from fluid sample analysis reports (CORE labs etc.), and should be reviewed by operators to determine the potential for a spill to result in impacts to soils or vegetation and the need to initiate immediate response.

Initial treatment for brine spills typically involves the addition of a calcium product to be applied and incorporated into the soil within the first 24 to 48 hours of clean up prior to flushing with fresh water. Operators should be aware of product suppliers in their areas, and have a listing posted or readily available at facilities. Accepted treatment chemicals include gypsum (calcium sulphate) and various formulations of calcium nitrate (liquid or granular fertilizer 15.5-0-0; Saline Soil Saver (SSS); and LCA-II). Generally calcium nitrates are preferred because of better solubility, but are prone to surface washes and may contaminate nearby water sources. Conversely, gypsum's low solubility characteristics make it unsuitable for most sites except wet areas. Other chemicals that have been used successfully on brine spills include calcium chloride (CaCl_2), and magnesium sulphate (MgSO_4). The following options are provided for initial remediation of brine-contaminated soils:

Option 1:

Site Conditions:

Ground is not frozen, and can be cultivated or soaked with water to incorporate the fertilizer. There are no water sources (shallow wells, sloughs, dugouts, ponds) near the spill site, and soils are average in terms of moisture levels (mesic sites). Note: Calcium nitrate should never be used in situations where site run-off could cause it to contaminate sources of drinking water for human, livestock, or wildlife consumption.

Application: 2.2 lbs. calcium nitrate per 10 yards².

Procedure:

Spread the fertilizer on the spill site (by hand if the soils are wet). Cultivate or water the soil well so that the fertilizer is incorporated. Soak the soil until puddles form. Let puddles soak in, and then soak the soil some more. Soak the soil as often as possible over the next few days.

Calcium nitrate/polymer/ flocculant formulations may also be used and are preferred when the ground is not frozen or over saturated so that the treatment soaks in immediately. These formulations are commercially available under the trade names Saline Soil Saver (SSS) and LCA-II.

Application: Dilute 0.8 US gallons of SSS or 0.5 US gallons of LCA-II with 6.2 US gallons of fresh water and apply 500 US and apply to 10 square yards. Be sure to protect the concentrate from freezing.

Option 2:

Site Conditions:

The ground is frozen and there will likely be runoff in the spring; **OR** the site is near water, thereby precluding the use of calcium nitrate.

Application: 11 lbs. gypsum per 10 yards².

Procedure:

Spread the granular gypsum on site (by hand if soils are wet). If the ground is not frozen, and cultivation of the soils is possible (the affected site is not a bog or muskeg) cultivate as soon as soils are dry enough to permit cultivation, then soak the soil until puddles form. Only soak the site once immediately prior to incorporation as the chloride salinity will aid in increasing the solubility of the gypsum.

6.2.3.3 Hydrocarbon Spills

Soil contaminated by hydrocarbons must be removed from the spill site and removed to the approved landfill (ECDC Environmental 435 888-4452).

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Appendix "A"

Initial Response and Notification Information

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Form 6.1

LIBERTY PIONEER ENERGY SOURCE, INC.
INFORMATION FOR NOTIFICATION PURPOSES

1. Date _____
2. Date _____ & Time of discovery or occurrence _____ am. pm.
3. Person who discovered spill _____
4. Telephone number of person who discovered spill. _____
5. Location of spill (detailed) ___ 1/4 ___ 1/4 ___ Sec. T ___ R ___
_____ County _____ State
6. Type of material spilled: ___ Oil ___ Saltwater ___ Oil & Saltwater
___ Toxic Fluid, ___ Other (Specify) _____
7. Source of spill (Check one):
___ Pipeline Failure ___ Tank Overflow
___ Treater Upset ___ Tank Rupture
___ Other ___ Unknown
8. Quantity of material spilled ___ bbls. ___ Unknown
9. Is the spill source stopped? ___ Yes ___ No. If not, what remaining maximum quantity could be spilled? ___ Bbls.
10. Present weather conditions. _____
11. Forecasted weather conditions: 24 hrs. _____ 48 hrs. _____ 72 hrs. _____
12. Actions underway to stop/control the spill.

Form 6.2

LIBERTY PIONEER ENERGY SOURCE, INC.
INTERNAL SPILL REPORT

Location (Well, Sec., Twn, Rng, County)	Date/Time Spill Discovered & Reported to Supervisor		Person Who Discovered and is Reporting Spill
Quantity Spilled	Oil	Produced Water	Other (Describe)
Quantity Recovered	Oil	Produced Water	Other (Describe)
What was the source and cause of the spill?			
How was the problem resolved?			
Was there a fire or explosion?			
What distance and direction did spill travel?			
Did the spill leave the well pad or tank battery?			
Did the spill reach any navigable water?			
Were regulatory or emergency officials notified? Be sure to complete the Internal Serious Incident/Injury Report.			
Complete this form; sign it , date it, and make a copy for your records.	Signature: Date:		

Form 6.3

LIBERTY PIONEER ENERGY SOURCE, INC.
INTERNAL REPORT-SERIOUS INCIDENT, INJURY OR ILLNESS

Date:	Time:	a.m./p.m.
Name	Location	Phone
Person in charge at the scene:		

INCIDENT DESCRIPTION

INJURIES/ILLNESS

PROPERTY DAMAGE/AREA AFFECTED

EMERGENCY ACTIONS TAKEN

DOCUMENTATION

Person Receiving Call	Date:	Time:
-----------------------	-------	-------

Persons Notified:	Date:	Time:
	Date:	Time:
	Date:	Time:



EMERGENCY CONTACT INFORMATION

Field personnel are to notify the LIBERTY PIONEER ENERGY SOURCE, INC. office and/or office personnel immediately upon locating a spill or an unnatural event. The LIBERTY PIONEER office will notify the required local, federal and state agencies.

