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INJECTION WELL PLUGGING PLAN 40 CFR 146.92(b)

Bluebonnet Sequestration Project

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1.0 Facility Information

Facility name: Bluebonnet Sequestration Project
Bluebonnet CCS 1 Well

Facility contact: [REDACTED], Project Manager
5 Greenway Plaza Houston, TX 77046
[REDACTED]

Well location: Winnie, Chambers County, Texas
[REDACTED] (North American Datum 1927)

The Bluebonnet Sequestration Hub, LLC will conduct injection well plugging and abandonment according to the procedures below.

Upon the end of life for the Bluebonnet CCS 1, this injection well will be plugged and abandoned relevant to the requirements of Environmental Protection Agency (EPA) document 40 CFR Subpart H – Criteria and Standards Applicable to Class VI Wells. The plugging procedure and materials will be designed to prevent any unwanted fluid movement, resist the corrosive aspects of carbon dioxide (CO₂) with water mixtures, and protect any underground sources of drinking water (USDWs).

2.0 Planned Tests or Measures to Determine Bottom-Hole Reservoir Pressure

1. Bottomhole pressure measurements will be taken using the installed downhole gauges. In case the gauges are not functioning properly, the operator will run pressure gauges during the P&A process of the well.

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2. After injection has ceased, the well will be flushed with a kill fluid. A minimum of [REDACTED] tubing volumes will be injected without exceeding the fracture pressure. The injection packer and the tubing will be removed.
3. An active pulsed neutron log and/or casing inspection tool will be run and the well will be pressure tested to ensure integrity both inside and outside the casing prior to plugging.
4. If a loss of mechanical integrity is discovered, the well will be repaired before proceeding further with the plugging operations.
5. All casing in this well will have been cemented to the surface at the time of construction and will not be retrievable at abandonment.
6. [REDACTED]
7. Heavy gel mud [REDACTED] ppg will be left between cement plugs.
8. All the casing strings will be cut off at least [REDACTED] ft below the surface and plow line.
9. A blanking plate with the required permit information will be welded on top of the cutoff casing.

Any necessary revisions to the well plugging plan to address any new information collected during logging, testing, and completion of the well will be made after these activities have been completed. The final plugging plan will be submitted to the Underground Injection Control (UIC) Program Director.

3.0 Planned External Mechanical Integrity Test(s)

The Bluebonnet Sequestration Hub, LLC will conduct at least one of the tests listed below to verify external mechanical integrity prior to plugging the injection well as required by 40 CFR 146.92(a).

- a) Pulse neutron log.
- b) Noise log
- c) DTS (Distributed Temperature Sensing) /DAS (Distributed Acoustic Sensing) survey.
- d) Temperature log

4.0 Information on Plugs

The Bluebonnet Sequestration Hub, LLC will use the materials and methods noted in Table PLG-1 to plug the injection well. The volume and depth of the plug or plugs will depend on the final geology and downhole conditions of the well as assessed during construction. The cement(s) formulated for plugging will be compatible with the carbon dioxide stream. The cement formulation and required certification documents will be submitted to the agency with the well

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plugging plan. The owner or operator will report the wet density and will retain duplicate samples of the cement used for each plug.

Table PLG-1—Information on Cement Plugs

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx

- All plug depths will be adjusted after the well is drilled and completed.
- The plugging procedure will be updated as required by EPA and Texas regulators.
- Formation tops will be adjusted after running open hole electric logs.

