JEFF LANDRY
GOVERNOR

TYLER PATRICK GRAY
SECRETARY

BENJAMIN C. BIENVENU
COMMISSIONER OF CONSERVATION

State of Louisiana

DEPARTMENT OF ENERGY AND NATURAL RESOURCES
OFFICE OF CONSERVATION

_____ ___, 2024

AARON WIMBERLY
AETHON ENERGY OPERATING, LLC (A1760)
12377 MERIT DRIVE SUITE 1200
DALLAS, TX 75251

*** * * APPROVAL TO CONSTRUCT * * ***

RE: Stratigraphic Test Well - New Drill
Pink Dogwood No. 001
Wildcat - NO LA SHREVEPORT DIST
Sabine Parish

APPLICATION NO. 44622
SERIAL NO. _____
API NO. _____
SEC/TWN/RNG: 28/06N/11W

Mr. Wimberly:

The application by Aethon Energy Operating, LLC (A1760) to drill a Class V stratigraphic test well has met the interim requirements for permitting such a well. You are hereby granted approval to perform the work as described in the application. The approved work must be completed by _____ ___, 2024.

Aethon Energy Operating, LLC (A1760) is to notify the Conservation Enforcement Specialist (CES) for Sabine Parish, Rex Darden at 318-623-4925, Monday through Friday, or by calling the Injection and Mining Division at (225) 342-5515 at least 72 hours prior to commencement of work.

Within twenty (20) days after completion of the work, submit the documentation requested in the enclosed Reporting Requirements to the Injection and Mining Division. PLEASE READ THE ENCLOSURES CAREFULLY.

Please be reminded that for future work on the well, a work permit approval must be obtained from this office before repairing, stimulating, plugging, or otherwise working on this well.

Yours very truly,

Benjamin C. Bienvenu
Commissioner of Conservation

Stephen H. Lee, Director
Injection and Mining Division

OFFICE OF CONSERVATION

IMD REPORTING REQUIREMENTS >> Class V Stratigraphic Test

Drilling and construction of the well must be completed within one (1) year from the date of the permit approval letter, otherwise, the permit will expire. **Before the expiration of the permit, the operator must notify the Injection and Mining Division (IMD) if a time extension will be requested or if well will not be drilled**.

The approved application describes how the well is to be constructed. Changes in the approved construction, such as well surface location, well depth, or casing setting depths, will require prior written approval from IMD. Failure to obtain prior written approval will be cause for revoking the permit.

At least forty-eight (48) hours prior to commencement of work, the appropriate Conservation Enforcement Specialist (CES) identified below must be contacted. If you are unable to reach the CES, please call the Injection and Mining Division at (225) 342-5515 between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday.

Application No.	**44622**	Serial No.	
CES Name	**Rex Darden**	CES Phone No.	**(318) 623-4925**

Within twenty (20) days after completion of the well, the completion documents listed below must be filed with IMD for review and approval in compliance with the regulations. Please place the well's Serial Number on the log headings.

- A Class V Well History and Work Résumé Report (Form UIC-42 STRAT TEST) with an original signature from an authorized representative of the operating company and two photocopies of the form (front and back). The Form UIC-42 can be saved, filled-out, and printed by going to www.dnr.louisiana.gov/consforms >> Injection & Mining Division >> Form UIC-42.
- Two (2) copies of the wellbore schematic depicting the completed well.
- Two (2) copies of the electric log used to identify the USDW.
- Two (2) copies of the cement bond log for each respective casing string.
- An original AFFIDAVIT OF TEST OF CASING IN WELL (Form CSG-T) signed by a company representative and witnessed by a third party for each casing. Provide a copy of the properly labeled pressure chart if the Form CSG-T does not have a witnessed signature. Include the well name, well serial number, casing size, test start time and stop time, date of test, and signature of company representative**.** The Form CSG-T can be downloaded from www.dnr.louisiana.gov/consforms >> Injection & Mining Division >> Form CSG-T.

Send the above required documentation together in **ONE PACKAGE** to:

Office of Conservation- 9th Floor
Injection & Mining Division
617 North 3rd Street
Baton Rouge, LA 70802

Application No. 044622

CLASS V STRAT TEST WELL PERMIT APPLICATION

OFFICE OF CONSERVATION
INJECTION & MINING DIVISION
617 N. Third St., 9th FLOOR
BATON ROUGE, LA 70802

Injection-Mining@la.gov
(225) 342-5515

UIC-25 STRAT TEST **PLEASE READ APPLICATION INSTRUCTIONS** **TYPE ONLY**

1. APPLICATION TYPE: (Check One)

☑ DRILL AND COMPLETE NEW CLASS V WELL ☐ CONVERT AN EXISTING WELL TO CLASS V

☐ OTHER (SPECIFY):

2. IDENTIFY WELL USE

Data collection for potential CCS project

3. IDENTIFY FUTURE WELL USE (i.e. Conversion to Class VI, monitor well, P&A, etc.)

Possible conversion to in-plume Class VI injection well or monitor well. Proposed injection zone based on well log SN229649

4. OWNER/OPERATOR NAME	5. OC OPERATOR CODE
Aethon Energy Operating LLC	A1760

6. OWNER/OPERATOR MAILING ADDRESS	7. CITY, STATE, ZIP CODE
12377 Merit Dr.; Ste 1200	Dallas, TX 75251

8. TELEPHONE NO	9. E-MAIL ADDRESS
214-890-3654	regulatory@aethonenergy.com

10. WELL NAME	11. WELL NO	12. WELL SERIAL NO (Well Conversions Only)
Pink Dogwood	001	

13. FIELD NAME	14. FIELD CODE
Wildcat	9715

15. PARISH NAME	16. SECTION	17. TOWNSHIP	18. RANGE
Sabine	28	6N	11W

19. LOCATION COORDINATES (GCS, NAD 27)				20. STATE PLANE COORDINATES (LAMBERT, NAD 27)	
LATITUDE:	31 °	28 MIN	01.77 SEC	☑ NORTH ZONE	☐ SOUTH ZONE
LONGITUDE:	93 °	29 MIN	46.19 SEC	X: 1689415.45	Y: 292603.71

21. LEGAL LOCATION DESCRIPTION (FROM LOCATION PLAT):

590' FSL & 1764' FEL IN THE SE QUARTER OF S28-T6N-R11W, SABINE PARISH, LA

OFFICE OF CONSERVATION
JUL 01 2024
INJECTION AND MINING DIVISION

Application No. 044622

22. LIST PERMITS, LICENSES, OR APPROVALS THE APPLICANT HAS RECEIVED OR APPLIED FOR WHICH SPECIFICALLY AFFECT THE APPLICANT'S LEGAL OR TECHNICAL ABILITY TO CARRY OUT THE PROPOSED ACTIVITY. INCLUDE IDENTIFICATION NUMBER OF APPLICATIONS OR, IF ISSUED, THE IDENTIFICATION NUMBER OF THE PERMIT, LICENSE, OR OTHER APPROVALS.