Liberty Pioneer Energy Source, Inc.:

Daniel R. Gunnell (President and CEO)	801-224-4771 (office)
	801-224-1593 (mobile)
Kimball Hodges (Vice President)	801-224-4771 (office)
	801-787-5351 (mobile)
Richard Risien	281-807-4883 (mobile)
Don Hamilton (Emergency Response Coord.)	435-719-2018 (office)
	435-650-3866 (mobile)
	435-719-2018 (home)
Box Elder County General Emergency Dispatch	435-734-3814
Sheriff	
Police	
Fire	
Ambulance	
or	911
Brigham City Community Hospital	435-734-9471
Air Med (University of Utah Medical Center)	800 453-0120
Life Flight (LDS Hospital – Salt Lake City, Utah)	800 321-1911
Classic Helicopter Service (non-medical – Bountiful/Page)	801 295-5700
Utah Division of Oil, Gas and Mining:	
Ted Smith- Permitting, Petroleum Specialist	801-538-5303 (Office)
Dan Jarvis – Field Operations Manager	801-538-5338 (Office)
Brad Hill – Oil and Gas Permitting Manager	801-538-5315 (Office)
Box Elder County Road Department:	
Bill Gilson, Box Elder County Road	435-257-5450 (Office)
Environmental Protection Agency (Federal)	800 424-8802
Department of Environmental Quality (State)	801 536 4123
Nielson Construction:	435 687-2494 (Office)
John Nielson	435-749-2492 (mobile)
Jeremy Guymon	435-749-0721 (mobile)
Tom Bunnell	435-636-7216 (mobile)
Buys & Associates, Inc.	435-719-2018 (Office)
Don Hamilton	435-650-3886 (Mobile)
Doug Henderer	303-781-8211 (Office)
Enviro Care (Katie Nesie)	800-820-9058 (Office)
HMHTTC Response Inc. (Jeff Jacobson)	973-770-6900 (Office)
ECDC Environmental	435 888-4452 (Office)

HEALTH EFFECTS OF HYDROGEN SULFIDE*

These guidelines are supplied for information purposes only. Personnel not trained to handle hydrogen sulfide leaks should evacuate the area and call for assistance.

CONCENTRATION
PERCENT

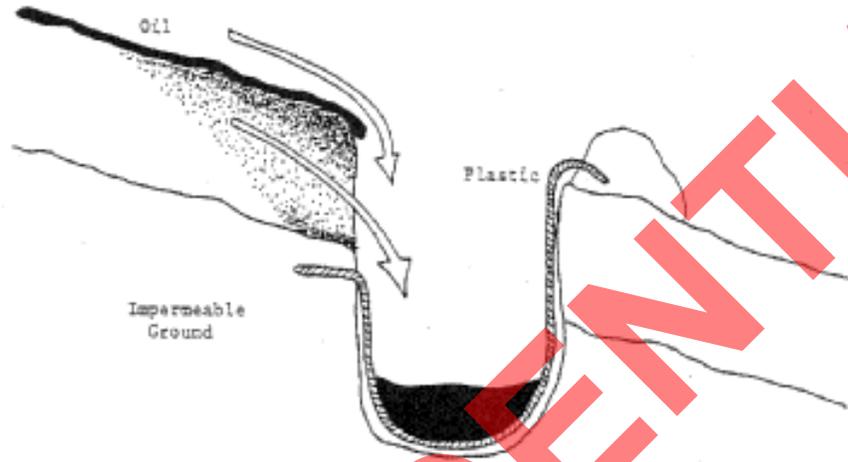
(%)	PPM	PHYSICAL EFFECT
0.000013	0.13	OBVIOUS AND UNPLEASANT ODOR.
0.001	10	SAFE FOR 8 HOURS EXPOSURE.
0.01	100	IMMEDIATELY DANGEROUS TO LIFE OR HEALTH. KILLS SMELL IN 3 TO 15 MINUTES; MAY STING THROAT. ALTERED RESPIRATION, PAIN IN EYES, DROWSINESS AFTER 15-20 MINUTES.
0.02	200	KILLS SMELL RAPIDLY; BURNS EYES AND THROAT.
0.05	500	DIZZINESS; UNCONSCIOUS AFTER SHORT EXPOSURE; NEEDS PROMPT ARTIFICIAL RESPIRATION.
0.07	700	UNCONSCIOUS QUICKLY; DEATH WILL RESULT IF NOT RESCUED PROMPTLY.
0.10	1000	UNCONSCIOUS AT ONCE; FOLLOWED BY DEATH WITHIN MINUTES.

* AMERICAN PETROLEUM INSTITUTE

APPENDIX "A"

Figures

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Figure 6.1
Detail of Interceptor Trench