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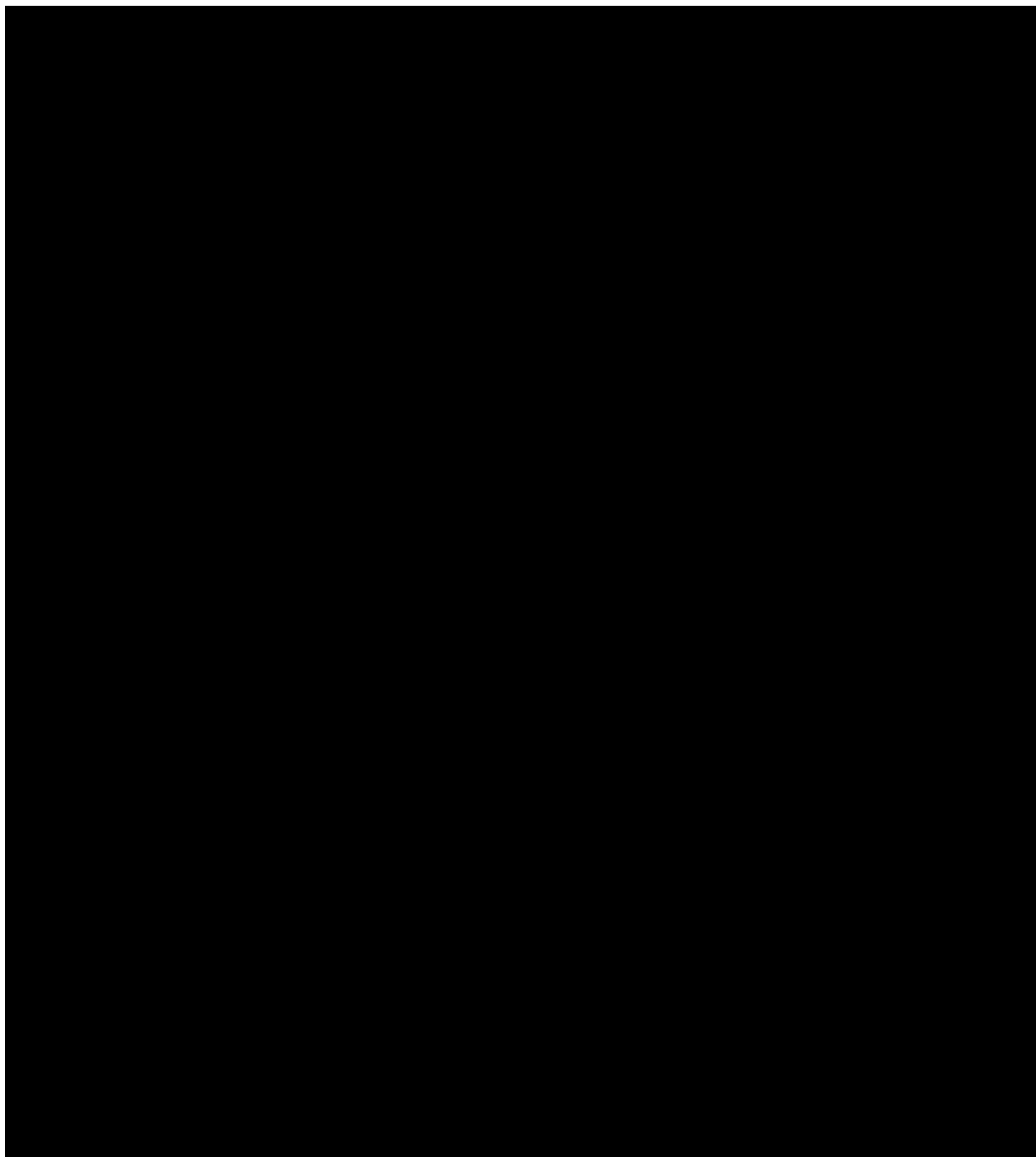


Figure PLG-1—Bluebonnet CCS 1 Injection Well Plugging Schematic

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United States Environmental Protection Agency Washington, DC 20460		OMB No. 2040-0062	Approval Expires 11/30/2014	
EPA				
PLUGGING AND ABANDONMENT PLAN				
Name and Address of Facility Morgan County Class VI UIC Well #1 (cased well completion, 1,500 ft lateral) [address not yet available]		Name and Address of Owner/Operator FutureGen Alliance, Inc. 73 Central Park Plaza East, Jacksonville, IL 62650		
Locate Well and Outline Unit on Section Plat - 640 Acres <div style="text-align: center;"> </div>		State Illinois	County Morgan	
		Permit Number not yet issued		
Surface Location Descriptor SE 1/4 of SE 1/4 of SW 1/4 of SE 1/4 of Section 26 Township 16N Range 9W				
Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location <input type="text"/> ft. from (N/S) <input type="text"/> Line of quarter section and <input type="text"/> ft. from (E/W) <input type="text"/> Line of quarter section.				
TYPE OF AUTHORIZATION <input checked="" type="checkbox"/> Individual Permit <input type="checkbox"/> Area Permit <input type="checkbox"/> Rule Number of Wells <input type="text"/> 1		WELL ACTIVITY <input type="checkbox"/> CLASS I <input type="checkbox"/> CLASS II <input type="checkbox"/> Brine Disposal <input type="checkbox"/> Enhanced Recovery <input type="checkbox"/> Hydrocarbon Storage <input type="checkbox"/> CLASS III		
Lease Name <input type="text"/>		Well Number <input type="text"/>		
CASING AND TUBING RECORD AFTER PLUGGING				
SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
24"	140.0	140'	140'	30"
16"	84.0	570'	570'	20"
10 3/4"	51.0	3,150'	3,150'	14 3/4"
7"	29.0	6,004'	6,004'	9 1/2"
METHOD OF EMPLACEMENT OF CEMENT PLUGS				
<input checked="" type="checkbox"/> The Balance Method <input type="checkbox"/> The Dump Bailer Method <input type="checkbox"/> The Two-Plug Method <input type="checkbox"/> Other				
CEMENTING TO PLUG AND ABANDON DATA:		PLUG #1	PLUG #2	PLUG #3
Size of Hole or Pipe in which Plug Will Be Placed (inches)	7"	7"	7"	7"
Depth to Bottom of Tubing or Drill Pipe (ft)	6,004	3,900	3,100	1,800
Sacks of Cement To Be Used (each plug)	451	149	0	53
Slurry Volume To Be Pumped (cu. ft.)	505	167	271	63
Calculated Top of Plug (ft.)	3,900	3,100	1,800	1,500
Measured Top of Plug (if tagged ft.)	3,900	3,100	1,800	1,500
Slurry Wt. (Lb./Gal.)	15.82	15.82	8.6	15.6
Type Cement or Other Material (Class III)	EverCrete	EverCrete	6% Gel	Class A
LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)				
From	To	From	To	
(7" perforated casing) 3,950 ft MD	6,004 ft MD			
Estimated Cost to Plug Wells				
Plug #1 Set through a cement retainer set at 3,900 ft MD \$600,000.00				
Certification				
I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)				
Name and Official Title (Please type or print) Kenneth K. Humphreys, Chief Executive Officer		Signature 		Date Signed 03/03/2014

EPA Form 7520-14 (Rev. 12-11)

Figure PLG-2—Sample EPA Plugging and Abandonment Form

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5.0 Narrative Description of Plugging Procedures for Injection Well

5.1 Notifications, Permits, and Inspections

In compliance with 40 CFR 146.92(c), the Bluebonnet Sequestration Hub, LLC will notify the regulatory agency at least 60 days before plugging the well and provide updated Injection Well Plugging Plan, if applicable.