Regulatory Program or Agency	Permits, Licenses, Construction, Project Approval Identification

23. WELL CASING / CEMENT DATA

CASING SIZE (OD-INCHES)	HOLE DIAMETER (INCHES)	CASING WEIGHT (LB/FT)	CASING GRADE	CASING SETTING DEPTHS TOP	CASING SETTING DEPTHS BOTTOM	TOTAL SACKS	SACKS CEMENT (Lead/Tail)	TYPE (Lead/Tail)	YIELD (CU FT/SACK) (Lead/Tail)	CEMENT TOP
13.375	17.5	54.5	J55 BTC	0	2000	2063	853/1210	CLAS H BLEND	1.6/1.18	SURFACE

*****ALL WELL DEPTHS SHOULD BE GIVEN IN MD*****

24. BASE OF USDW (FT):	25. REFERENCE E-LOG FOR USDW (SERIAL NUMBER):
1343	104966

26. WELL TOTAL DEPTH (FT):	27. PLUGBACK DEPTH (FT):	28. TUBING SIZE & DEPTH:	29. PACKER SIZE & DEPTH:
7930			

INJECTIVITY TEST INFORMATION (IF APPLICABLE)

30. INJECTION ZONE DEPTHS	31. COMPLETION/PERFORATION DEPTHS
Top: Bottom:	Top: Bottom:

32. REFERENCE E-LOG FOR INJECTION ZONE INFO (SERIAL NUMBER):

33. WELL COMPLETION ☑ OPEN HOLE ☐ PERFORATIONS ☐ SCREEN

34. TEST MATERIAL (e.g. nitrogen, brine, etc):	35. MAXIMUM TEST PRESSURE (psi):	36. TOTAL INJECTION VOLUME (bbls):
CO_2 is prohibited as a Class V test material		

37. Is the Well Located on Indian Lands or Other Lands Owned by or under the Jurisdiction or Protection of the Federal Government?	☐ YES ☑ NO
38. Is the Well Located on State Water Bottoms or Other Lands Owned by or under the Jurisdiction or Protection of the State of Louisiana?	☐ YES ☑ NO
39. If the proposed well is associated with a potential Class VI geologic sequestration project, does the applicant own the mineral rights at the proposed well locations?	☐ YES ☑ NO
40. If no, has written notification been provided to the mineral owner(s)?	☑ YES ☐ NO

OFFICE OF CONSERVATION

JUL 0 1 2024

INJECTION AND MINING DIVISION

41. AGENT OR CONTACT AUTHORIZED TO ACT ON BEHALF OF THE APPLICANT DURING THE PROCESSING OF THIS APPLICATION

NAME: SHARON CLEMENTS

COMPANY: LONQUIST & CO. LLC

MAILING ADDRESS: 12912 HILL COUNTRY BLVD., AUSTIN, TX 78738

TELEPHONE NUMBER: 281-799-8627

E-MAIL ADDRESS: sharon.clements@lonquist.com

42. CERTIFICATION BY WELL OWNER/OPERATOR

I certify that as the owner/operator of the injection well, the person identified in Item No. 37 above is authorized to act on my behalf during the processing of this application, to submit additional information as requested, and to give oral statements in support of this application. I will grant an authorized agent of the Office of Conservation entry onto the property to inspect the injection well and related appurtenances as per LSA-R.S. 30:4. I agree to operate the well in accordance with Office of Conservation guidelines. I further certify under penalty of law that I have 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 or imprisonment or both (LSA-R.S. 30:17).

Print Name of Well Owner/Operator	Print Title of Company Official (as applicable)
Aethon Energy Operating LLC	Chief HSE Officer