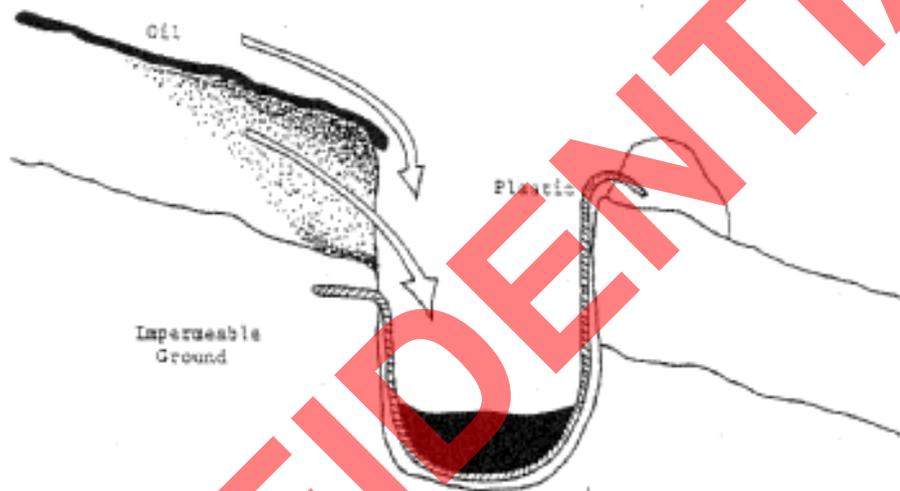


Figure 6.2
Trenches to Intercept Overland/Subsurface Flow

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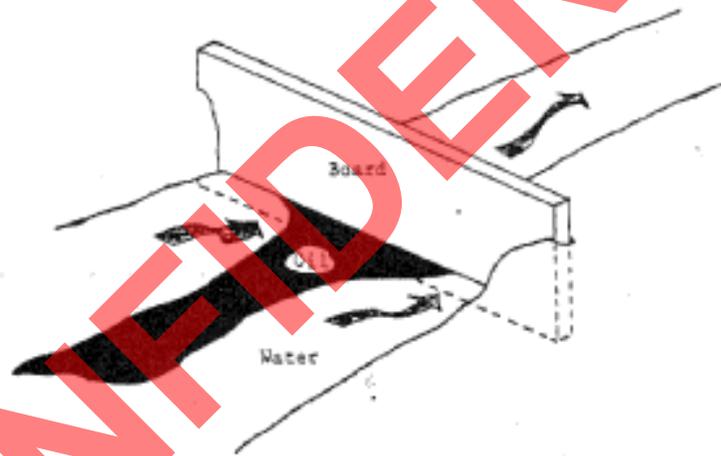
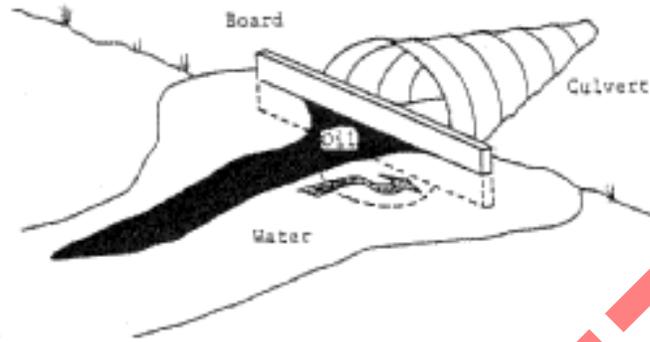


Figure 6.3
Culvert and Earth Dam Weirs

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Figure 6.4
Water Bypass (Underflow) Dam

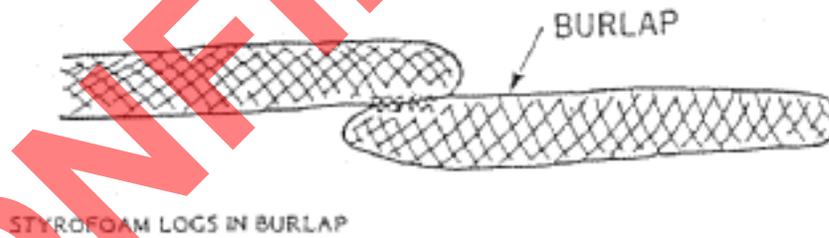
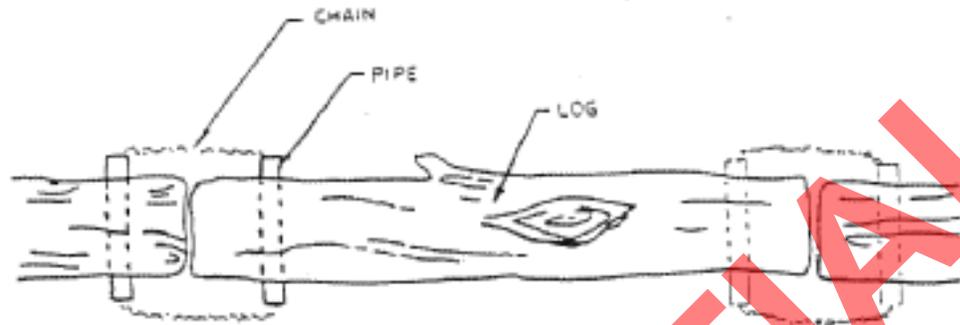
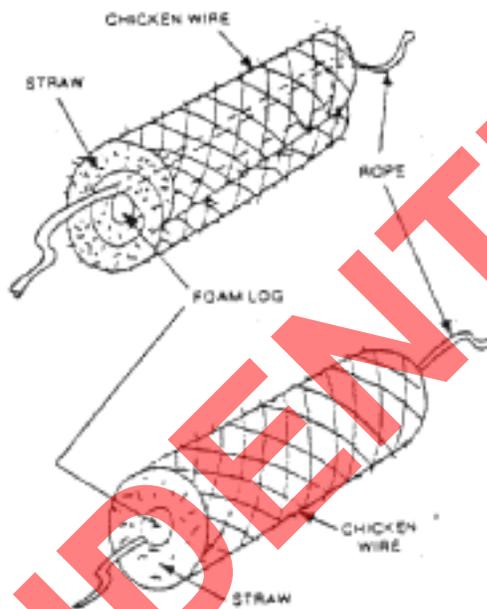


Figure 6.5
Various Means of Connecting Wood or Styrofoam Booms

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Figure 6.6
Jellyroll and Sausage Roll Improvised Sorbent Barriers