5.2 Plugging Procedures

1. Move in rig onto the Bluebonnet CCS 1 site and rig up (RU). All CO₂ pipelines will be marked and noted with the rig supervisor prior to move in.
2. Conduct and document a safety meeting.
3. Record the bottomhole pressure (BHP) from the downhole gauge, perform DST survey through fiber optic installed alongside the casing, and calculate kill fluid density.
4. Test the pump and line to [REDACTED] psi. Fill the tubing and flush the well at least three times the tubing volume with kill fluid with the density determined using the bottomhole pressure measurement. It may be necessary to bleed off occasionally to remove all air from the system. Monitor the tubing pressure and annular pressure continuously.
5. Test casing annulus to [REDACTED] psi and monitor it for [REDACTED] minutes. If the pressure decreases more than [REDACTED] % in [REDACTED] minutes, bleed the pressure, check surface lines and connections, and repeat the test. Then, release the pressure.

Note: [REDACTED]

6. If both the casing and tubing are dead, then nipple up the blowout preventers (BOPs).
7. Pull out of the hole and lay down tubing, packer, cable, and sensors.

Contingency: [REDACTED]

8. Pick up the work string and trip in hole (TIH) with the bit to condition the wellbore.

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[REDACTED]

[REDACTED]

11. TIH with the work string with a cement retainer to the top of [REDACTED] ft.
Circulate the well, set the retainer, and perform an injectivity test. Rig up equipment for
cementing operations.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

19. Lay down the work string. Rig down all equipment and move out. Cut the casing at [REDACTED] ft
below the ground. Clean the cellar to where a plate can be welded with the required well
information.

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The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

The proposed plugging and abandonment procedures and schematics for [REDACTED]
[REDACTED] are included in Appendix A.

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Appendix A: Monitoring and USDW Well Plugging Plans



Table PLG-2—Information on Cement Plugs for Bluebonnet IZM 01

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft ³ /sx
[Redacted Table Content]									

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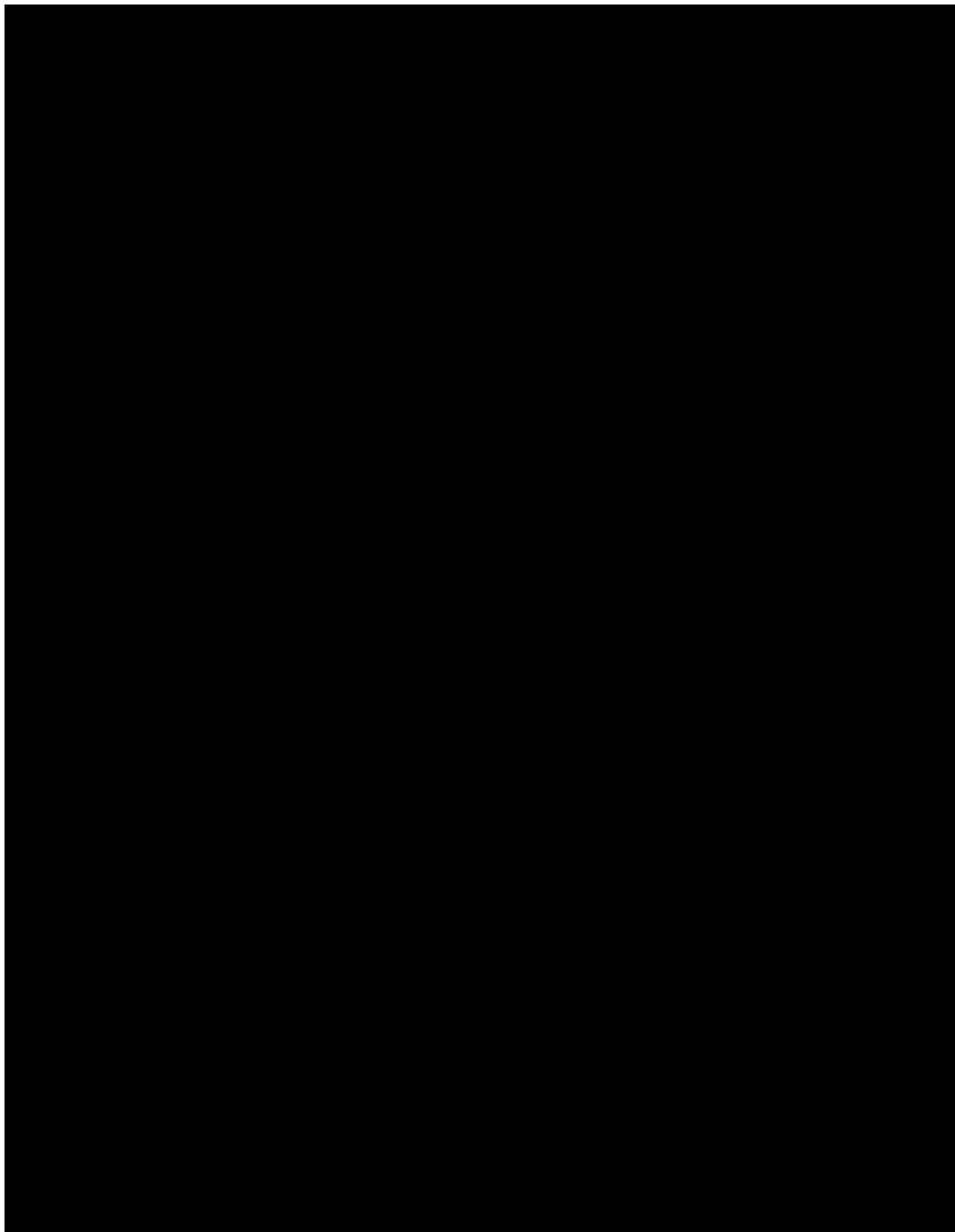