Signature of Well Owner/Operator	Date
[signature]	6/27/24

OFFICE OF CONSERVATION

JUL 0 1 2024

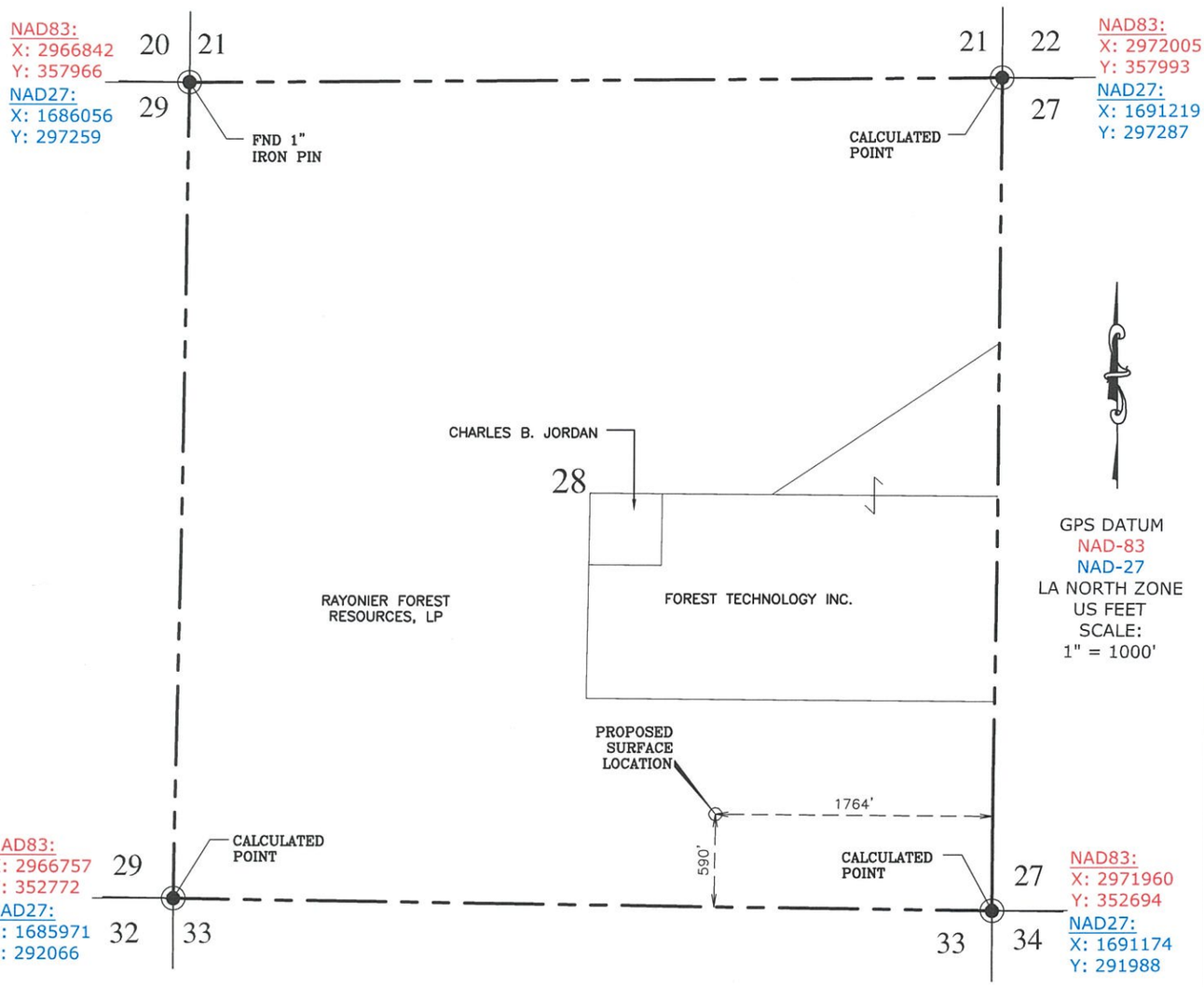
INJECTION AND MINING DIVISION

appl. no. 044622

- BEARINGS, DISTANCES AND COORDINATES SHOWN HEREON ARE BASED ON THE LOUISIANA STATE PLANE COORDINATE SYSTEM, N.A.D. 83 DATUM (NORTH ZONE) – NAVD–88
- OWNERSHIP INFORMATION PROVIDED BY OTHERS.
- LEASE LINES SHOWN ARE DRAWN FROM RECORD INFORMATION PROVIDED BY OTHERS.
- THIS PLAT IS NOT A PROPERTY BOUNDARY SURVEY AND AS SUCH DOES NOT COMPLY WITH THE "MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS" AS ADOPTED BY THE LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD.
- DATA WAS COLLECTED USING GNSS/RTK WITH CORS CORRECTIONS

Prepared By:
Petro Land Services South
210 Kansas City Ave.
Shreveport, LA 71107

500' 0 250' 500' 1,000'
1 inch = 1,000 ft.



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INJECTION & MINING DIVISION

WELL LOCATION PLAT
AETHON ENERGY OPERATING LLC

PINK DOGWOOD NO. 1
SECTION 28–6N–11W
SABINE PARISH, LOUISIANA
SCALE: 1" = 1,000'

LEGAL DESCRIPTION:
PROPOSED WELL LOCATED 590'–FSL AND 1,764'–FEL IN THE SOUTHEAST QUARTER (SE/4) OF SECTION 28–T6N–R11W, LOUISIANA MERIDIAN.

PROPOSED SURFACE LOCATION
STATE PLANE COORDINATE – NORTH ZONE:
NAD–83 X: 2970201.33 Y: 353309.87
NAD–27 X: 1689415.45 Y: 292603.71
GEOGRAPHIC NAD–83: LAT: N31°28'02.40" LON: W93°29'46.82"
GEOGRAPHIC NAD–27: LAT: N31°28'01.77" LON: W93°29'46.19"
NAT. GROUND ELEV. 335'
CALLS: 590' FSL, 1764' FEL OF 28–6N–11W

I, ADAM MAYWHORT, PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE WELL LOCATION DEPICTED AND DESCRIBED IN THIS PLAT WAS LOCATED AND SURVEYED IN THE FIELD BY ME OR UNDER MY DIRECTION WITH ACCURACY AND PRECISION TO THE NEAREST FOOT. I HAVE PROPERLY EXAMINED THE SURVEY AND PLAT AND HAVE DETERMINED THAT IT MEETS THE MINIMUM STANDARDS OF PRACTICE FOR LAND SURVEYING IN THE STATE OF LOUISIANA.

STATE OF LOUISIANA
ADAM MAYWHORT
LIC. No. 5193
LICENSED PROFESSIONAL LAND SURVEYOR

1-9-2024

PROFESSIONAL LAND SURVEYOR
NO. 5193 – STATE OF LOUISIANA

FIELD SURVEY: 12/11/23 | PINK DOGWOOD NO. 1 | REV: 01/08/24

104022

Pink Dogwood Table of Formation Tops

Intervals	Serial Number	MD (ft)	Active Datum	Datum	Comments
Base of USDW	104966	1343	KB	303	LADNR/IMD, SP/Resistivity log
Midway Shale	229649	2860	KB	383	GR, ILD, DPHI, NPHI log
Saratoga	229649	3773	KB	383	GR, ILD, DPHI, NPHI log
Annona Sand	229649	3960	KB	383	GR, ILD, DPHI, NPHI log
Austin Chalk	229649	4781	KB	383	GR, ILD, DPHI, NPHI log – zone of interest
Lower Cretaceous Lime	229649	5380	KB	383	GR, ILD, DPHI, NPHI log – zone of interest
Paluxy	229649	5607	KB	383	GR, ILD, DPHI, NPHI log
Glen Rose	229649	5879	KB	383	GR, ILD, DPHI, NPHI log – zone of interest
Mooringsport	229649	6549	KB	383	GR, ILD, DPHI, NPHI log – zone of interest
Ferry Lake	229649	7228	KB	383	GR, ILD, DPHI, NPHI log – zone of interest
Rodessa	229649	7560	KB	383	GR, ILD, DPHI, NPHI log