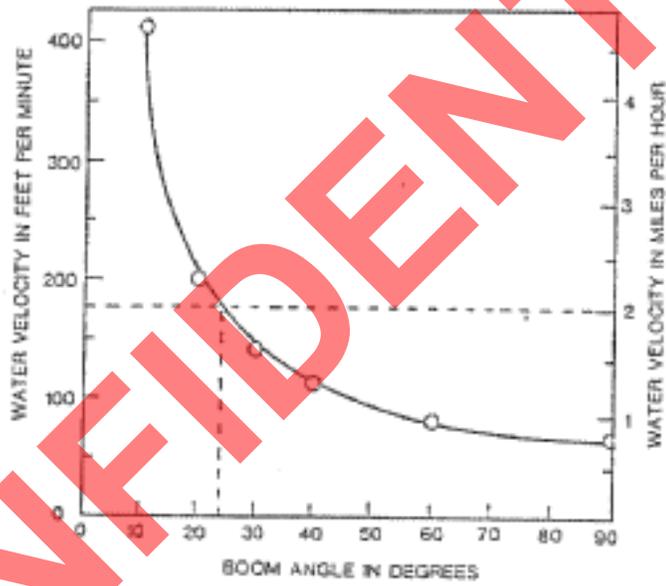
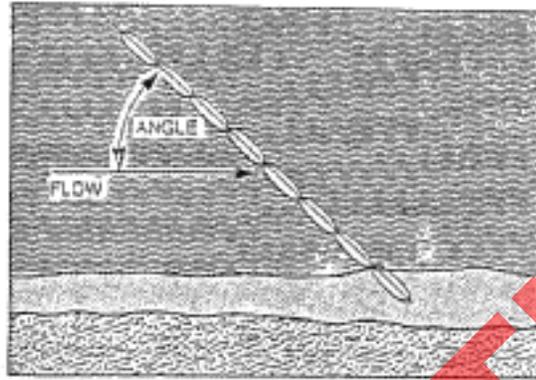


Figure 6.7
Boom Angle Deployment vs. Water Velocity

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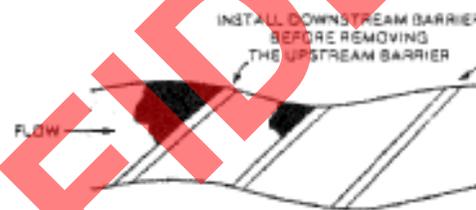
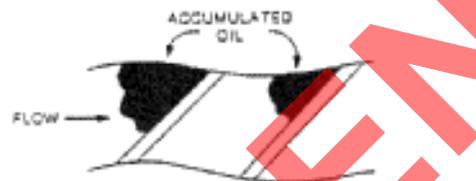
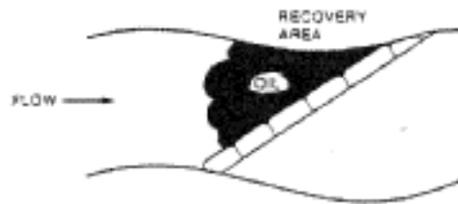


Figure 6.8
Multiple Angled Booms

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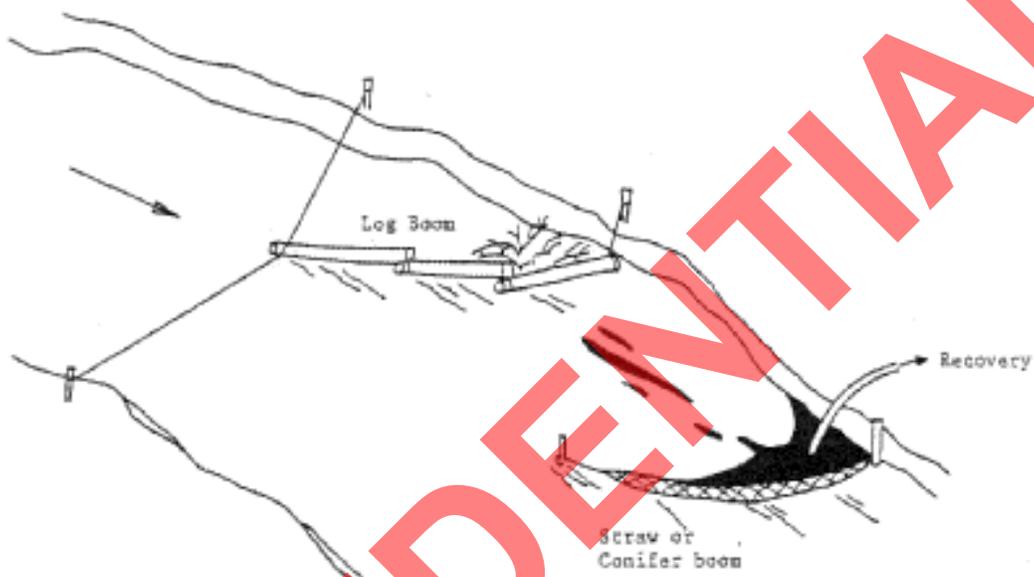


Figure 6.9
Possible Schemes for Boom Attachment and Deployment

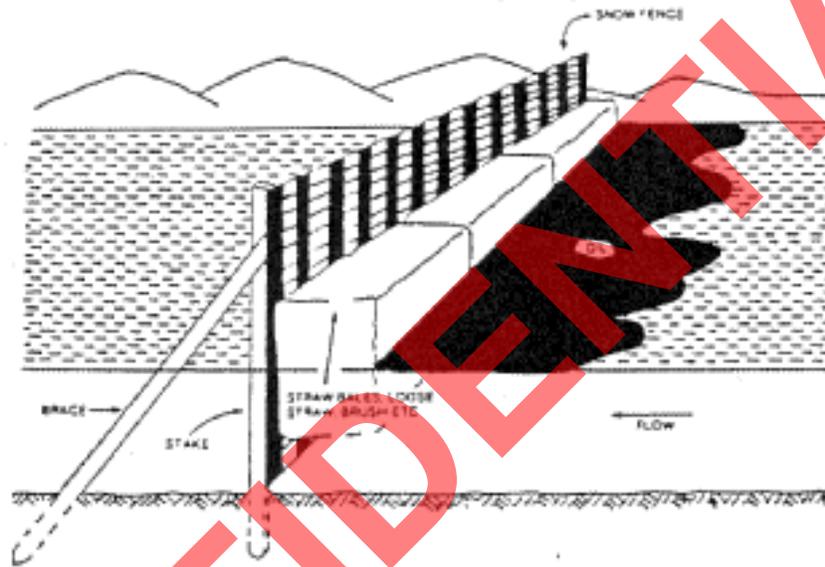


Figure 6.10
Snowfence and Sorbent Barrier

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Well Name	LIBERTY PIONEER ENERGY SOURCE, INC Chesapeake 28-			
String	Cond	Surf	Prod	
Casing Size(")	16.000	9.625	4.500	
Setting Depth (TVD)	90	200	1500	
Previous Shoe Setting Depth (TVD)	0	90	200	
Max Mud Weight (ppg)	9.5	9.8	10.5	
BOPE Proposed (psi)	0	0	3000	
Casing Internal Yield (psi)	1000	3520	4790	
Operators Max Anticipated Pressure (psi)	780		10.0	