Figure PLG-3—Plugging Design and Schematic for [REDACTED]

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Plugging Procedure

1. Move in rig onto the [REDACTED] site and rig up (RU).
2. Conduct and document a safety meeting.
3. Record the bottomhole pressure (BHP) from the downhole gauge, perform DST survey through fiber optic installed alongside the casing, and calculate kill fluid density.

4. Test the pump and line to [REDACTED] psi. [REDACTED]

5. Test casing annulus to [REDACTED] psi and monitor it for [REDACTED] minutes. If the pressure decreases more than [REDACTED] % in [REDACTED] minutes, bleed the pressure, check surface lines and connections, and repeat the test. Then, release the pressure.

Note: [REDACTED]

6. If both the casing and tubing are dead, then nipple up the blowout preventers (BOPs).
7. Pull out of the hole and lay down tubing, packer, cable, and sensors.

Contingency: [REDACTED]

8. Pick up the work string and trip in hole (TIH) with the bit to condition the wellbore.
9. Pull out of the hole and rig up the logging unit. Confirm external mechanical integrity by running one of the tests listed below as options. Rig down the logging truck.
 - a) Activate Neutron Log
 - b) Noise Log
 - c) Temperature Log
 - d) DTS / DAS temperature survey. (no need for logging unit)
10. [REDACTED]

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11. TIH with the work string with a cement retainer to the top of [REDACTED] ft. Circulate the well, set the retainer, and perform an injectivity test. Rig up equipment for cementing operations.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

18. Lay down the work string. Rig down all equipment and move out. Cut the casing at [REDACTED] ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

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Table PLG-3—Information on Cement Plugs for Bluebonnet IZM 02

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx

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Figure PLG-4—Plugging Design and Schematic for [REDACTED]

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Plugging Procedure

1. Move in rig onto the [REDACTED] site and rig up (RU).
2. Conduct and document a safety meeting.
3. Record the bottomhole pressure (BHP) from the downhole gauge, perform DST survey through fiber optic installed alongside the casing, and calculate kill fluid density.

4. Test the pump and line to [REDACTED] psi. [REDACTED]

5. Test casing annulus to [REDACTED] psi and monitor it for [REDACTED] minutes. If the pressure decreases more than [REDACTED] % in [REDACTED] minutes, bleed the pressure, check surface lines and connections, and repeat the test. Then, release the pressure.

Note: [REDACTED]

6. If both the casing and tubing are dead, then nipple up the blowout preventers (BOPs).
7. Pull out of the hole and lay down tubing, packer, cable, and sensors.

Contingency: [REDACTED]

8. Pick up the work string and trip in hole (TIH) with the bit to condition the wellbore.
9. Pull out of the hole and rig up the logging unit. Confirm external mechanical integrity by running one of the tests listed below as options. Rig down the logging truck.
 - a) Activate Neutron Log
 - b) Noise Log
 - c) Temperature Log
 - d) DTS / DAS temperature survey. (no need for logging unit)

10. [REDACTED]

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11. TIH with the work string with a cement retainer to the top of [REDACTED] ft. Circulate the well, set the retainer, and perform an injectivity test. Rig up equipment for cementing operations.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

18. Lay down the work string. Rig down all equipment and move out. Cut the casing at [REDACTED] ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

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Table PLG-4—Information on Cement Plugs for