OFFICE OF CONSERVATION

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INJECTION & MINING DIVISION

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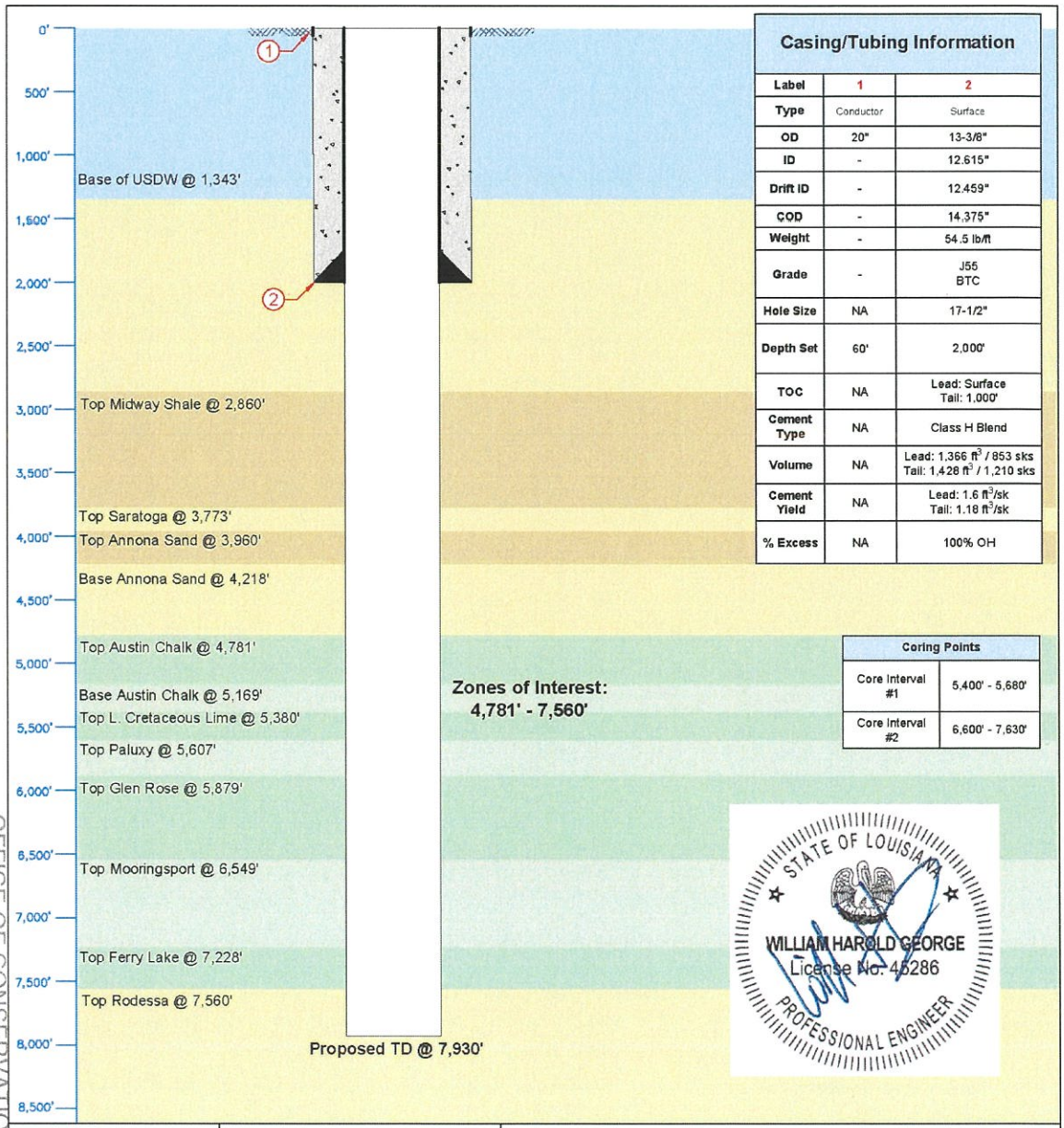
Revised Drilling Schematic



Casing/Tubing Information

Label	1	2
Type	Conductor	Surface
OD	20"	13-3/8"
ID	-	12.615"
Drift ID	-	12.459"
COD	-	14.375"
Weight	-	54.5 lb/ft
Grade	-	J55 BTC
Hole Size	NA	17-1/2"
Depth Set	60'	2,000'
TOC	NA	Lead: Surface Tail: 1,000'
Cement Type	NA	Class H Blend
Volume	NA	Lead: 1,366 ft^3 / 853 sks Tail: 1,428 ft^3 / 1,210 sks
Cement Yield	NA	Lead: 1.6 ft^3/sk Tail: 1.18 ft^3/sk
% Excess	NA	100% OH

Coring Points	
Core Interval #1	5,400' - 5,680'
Core Interval #2	6,600' - 7,630'

STATE OF LOUISIANA
WILLIAM HAROLD GEORGE
License No. 45286
PROFESSIONAL ENGINEER

LONQUIST SEQUESTRATION LLC	Aethon Energy Operating, LLC	Pink Dogwood No. 001	
	Country: USA	**State/Province:** Louisiana	**County/Parish:** Sabine
	Location: 31.4662290, -93.4916405	**District:**	**S/T/R:** 28-6N-11W
	API No:	**Field:**	**Well Type/Status:**
Louisiana License EF-7423	**Serial No:**	**Project No:** LS177	**Date:** 1/19/2024
12912 Hill Country Blvd Ste F-200 Austin, Texas 78738 Tel 512.732.9812 Fax 512.732.9816	**Drawn:** Connor Lofton	**Reviewed:** Roger Dugas	**Approved:** William H. George, P.E.
	Rev No: 0	**Notes:**	

044622

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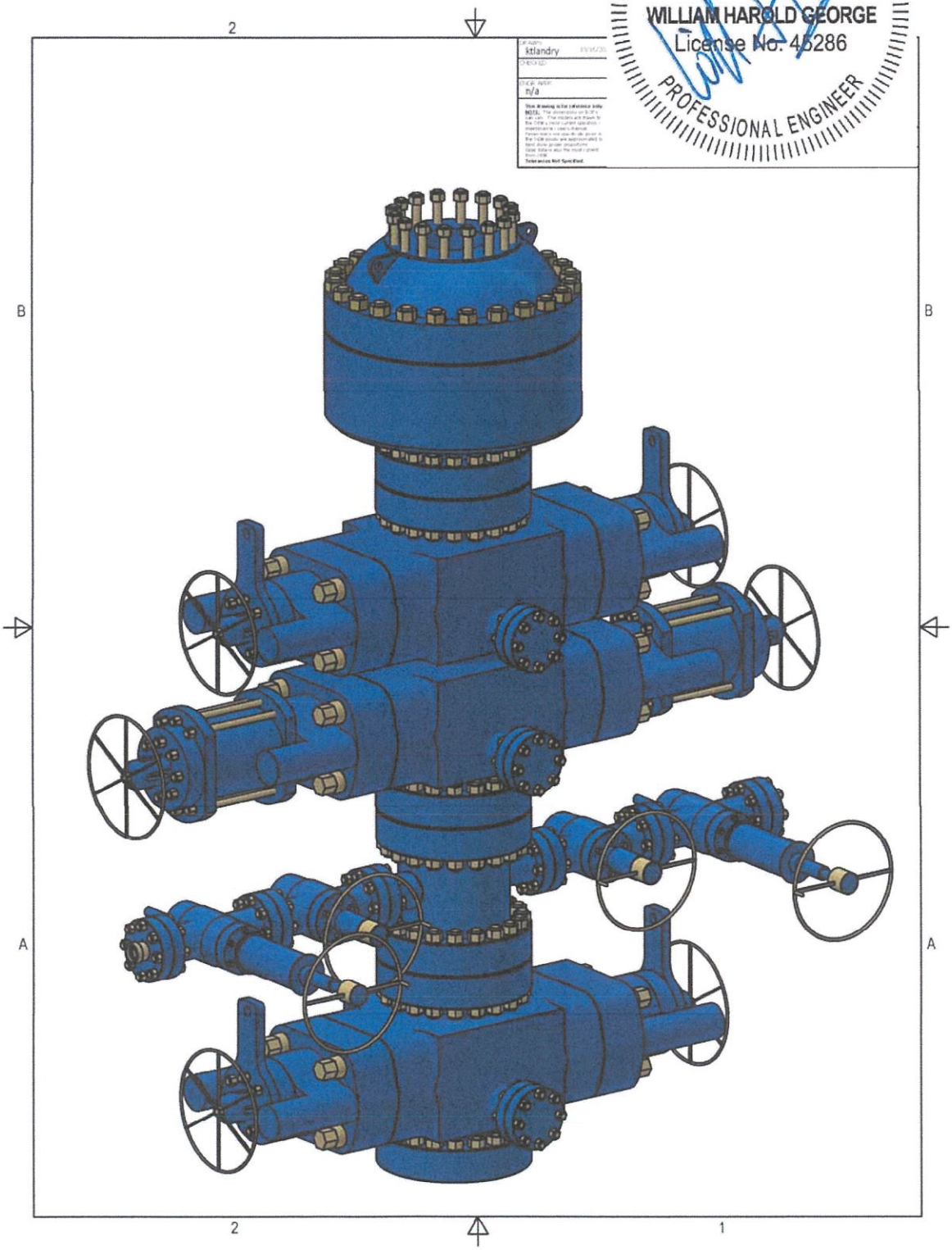
OCT 20 2023