Calculations	Cond String	16.000	"
Max BHP (psi)	.052*Setting Depth*MW=	44	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	33	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	24	NO OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	24	NO
Required Casing/BOPE Test Pressure=		0	psi
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi *Assumes 1psi/ft frac gradient

Calculations	Surf String	9.625	"
Max BHP (psi)	.052*Setting Depth*MW=	102	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	78	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	58	NO OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	78	YES
Required Casing/BOPE Test Pressure=		200	psi
*Max Pressure Allowed @ Previous Casing Shoe=		90	psi *Assumes 1psi/ft frac gradient

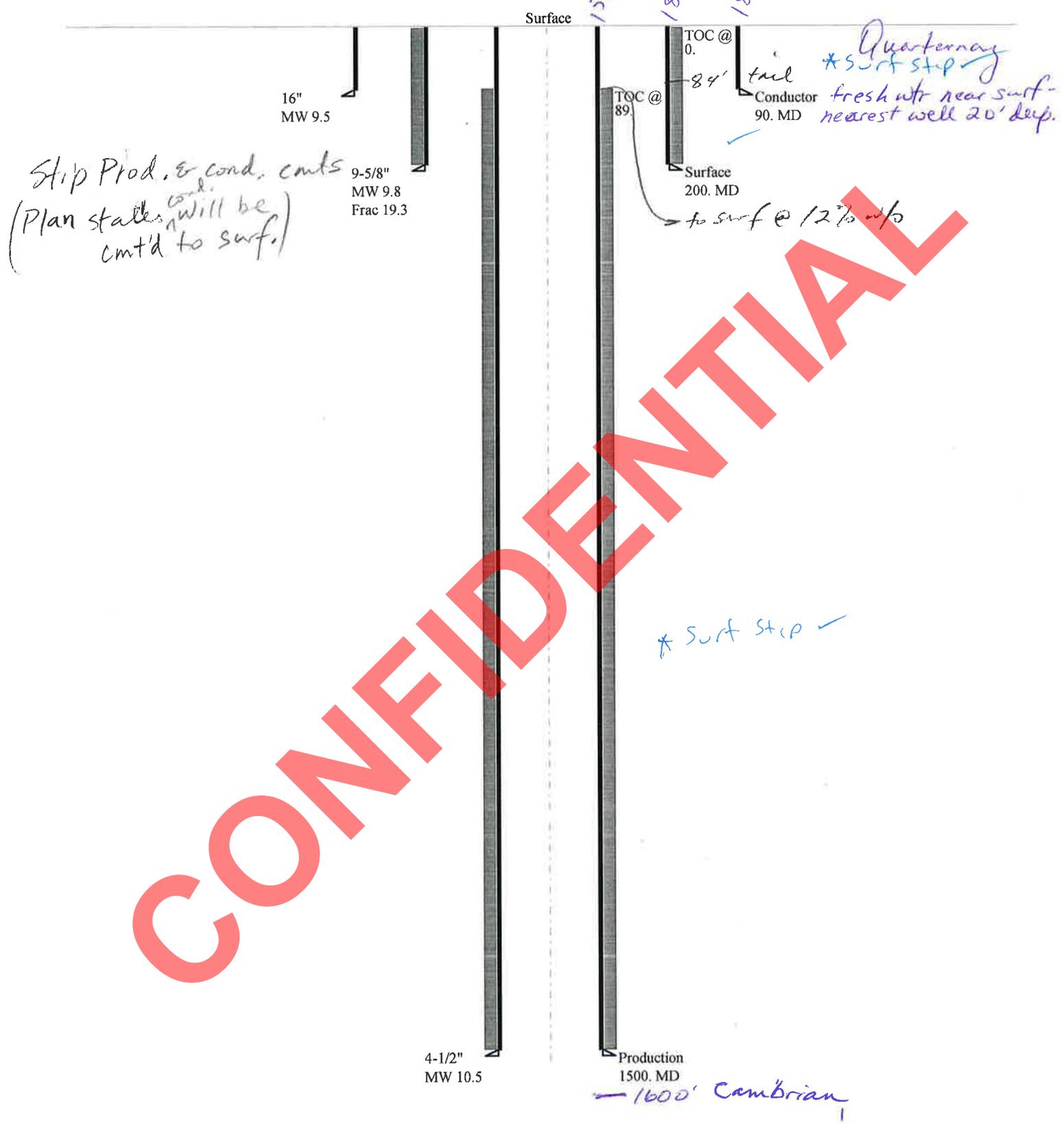
Calculations	Prod String	4.500	"
Max BHP (psi)	.052*Setting Depth*MW=	819	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	639	YES
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	489	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	533	NO Reasonable
Required Casing/BOPE Test Pressure=		1500	psi
*Max Pressure Allowed @ Previous Casing Shoe=		200	psi *Assumes 1psi/ft frac gradient

Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO
Required Casing/BOPE Test Pressure=			psi

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43003500030000 Chesapeake 28-1

Casing Schematic



Well name:	43003500030000 Chesapeake 28-1		
Operator:	LIBERTY PIONEER ENERGY SOURCE, INC		
String type:	Surface	Project ID:	43-003-50003
Location:	BOX ELDER COUNTY		

Design parameters:

Collapse

Mud weight: 9.800 ppg
 Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? No
 Surface temperature: 74 °F
 Bottom hole temperature: 77 °F
 Temperature gradient: 1.40 °F/100ft
 Minimum section length: 100 ft

Cement top: Surface

Burst

Max anticipated surface pressure: 176 psi
 Internal gradient: 0.120 psi/ft
 Calculated BHP 200 psi

No backup mud specified.