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft ³ /s x
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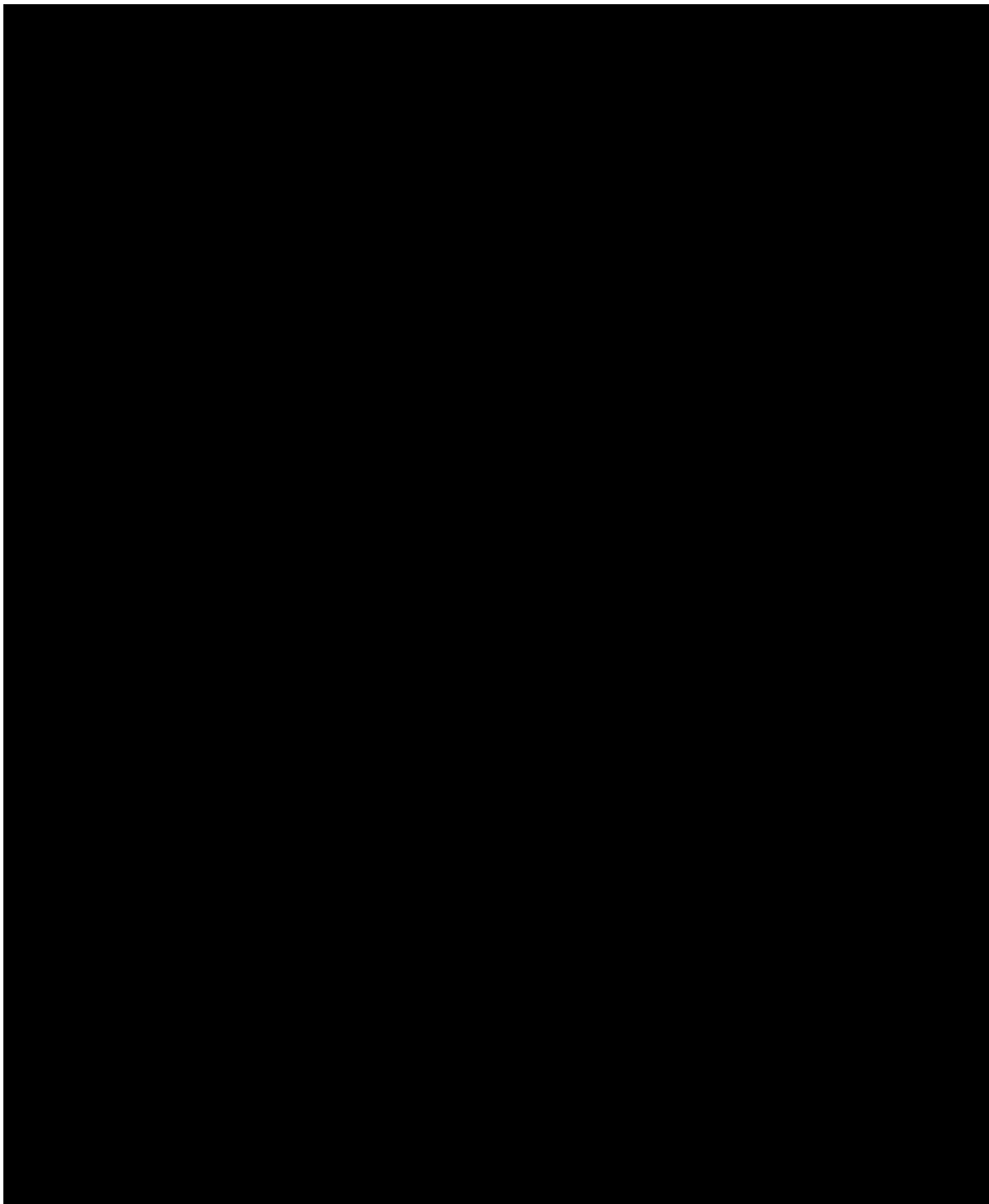


Figure PLG-5—Plugging Design and Schematic for [REDACTED]

Plugging Procedure

1. Move in rig onto [REDACTED] site and rig up (RU).
2. Conduct and document a safety meeting.

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3. Record the surface pressure, bottomhole pressure (BHP) from the downhole gauge, and calculate kill fluid density.

4. Test the pump and line to [REDACTED] psi. [REDACTED]

5. Test casing annulus to [REDACTED] psi and monitor it for [REDACTED] minutes. If the pressure decreases more than [REDACTED] % in [REDACTED] minutes, bleed the pressure, check surface lines and connections, and repeat the test. Then, release the pressure.

Note: [REDACTED]

6. If both the casing and tubing are dead, then nipple up the blowout preventers (BOPs).

7. Pull out of the hole and lay down tubing, packer, cable, and sensors.

Contingency: [REDACTED]

8. Pick up the work string and trip in hole (TIH) with the bit to condition the wellbore.

9. Pull out of the hole and rig up the logging unit. Confirm external mechanical integrity by running one of the tests listed below as options. Rig down the logging truck.

a) Activate Neutron Log

b) Noise Log

c) Temperature Log

10. TIH with the work string with a cement retainer to the top of [REDACTED] ft. Circulate the well, set the retainer, and perform an injectivity test. Rig up equipment for cementing operations.

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

17. Lay down the work string. Rig down all equipment and move out. Cut the casing at [REDACTED] ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

[REDACTED]

Table PLG-5—Information on Cement Plugs for [REDACTED]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[REDACTED]									