INJECTION AND MINING DIVISION

STATE OF LOUISIANA
WILLIAM HAROLD GEORGE
License No. 45286
PROFESSIONAL ENGINEER

Proposed BOP Schematic (13-5/8" 10M with 5M Annular)



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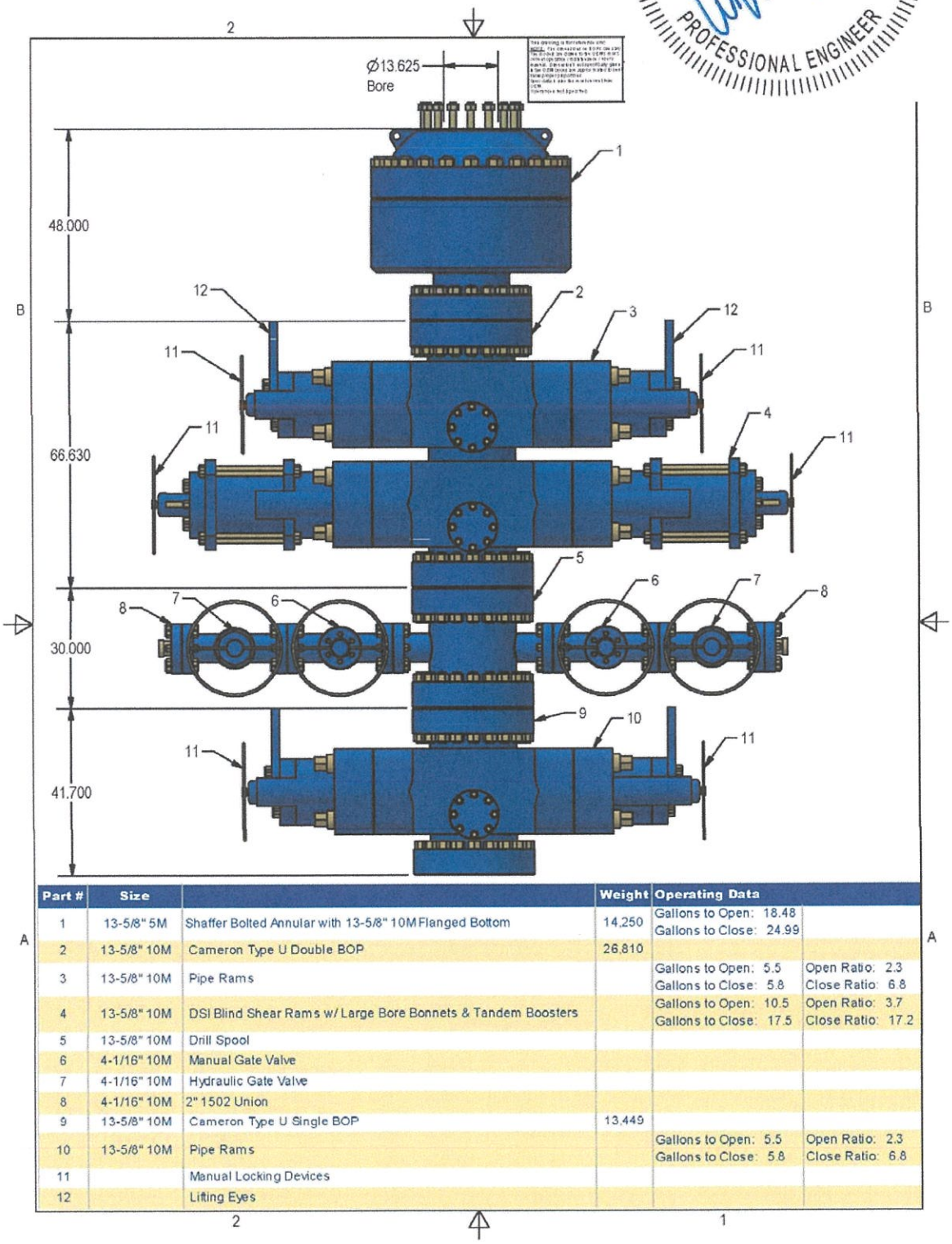
Proposed BOP Schematic (13-5/8" 10M with 5M Annular)



Part #	Size		Weight	Operating Data	
1	13-5/8" 5M	Shaffer Bolted Annular with 13-5/8" 10M Flanged Bottom	14,250	Gallons to Open: 18.48 Gallons to Close: 24.99	
2	13-5/8" 10M	Cameron Type U Double BOP	26,810		
3	13-5/8" 10M	Pipe Rams		Gallons to Open: 5.5 Gallons to Close: 5.8	Open Ratio: 2.3 Close Ratio: 6.8
4	13-5/8" 10M	DSI Blind Shear Rams w/ Large Bore Bonnets & Tandem Boosters		Gallons to Open: 10.5 Gallons to Close: 17.5	Open Ratio: 3.7 Close Ratio: 17.2
5	13-5/8" 10M	Drill Spool			
6	4-1/16" 10M	Manual Gate Valve			
7	4-1/16" 10M	Hydraulic Gate Valve			
8	4-1/16" 10M	2" 1502 Union			
9	13-5/8" 10M	Cameron Type U Single BOP	13,449		
10	13-5/8" 10M	Pipe Rams		Gallons to Open: 5.5 Gallons to Close: 5.8	Open Ratio: 2.3 Close Ratio: 6.8
11		Manual Locking Devices			
12		Lifting Eyes			

044022

LONQUIST SEQUESTRATION LLC	Drilling Prognosis	Project No.: LS177
	Aethon Energy Operating, LLC Pink Dogwood No. 001 Drilling Prognosis	Date: October 2023
		Page: 1 of 4

Well: Pink Dogwood No. 001	**State:** Louisiana	**Parish:** Sabine	**Field:**
Well API#: TBD	**Oper:** Aethon Energy	**Location:** S28 T6N R11W	**Status:** Class V
TD: 7,930	**Casing:** 13-3/8"	**Casing Shoe:** 2,000'	**Service:** Strat Test Well
LAT: 31.2443390	**LONG:** -93.4916405	**System:** NAD 27	**Elevation:**

WORK PLAN:
This procedure has been developed for the installation of a Class V stratigraphic test well with a 13-3/8" final cemented casing string set at 2,000' below ground level. Details contained in this procedure are subject to change based on conditions encountered while drilling.