Tension:

8 Round STC: 1.80 (J)
 8 Round LTC: 1.70 (J)
 Buttress: 1.60 (J)
 Premium: 1.50 (J)
 Body yield: 1.50 (B)

Tension is based on air weight.
 Neutral point: 171 ft

Non-directional string.

Re subsequent strings:

Next setting depth: 1,500 ft
 Next mud weight: 10,500 ppg
 Next setting BHP: 818 psi
 Fracture mud wt: 19,250 ppg
 Fracture depth: 200 ft
 Injection pressure: 200 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	200	9.625	36.00	J-55	LT&C	200	200	8.796	1634
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	102	2020	19.859	200	3520	17.60	7.2	453	62.98 J

Prepared by: Helen Sadik-Macdonald
 Div of Oil, Gas & Mining

Phone: 801 538-5357
 FAX: 801-359-3940

Date: March 28, 2011
 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 200 ft, a mud weight of 9.8 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	43003500030000 Chesapeake 28-1		
Operator:	LIBERTY PIONEER ENERGY SOURCE, INC		
String type:	Production	Project ID:	43-003-50003
Location:	BOX ELDER COUNTY		

Design parameters:

Collapse

Mud weight: 10.500 ppg
 Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 638 psi
 Internal gradient: 0.120 psi/ft
 Calculated BHP: 818 psi

No backup mud specified.

Minimum design factors:

Collapse:

Design factor: 1.125

Burst:

Design factor: 1.00

Tension:

8 Round STC: 1.80 (J)
 8 Round LTC: 1.80 (J)
 Buttress: 1.60 (J)
 Premium: 1.50 (J)
 Body yield: 1.60 (B)

Tension is based on air weight.
 Neutral point: 1,265 ft

Environment:

H2S considered? No
 Surface temperature: 74 °F
 Bottom hole temperature: 95 °F
 Temperature gradient: 1.40 °F/100ft
 Minimum section length: 100 ft

Cement top: 89 ft

Non-directional string.

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	1500	4.5	10.50	J-55	ST&C	1500	1500	3.927	3376
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	818	4010	4.901	818	4790	5.85	15.7	132	8.38 J

Prepared by: Helen Sadik-Macdonald
 Div of Oil, Gas & Mining

Phone: 801-538-5357
 FAX: 801-359-3940

Date: March 28, 2011
 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 1500 ft, a mud weight of 10.5 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

ON-SITE PREDRILL EVALUATION

Utah Division of Oil, Gas and Mining

Operator LIBERTY PIONEER ENERGY SOURCE, INC
Well Name Chesapeake 28-1
API Number 43003500030000 **APD No** 3360 **Field/Unit** WILDCAT
Location: 1/4,1/4 NENE **Sec** 28 **Tw** 9.0N **Rng** 3.0W 880 FNL 563 FEL
GPS Coord (UTM) 401626 4593544 **Surface Owner** Chesapeake Duck Club

Participants

Ted Smith, Clint Dworshak-DOGM, Scott Lyons, Kevin Hamilton, Brent Slater-Box Elder County, Kimball Hodges, Gary Frech, Don Hamilton-Liberty Pioneer, Thayn Gephart, Nathan Gephart-Chesapeake Duck Club Landowner

Regional/Local Setting & Topography

Location is 5.31 miles south of the Highway 83 on 6800 west in the Bear River Valley. Location is 730 feet west of 6800 West road. Location is on a flat delta marshland area to the southwest from Corinne City located in the Bear River Valley, 0.15 mile east East Bay area of Homestead Bay along the northeast corner of the Great Salt Lake. The Bear River drainage is approximately 1.0 mile to the southeast of proposed location.

Surface Use Plan

Current Surface Use

Wildlife Habitat
Recreational

New Road Miles

Well Pad

Width 300 Length 300

Src Const Material

Offsite

Surface Formation

ALLU

Ancillary Facilities

Location material will be brought in to make pad and upgrade access road from Little Mountain gravel pit or Brigham City gravel pit.

Waste Management Plan Adequate?

Environmental Parameters

Affected Floodplains and/or Wetlands Y

This well location might fall within rule R649-3-33 regulations

Flora / Fauna

Needle, Tread, Cheat, Goat grass, and Greasewood
Many types of waterfowl, along with coyote, skunk, rabbit

Soil Type and Characteristics

Quaternary Alluvium

Erosion Issues Y

This well location might fall within rule R649-3-33 regulations

Sedimentation Issues Y

This well location might fall within rule R649-3-33 regulations

Site Stability Issues Y

Location material will need to be brought in from local gravel pits to make the pad

Drainage Diverson Required? Y

This well location might fall within rule R649-3-33 regulations

Berm Required? Y

This well location might fall within rule R649-3-33 regulations

Erosion Sedimentation Control Required? Y

This well location might fall within rule R649-3-33 regulations

Paleo Survey Run? N Paleo Potential Observed? N Cultural Survey Run? N Cultural Resources? N

Reserve Pit

Site-Specific Factors

Site Ranking

Distance to Groundwater (feet)		20	
Distance to Surface Water (feet)		20	
Dist. Nearest Municipal Well (ft)	1320 to 5280	5	
Distance to Other Wells (feet)	>1320	0	
Native Soil Type	Mod permeability	10	
Fluid Type	Air/mist	0	
Drill Cuttings	Normal Rock	0	
Annual Precipitation (inches)	10 to 20	5	
Affected Populations			
Presence Nearby Utility Conduits	Present	15	
	Final Score	75	2 Sensitivity Level

Characteristics / Requirements

Drill Contractor should use a closed system with total containment required. Surface ground water on location, very close to the Great Salt Lake and the Bear River National Migratory Bird Refuge.