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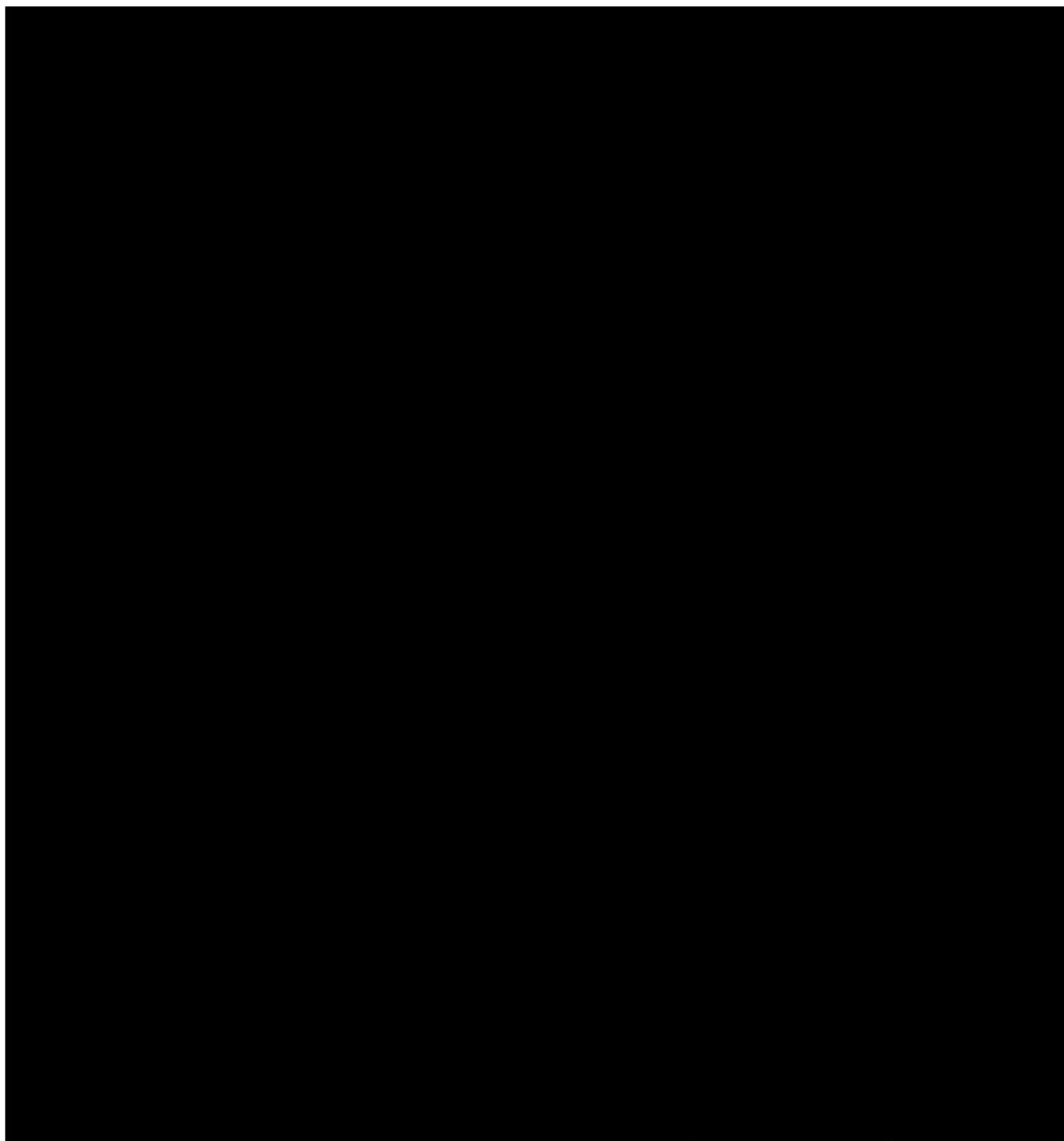


Figure PLG-6—Plugging Design and Schematic for

Plugging Procedure

1. Move in rig onto [REDACTED] 01 site and rig up (RU).
2. Conduct and document a safety meeting.
3. Record the surface pressure, bottomhole pressure (BHP) from the downhole gauge, and calculate kill fluid density.

- Note:**

- ### Contingency:

14. Lay down the work string. Rig down all equipment and move out. Cut the casing at 10 ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

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[REDACTED]

Table PLG-6—Information on Cement Plugs for [REDACTED]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
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[REDACTED]