LOCATION PREPARATION

1. Survey and prepare well location for drilling equipment.
2. **CONTACT LDENR PRIOR TO SETTING CONDUCTOR**
   a. **Billy Carnes – LDENR Inspector**
      (225) 405-7470
   b. **24 HOURS PRIOR TO SETTING CONDUCTOR**
   c. **Log in Daily Report**

Conductor Casing – 20": Weight and Grade TBD **0' – 60'**

3. Mobilize and rig up auger rig and drill 24" hole to ~60'
4. Run 20" conductor casing
   a. Rig up handling equipment, welders and roustabouts for 20" casing
   b. Cement conductor casing to surface
5. Rig down auger rig and equipment
6. Mobilize and rig up drilling rig and equipment.

SURFACE CASING – 13.375": Grade: J-55: 54.50 lb/ft: BTC **0' – 2,000'**

7. Build 8.5 to 10.0 ppg water based mud (WBM) system
8. Install bell nipple and flow lines
9. Pick up 17-1/2" bit/bottom hole assembly (BHA)
10. Clean out conductor as needed
11. Drill 17-1/2" hole to 2,000' or below USDW
    a. 8.5 to 10.0 ppg WBM
    b. Increase mud weight as needed throughout section
    c. Complete survey every 100' of drilled hole
    d. USDW depth estimated at 1,700'
12. Circulate hole clean and prepare for logging operation
13. Pull out of hole (POOH) with 17-1/2" bit/BHA

PREPARED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE	Lonquist Sequestration, LLC
Roger Dugas	10/17/2023	William H. George, P.E.	10/20/2023			Louisiana License EF-7423

LONQUIST SEQUESTRATION LLC	Drilling Prognosis	Project No.: LS177
	Aethon Energy Operating, LLC Pink Dogwood No. 001 Drilling Prognosis	Date: October 2023
		Page: 2 of 4

Well: Pink Dogwood No. 001	**State:** Louisiana	**Parish:** Sabine	**Field:**
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LAT: 31.2443390	**LONG:** -93.4916405	**System:** NAD 27	**Elevation:**

14. Rig up wireline equipment
    a. Run formation evaluation logging suite from TD to surface
        i. Gamma Ray, Spontaneous Potential, Resistivity
            1. USDW determination
        ii. Open hole caliper
            1. Open hole plug volume determination
15. **CONTACT LDENR PRIOR TO RUNNING AND CEMENTING CASING**
    a. **Billy Carnes – LDENR Inspector**
    (225) 405-7470
    b. **24 HOURS PRIOR TO RUNNING / CEMENTING**
    c. **Log in Daily Report**
16. Rig up surface casing running tools
17. Run 2,000' of 13-3/8" surface casing with centralizers and float equipment
18. Rig up cementing equipment
19. Cement surface casing to surface
    a. Lead Cement (surface to 1,000') – 1,366 ft^3; 853 sacks; 1.6 ft^3/sk yield; Class H; 100% excess open hole
    b. Tail Cement (1,000' to 2,000') – 1,428 ft^3; 1,210 sacks; 1.18 ft^3/sk yield; Class H; 100% excess open hole
    c. Final cement volumes to be determined based on caliper log results
20. Circulate cement to surface
    a. Pump top off cement job if necessary
21. Rig up wireline and run temperature log on surface casing approximately 8 hours after cementing
22. Wait on cement (WOC) for 24 hours or as lab testing dictates
23. Rig down cementing equipment
24. Cut 13-3/8" surface casing, install and test 13-5/8" 5M x 13-3/8" SOW
25. Install 13-5/8" 10M with 5M Annular BOP equipment and test
    a. Pressure test pipe and blind rams to 7,500 psi
    b. Pressure test annular to 5,000 psi
26. Install bell nipple and flow lines
27. Rig up wireline and run cement bond log on surface casing

PREPARED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE	Lonquist Sequestration, LLC
Roger Dugas	10/17/2023	William H. George, P.E.	10/20/2023			Louisiana License EF-7423

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LONQUIST SEQUESTRATION LLC	Drilling Prognosis	Project No.: LS177
	Aethon Energy Operating, LLC Pink Dogwood No. 001 Drilling Prognosis	Date: October 2023
		Page: 3 of 4

Well: Pink Dogwood No. 001	**State:** Louisiana	**Parish:** Sabine	**Field:**
Well API#: TBD	**Oper:** Aethon Energy	**Location:** S28 T6N R11W	**Status:** Class V
TD: 7,930	**Casing:** 13-3/8"	**Casing Shoe:** 2,000'	**Service:** Strat Test Well
LAT: 31.2443390	**LONG:** -93.4916405	**System:** NAD 27	**Elevation:**

8-3/4" OPEN HOLE AND CORING **2,000' – 7,930'**

28. Make up 8-3/4" bit/BHA and trip in hole to float equipment
29. **CONTACT LDENR PRIOR TO PRESSURE TESTING CASING**
    a. **Billy Carnes – LDENR Inspector**
       (225) 405-7470
    b. **24 HOURS PRIOR TO TESTING**
    c. **Log in Daily Report**
30. Pressure test the casing to LDENR specifications
    a. Test at a minimum of 500 psi for 1 hour
    b. Complete and submit form CSG-T to IMD office
31. Drill out float collar and test to LDENR specifications
32. Drill out float shoe and 15' of formation below 13-3/8" casing shoe and perform FIT/LOT
33. Displace WBM with 9.0 to 10.0 ppg oil based mud (OBM)
34. Rig up mud logging equipment
35. Drill 8-3/4" hole to first core point at 5,400'
    a. 9.0 to 10.0 ppg OBM
    b. Increase mud weight as needed throughout section
    c. Collect mud log sample every 30' throughout section
    d. Complete survey every 100' of drilled hole
36. Circulate hole clean and prepare for coring operation
37. POOH with 8-3/4" bit/BHA
38. Collect 280' of core
    a. Target formations: Austin Chalk and Lower Cretaceous Lime
39. Drill 8-3/4" hole to second core point at 6,600'
    a. 9.0 to 10.0 ppg OBM
    b. Increase mud weight as needed throughout section
    c. Collect mud log sample every 30' throughout section
    d. Complete survey every 100' of drilled hole
40. Circulate hole clean and prepare for coring operation
41. POOH with 8-3/4" bit/BHA
42. Collect 1,030' of core
    a. Target formations: Glen Rose, Mooringsport and Ferry Lake
43. Drill 8-3/4" hole to TD at 7,930'
    a. 9.0 to 10.0 ppg OBM
    b. Increase mud weight as needed throughout section
    c. Collect mud log sample every 30' throughout section
    d. Complete survey every 100' of drilled hole