Closed Loop Mud Required? Y Liner Required? Liner Thickness Pit Underlayment Required?

Other Observations / Comments

Liberty Pioneer will use a closed loop mud system where total containment is required for this location. Fresh water used for drilling will be obtained from the Chesapeake Duck Club. Contractor will be using trucks to haul drilling fluids from location for disposal. No survey pad plat submitted with the APD. A survey pad plat will need to be submitted before APD approval is issued. A closed loop system will need to be used because the location has surface ground water, The Great Slat Lake, and the Bear River Migratory Bird Refuge are very close to proposed location. This location could fall under DOGM Rule 649-3-33 altitude at the location is 4217 feet. The rig crew housing has not been determined at time of presite. Brigham City is approximately 30 minutes from location and would be the closest town to house the crew. If the drill crew is housed on location a waste management plan needs to be submitted. There is a Corinne City culinary water line buried 0.15 east of location. There is power cables going to the Chesapeake Duck Club to the southeast. The Chesapeake Duck Club head quarters and facility is located 0.25 mile southeast of proposed location. There is approximately 730 feet of access road that will need to be upgraded to proposed location. If gas is discovered the operator plans on upgrading the exisiting Chesapeake Duck Club maintenance road. Along with pipelines needing to be constructed from the well site to a county road for transportation to a gathering station.

Ted Smith
Evaluator

1/31/2011
Date / Time

CONFIDENTIAL

Application for Permit to Drill Statement of Basis

4/7/2011

Utah Division of Oil, Gas and Mining

Page 1

APD No	API WellNo	Status	Well Type	Surf Owner	CBM
3360	43003500030000	LOCKED	GW	P	No
Operator	LIBERTY PIONEER ENERGY SOURCE, INC		Surface Owner-APD	Chesapeake Duck Club	
Well Name	Chesapeake 28-1		Unit		
Field	WILDCAT		Type of Work	DRILL	
Location	NENE 28 9N 3W S 880 FNL 563 FEL		GPS Coord (UTM)	401503E	4593800N

Geologic Statement of Basis

Liberty Pioneer proposes to set 150 feet of surface casing which will be cemented to surface. A search of the Division of Water Rights database indicates that the nearest water well is located over 2 1/2 miles northeast of the proposed location. This well produces from a depth of 20 feet. The surface material at the proposed wellsite is made up of unconsolidated fluvial-deltaic sediments which were deposited as a part of the Bear River Delta system. It is anticipated that these unconsolidated sediments continue to a depth approximately equal to the proposed total depth. At depth the well may transition into Lake Bonneville sediments. The water table in this area is expected to be at or near the ground surface. Surface water can be found a short distance from the proposed well pad.

It is recommended that in order to protect near surface ground water that the surface casing be extended to just above the projected productive interval and that the production casing also be cemented to surface. I also recommend that a spill control plan be submitted to DOGM and that spill control equipment/materials be located on site during drilling operations.

Brad Hill
APD Evaluator

2/9/2011
Date / Time

Surface Statement of Basis

A presite was conducted at 12:30 P.M. on January 31, 2011. This proposed location is 5 miles southwest of the town of Corinne. At time of presite no county road use permit has been granted. If production of this well occurs the county will require the operator to apply to rezone this location. At time of presite a surface use agreement is in place with the landowner Chesapeake Duck Club. A site specific plat needs to be submitted to show location of access road onto pad.

General topography in this part of the Bear River Valley drains to the south in to the Great Salt Lake suitable for waterfowl wildlife habitat. This area is easily accessed from the north. One house is 0.25 miles to the north of the proposed pad. There is one water well 0.25 mile to the southeast that makes gas along with water. Water rights in this section are all owned by the surface owner.

There have been 2 oil and gas wells drilled in this section 27 located 0.30 miles to the southeast API 4300330022 and 4300330023 both have a status of PA. A closed loop system will need to be used because the location has surface ground water, The Great Slat Lake, and the Bear River Migratory Bird Refuge are very close to proposed location.

Ted Smith
Onsite Evaluator

1/31/2011
Date / Time

Conditions of Approval / Application for Permit to Drill

Category	Condition
Pits	A closed loop mud circulation system is required for this location.

**Application for Permit to Drill
Statement of Basis**

4/7/2011

Utah Division of Oil, Gas and Mining

Page 2

Surface

The well site shall be bermed to prevent fluids from leaving the pad.

CONFIDENTIAL

WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 1/4/2011

API NO. ASSIGNED: 43003500030000

WELL NAME: Chesapeake 28-1

OPERATOR: LIBERTY PIONEER ENERGY SOURCE, INC (N2855)

PHONE NUMBER: 435 719-2018

CONTACT: Don Hamilton

PROPOSED LOCATION: NENE 28 090N 030W

Permit Tech Review:

SURFACE: 0880 FNL 0563 FEL

Engineering Review:

BOTTOM: 0880 FNL 0563 FEL

Geology Review:

COUNTY: BOX ELDER

LATITUDE: 41.49168

LONGITUDE: -112.17993

UTM SURF EASTINGS: 401503.00

NORTHINGS: 4593800.00

FIELD NAME: WILDCAT

LEASE TYPE: 4 - Fee

LEASE NUMBER: Patented

PROPOSED PRODUCING FORMATION(S): CAMBRIAN

SURFACE OWNER: 4 - Fee

COALBED METHANE: NO

RECEIVED AND/OR REVIEWED:

- PLAT
- Bond: STATE/FEE - RLB 0012097
- Potash
- Oil Shale 190-5
- Oil Shale 190-3
- Oil Shale 190-13
- Water Permit: 29-4162
- RDCC Review: 2011-04-06 00:00:00.0
- Fee Surface Agreement
- Intent to Commingle
- Commingling Approved

LOCATION AND SITING:

- R649-2-3.
- Unit:
- R649-3-2. General
- R649-3-3. Exception
- Drilling Unit
- Board Cause No: R649-3-3
- Effective Date:
- Siting:
- R649-3-11. Directional Drill

Comments: Presite Completed

Stipulations:

- 1 - Exception Location - bhill
- 5 - Statement of Basis - bhill
- 8 - Cement to Surface -- 2 strings - ddoucet
- 21 - RDCC - dmason
- 23 - Spacing - dmason



GARY R. HERBERT
Governor

GREGORY S. BELL
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

Permit To Drill

Well Name: Chesapeake 28-1
API Well Number: 43003500030000
Lease Number: Patented
Surface Owner: FEE (PRIVATE)
Approval Date: 4/7/2011

Issued to:

LIBERTY PIONEER ENERGY SOURCE, INC, 1411 East 840 North, Orem, UT 84097

Authority:

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of R649-3-3. The expected producing formation or pool is the CAMBRIAN Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

Duration:

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

Exception Location:

Appropriate information has been submitted to DOGM and administrative approval of the requested exception location is hereby granted.

General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

Conditions of Approval:

The Application for Permit to Drill has been forwarded to the Resource Development Coordinating Committee for review of this action. The operator will be required to comply with any applicable recommendations resulting from this review. (See attached)

This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Cement volumes for the 16", 9 5/8" and 4 1/2" casing strings shall be determined from actual hole diameters in order to place cement from the pipe setting depths back to the surface.

Additional Approvals:

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan – contact Dustin Doucet
- Significant plug back of the well – contact Dustin Doucet
- Plug and abandonment of the well – contact Dustin Doucet

Notification Requirements:

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well – contact Carol Daniels
OR
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at <http://oilgas.ogm.utah.gov>
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing – contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program – contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well – contact Dan Jarvis

Contact Information:

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office
801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office
801-231-8956 - after office hours

Reporting Requirements:

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) – due within 5 days of spudding the well
- Monthly Status Report (Form 9) – due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) – due prior to implementation
- Written Notice of Emergency Changes (Form 9) – due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) – due prior to implementation
- Report of Water Encountered (Form 7) – due within 30 days after completion
- Well Completion Report (Form 8) – due within 30 days after completion or plugging

Approved By:

Approved by:

A handwritten signature in black ink, appearing to read "J. Rogers", written in a cursive style.

For John Rogers
Associate Director, Oil & Gas

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: Patented
	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: Chesapeake 28-1
2. NAME OF OPERATOR: LIBERTY PIONEER ENERGY SOURCE, INC	9. API NUMBER: 43003500030000
3. ADDRESS OF OPERATOR: 1411 East 840 North , Orem, UT, 84097	PHONE NUMBER: 801 224-4771 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0880 FNL 0563 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENE Section: 28 Township: 09.0N Range: 03.0W Meridian: S	9. FIELD and POOL or WILDCAT: WILDCAT
	COUNTY: BOX ELDER
	STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

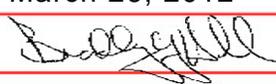
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 5/15/2012	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input checked="" type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Liberty-Pioneer Energy Source, Inc. requests a one year drilling permit extension for the referenced well. This is the first extension that has been requested.

Approved by the Utah Division of Oil, Gas and Mining

Date: March 26, 2012

By: 

NAME (PLEASE PRINT) Don Hamilton	PHONE NUMBER 435 719-2018	TITLE Permitting Agent (Buys & Associates, Inc)
SIGNATURE N/A	DATE 3/18/2012	



The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43003500030000

API: 43003500030000

Well Name: Chesapeake 28-1

Location: 0880 FNL 0563 FEL QTR NENE SEC 28 TWNP 090N RNG 030W MER S

Company Permit Issued to: LIBERTY PIONEER ENERGY SOURCE, INC

Date Original Permit Issued: 4/7/2011

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- If located on private land, has the ownership changed, if so, has the surface agreement been updated? Yes No

- Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes No

- Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes No

- Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location? Yes No

- Has the approved source of water for drilling changed? Yes No

- Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes No

- Is bonding still in place, which covers this proposed well? Yes No

Signature: Don Hamilton

Date: 3/18/2012

Title: Permitting Agent (Buys & Associates, Inc) Representing: LIBERTY PIONEER ENERGY SOURCE, INC

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: Patented
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	STATE: UTAH

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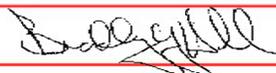
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 9/15/2013	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
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	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input checked="" type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Liberty Pioneer Energy Source, Inc. respectfully requests a one year extension of the previously approved drilling permit. This is the second extension that has been requested.

**Approved by the
Utah Division of
Oil, Gas and Mining**

Date: April 23, 2013

By: 

NAME (PLEASE PRINT) Don Hamilton	PHONE NUMBER 435 719-2018	TITLE Permitting Agent (Buys & Associates, Inc)
SIGNATURE N/A	DATE 4/23/2013	



The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43003500030000

API: 43003500030000

Well Name: Chesapeake 28-1

Location: 0880 FNL 0563 FEL QTR NENE SEC 28 TWNP 090N RNG 030W MER S

Company Permit Issued to: LIBERTY PIONEER ENERGY SOURCE, INC

Date Original Permit Issued: 4/7/2011

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- Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes No
- Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location? Yes No
- Has the approved source of water for drilling changed? Yes No
- Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes No
- Is bonding still in place, which covers this proposed well? Yes No

Signature: Don Hamilton

Date: 4/23/2013

Title: Permitting Agent (Buys & Associates, Inc) Representing: LIBERTY PIONEER ENERGY SOURCE, INC