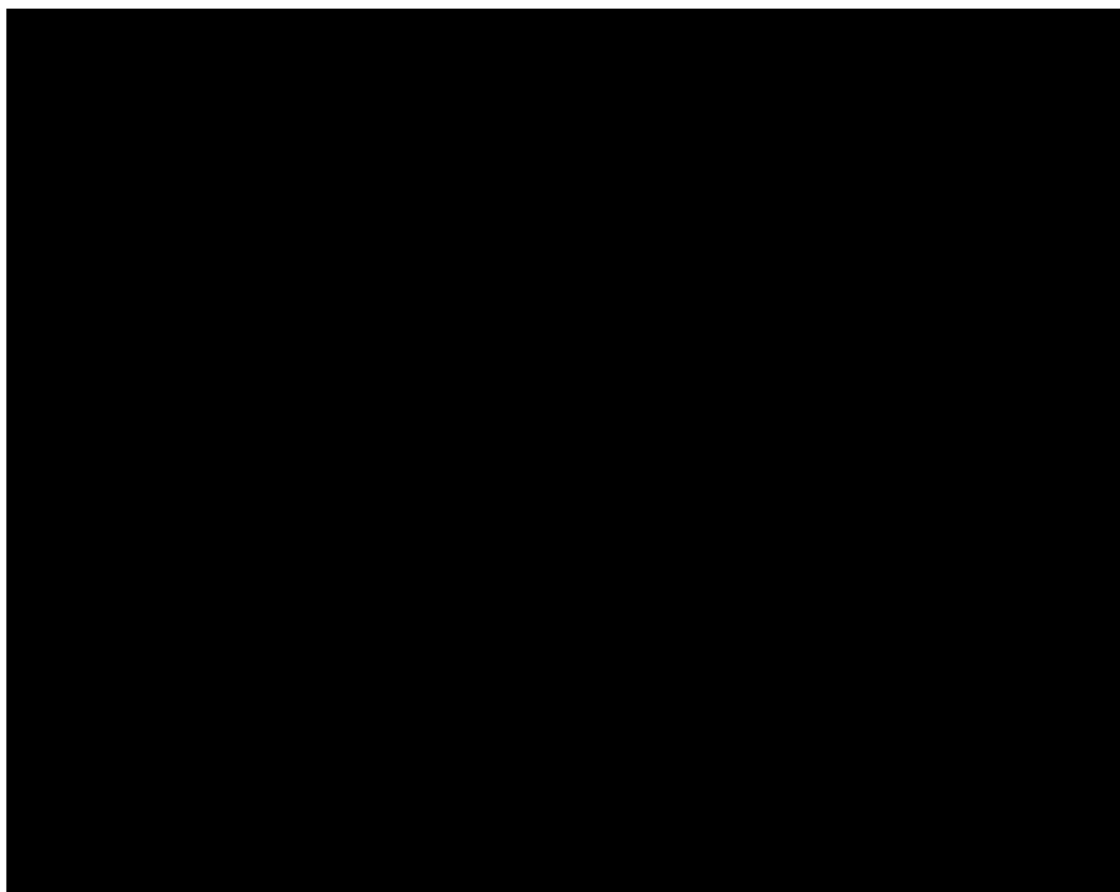


Figure PLG-7—Information on Cement Plugs for [REDACTED]

Plugging Procedure

1. Move in rig onto the [REDACTED] site and rig up (RU).
2. Conduct and document a safety meeting.
3. Record the surface pressure.
4. Test the pump and line to [REDACTED] psi. TIH with the work string to [REDACTED] ft.

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[REDACTED]

6. Lay down the work string. Rig down all equipment and move out. Cut the casing 5 ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

7. The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

[REDACTED]

Table PLG-7—Information on Cement Plugs for [REDACTED]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft ³ /sx
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[REDACTED]

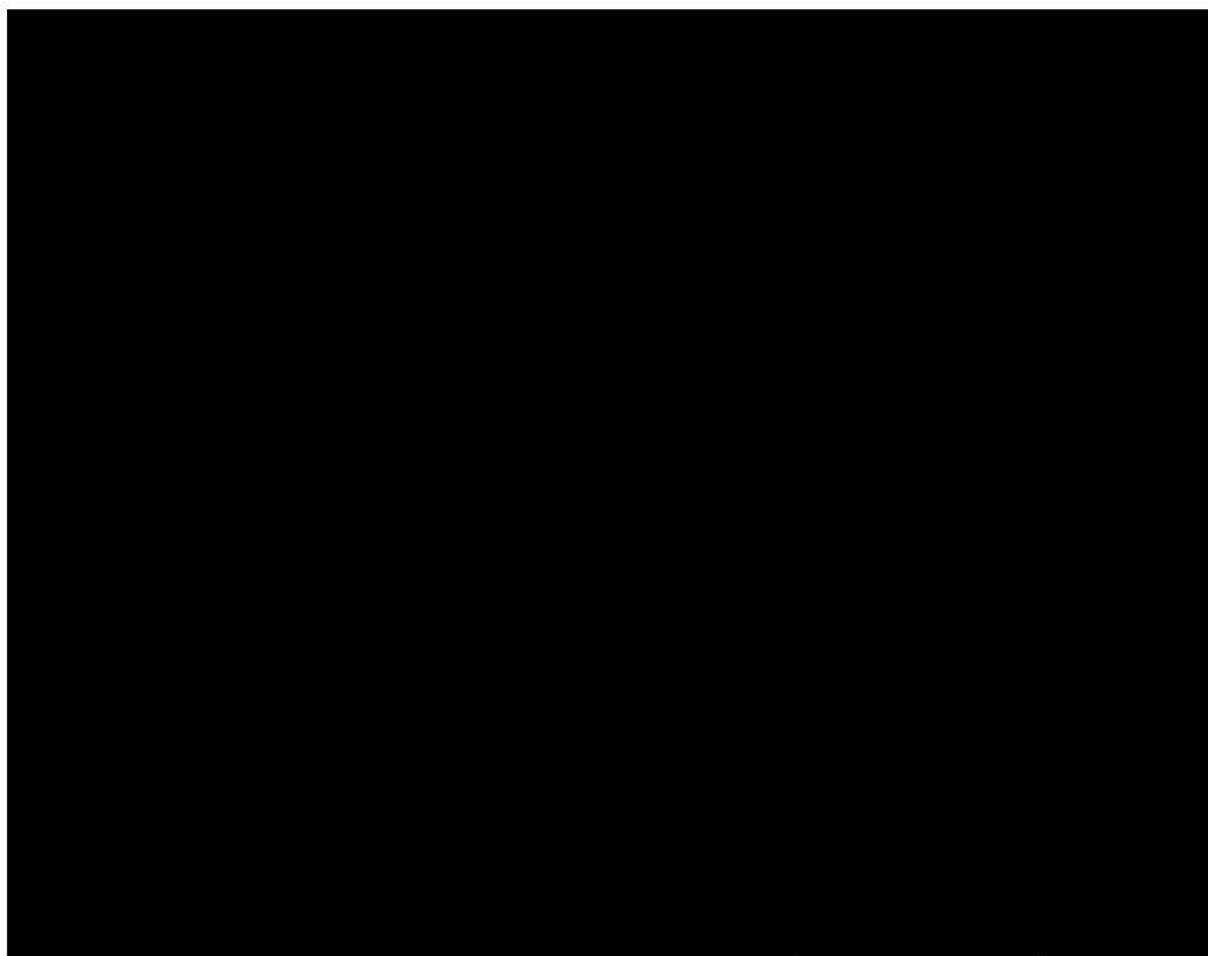


Figure PLG-8—Information on Cement Plugs for [REDACTED]

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1. Move in rig onto the [REDACTED] site and rig up (RU).
2. Conduct and document a safety meeting.
3. Record the surface pressure.
4. Test the pump and line to [REDACTED] psi. TIH with the work string to [REDACTED] ft.