OFFICE OF CONSERVATION

2 0 2024

INJECTION & MINING DIVISION

PREPARED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE	Lonquist Sequestration, LLC
Roger Dugas	10/17/2023	William H. George, P.E.	10/20/2023			Louisiana License EF-7423

LONQUIST SEQUESTRATION LLC	Drilling Prognosis	Project No.: LS177
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		Page: 4 of 4

Well: Pink Dogwood No. 001	**State:** Louisiana	**Parish:** Sabine	**Field:**
Well API#: TBD	**Oper:** Aethon Energy	**Location:** S28 T6N R11W	**Status:** Class V
TD: 7,930	**Casing:** 13-3/8"	**Casing Shoe:** 2,000'	**Service:** Strat Test Well
LAT: 31.2443390	**LONG:** -93.4916405	**System:** NAD 27	**Elevation:**

44. Rig up wireline equipment
    a. Run formation evaluation logging suite from TD to surface casing shoe
        i. Spectral Gamma Ray
        ii. Spontaneous Potential
        iii. Bulk Density
        iv. Neutron Porosity
        v. Induction
        vi. Formation Micro Imager
        vii. Magnetic Resonance
        viii. Sonic
        ix. Elemental Spectroscopy
        x. Pressure and Fluid Sampling
        xi. Rotary Sidewall Cores
            1. May be considered in addition to whole cores, but not as a substitute
        xii. Open hole caliper
            1. Open hole plug volume determination
45. Run in hole with 8-3/4" bit/BHA to TD
46. Displace OBM with WBM in preparation for plugging
47. Circulate and condition WBM
    a. WBM must be at least 9.0 ppg
48. POOH with 8-3/4" bit/BHA

OFFICE OF CONSERVATION

MAR 28 2024

INJECTION & MINING DIVISION

PREPARED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE	Lonquist Sequestration, LLC
Roger Dugas	10/17/2023	William H. George, P.E.	10/20/2023			Louisiana License EF-7423

Logging and Coring Program

Mud logging

1. Sample every 30 ft from surface casing shoe to TD in the production hole

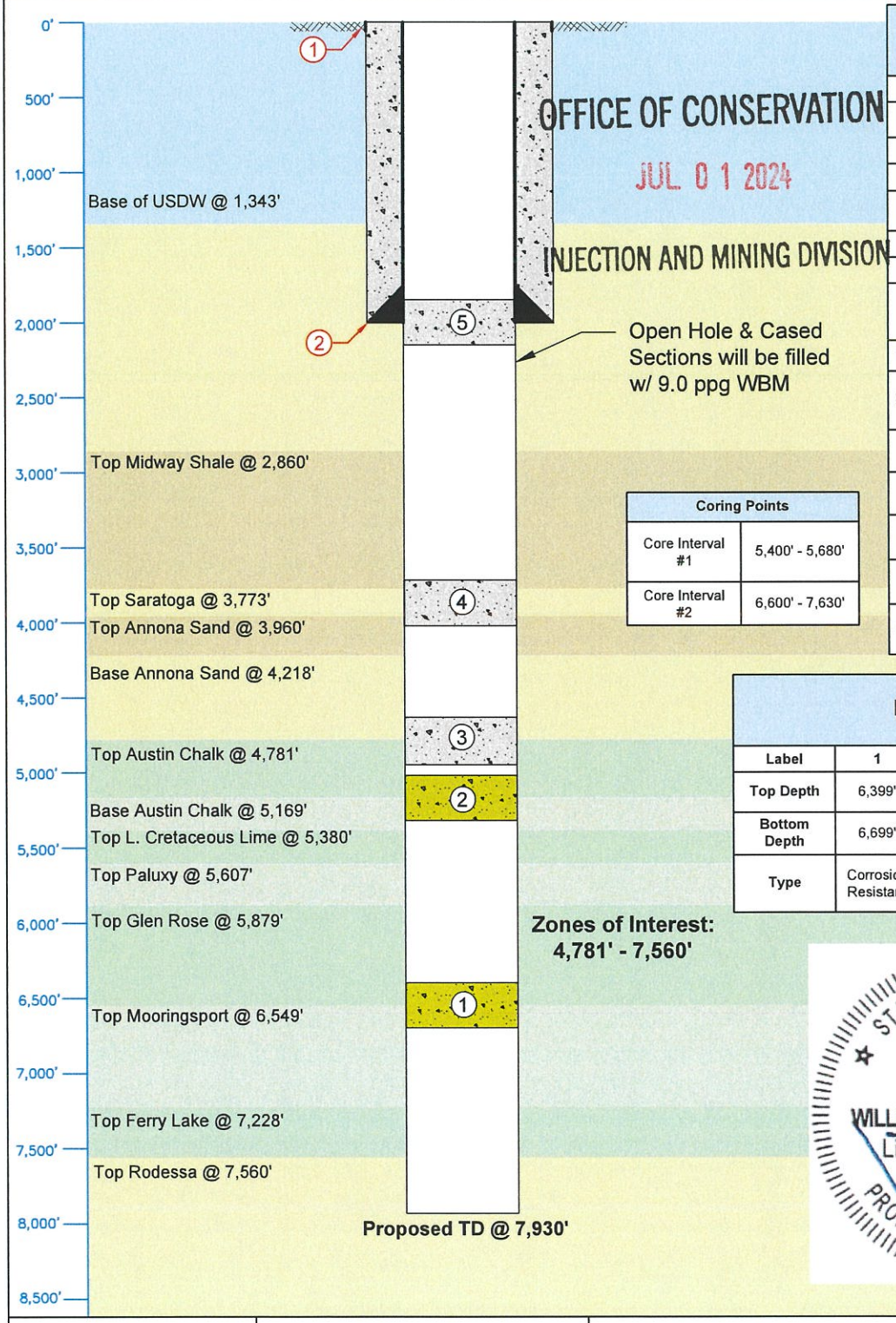
Core Points

No.	Formation	Depth (ft)	Length (ft)
1	Austin Chalk / L. Cretaceous Lime	5,400' – 5,680'	280
2	Glen Rose/ Mooringsport / Ferry Lake	6,600' – 7,630'	1,030'
		Additional Sidewall Cores may be collected	

Logging Program

Section	Open Hole Logs	Interval/Sample
17.5" hole at 2,000 ft	Gyro Survey	0' – 2,000'
	Gamma Ray	
	Spontaneous Potential	
	Resistivity	
	Caliper	
8-3/4" hole at 7,930 (TD) ft	Gyro Survey	2,000' – 7,930' (TD)
	Spectral Gamma Ray	2,000' – 7,930' (TD)
	Spontaneous Potential	2,000' – 7,930' (TD)
	Bulk Density	2,000' – 7,930' (TD)
	Neutron Porosity	2,000' – 7,930' (TD)
	Induction	2,000' – 7,930' (TD)
	Formation Micro Imager	2,000' – 7,930' (TD)
	Magnetic Resonance	2,000' – 7,930' (TD)
	Sonic	2,000' – 7,930' (TD)
	Elemental Spectroscopy	2,000' – 7,930' (TD)
	Caliper	2,000' – 7,930' (TD)
	Pressure and Fluid Sampling	TBD
	Rotary Sidewall Cores	TBD
Section	**Cased Hole Logs**	**Interval/Sample**
13-3/8" casing at 2,000 ft	Temperature	0' – 2,000'
	Cement Bond Log	0' – 2,000'