[REDACTED]

6. Lay down the work string. Rig down all equipment and move out. Cut the casing 5 ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

7. The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

[REDACTED]

Table PLG-8—Information on Cement Plugs for [REDACTED]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[REDACTED]									

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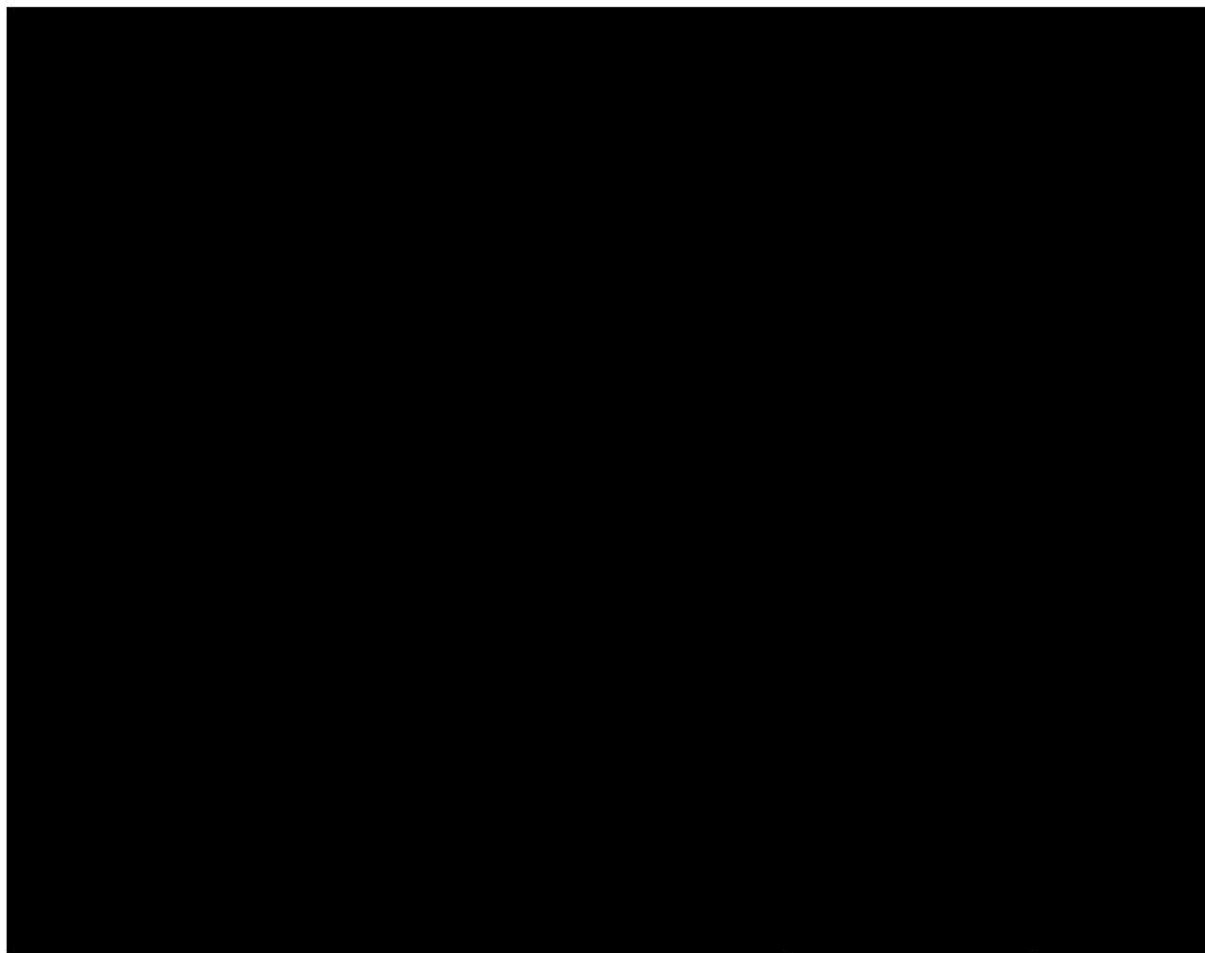


Figure PLG-9—Information on Cement Plugs for

1. Move in rig onto the [REDACTED] site and rig up (RU).
2. Conduct and document a safety meeting.
3. Record the surface pressure.
4. Test the pump and line to [REDACTED] psi. TIH with the work string to [REDACTED] ft.

- [REDACTED]
6. Lay down the work string. Rig down all equipment and move out. Cut the casing [REDACTED] ft below the ground. Clean the cellar to where a plate can be welded with the required well information.
 7. The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.