Application No. 044622



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INJECTION AND MINING DIVISION

Casing/Tubing Information

Label	1	2
Type	Conductor	Surface
OD	20"	13-3/8"
ID	-	12.615"
Drift ID	-	12.459"
COD	-	14.375"
Weight	-	54.5 lb/ft
Grade	-	J55 BTC
Hole Size	NA	17-1/2"
Depth Set	60'	2,000'
TOC	NA	Lead: Surface Tail: 1,000'
Cement Type	NA	Class H Blend
Volume	NA	Lead: 1,366 ft^3 / 853 sks Tail: 1,428 ft^3 / 1,210 sks
Cement Yield	NA	Lead: 1.6 ft^3/sk Tail: 1.18 ft^3/sk
% Excess	NA	100% OH

Coring Points

Core Interval #1	5,400' - 5,680'
Core Interval #2	6,600' - 7,630'

Plug Information

Label	1	2	3	4	5
Top Depth	6,399'	5,019'	4,631'	3,717'	1,850'
Bottom Depth	6,699'	5,319'	4,931'	4,017'	2,150'
Type	Corrosion Resistant	Corrosion Resistant	Class H	Class H	Class H

STATE OF LOUISIANA
WILLIAM HAROLD GEORGE
License No. 45286
PROFESSIONAL ENGINEER

LONQUIST SEQUESTRATION LLC

Louisiana License EF-7423

12912 Hill Country Blvd. Ste F-200
Austin, Texas 78738
Tel: 512.732.9812
Fax: 512.732.9816

Aethon Energy Operating, LLC	Pink Dogwood No. 001 Temporarily Abandon	
Country: USA	**State/Province:** Louisiana	**County/Parish:** Sabine
Location: 31.4662290, -93.4916405	**District:**	**S/T/R:** 28-6N-11W
API No:	**Field:**	**Well Type/Status:**
Serial No:	**Project No:** LS177	**Date:** 1/19/2024
Drawn: Connor Lofton	**Reviewed:** Roger Dugas	**Approved:** William H. George, P.E.
Rev No: 0	**Notes:**	

Application No. 044622

LONQUIST SEQUESTRATION LLC	**Temporarily Abandon Prognosis**	**Project No.: LS177**
	Aethon Energy Operating, LLC **Pink Dogwood No. 001** **Plug and Abandon Prognosis**	**Date:** June 2024
		Page: 1 **of** 1

Well: Pink Dogwood No. 001	**State:** Louisiana	**Parish:** Sabine	**Field:**
Well API#: TBD	**Oper:** Aethon Energy	**Location:** S28 T6N R11W	**Status:** Class V
TD: 7,930'	**Casing:** 13-3/8"	**Casing Shoe:** 2,000'	**Service:** Strat Test Well
LAT: 31.2443390	**LONG:** -93.4916405	**System:** NAD 27	**Elevation:**

WORK PLAN:
This procedure has been developed for the plug and abandonment of a Class V stratigraphic test well with a 13-3/8" final cemented casing string set at 2,000' below ground level. Details contained in this procedure are subject to change based on conditions encountered while drilling.

Plug and Abandonment

1. **CONTACT LDENR PRIOR TO PLUGGING**
   a. **Billy Carnes – LDENR Inspector (225) 405-7470**
   b. **24 HOURS PRIOR TO PLUGGING**
   c. **Log in Daily Report**
2. Run in hole with drill pipe to 6,699'
3. Circulate and condition water based mud (WBM)
   a. WBM must be at least 9 ppg
4. Rig up cementing equipment
5. Plug #1
   a. Pump balanced corrosion resistant cement, or equivalent, plug from 6,399' to 6,699'
   b. Wait on cement (WOC) and tag plug to confirm placement
6. Plug #2
   a. Pump balanced corrosion resistant cement, or equivalent, plug from 5,019' to 5,319'
   b. WOC and tag plug to confirm placement
7. Plug #3
   a. Pump balanced cement plug from 4,631' to 4,931'
   b. WOC and tag plug to confirm placement
8. Plug #4
   a. Pump balanced cement plug from 3,717' to 4,017'
   b. WOC and tag plug to confirm placement
9. Plug #5 (Surface Casing Shoe)
   a. Pump balanced cement plug from 1,850' to 2,150'
   b. WOC, tag and pressure test plug to confirm placement
10. Install 13-5/8" 5M flange
11. Rig down and demobilize rig and equipment

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JUL 0 1 2024

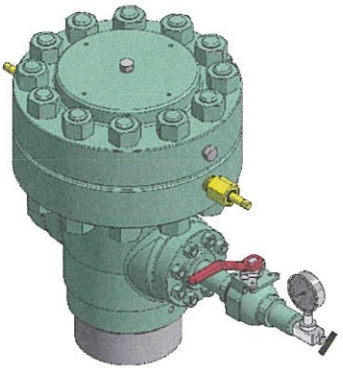
INJECTION AND MINING DIVISION

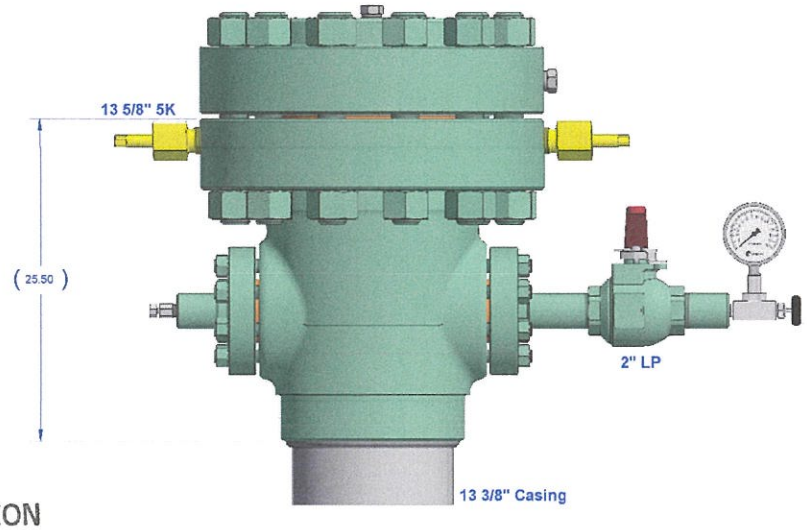
STATE OF LOUISIANA
WILLIAM HAROLD GEORGE
License No. 45286
PROFESSIONAL ENGINEER

PREPARED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE	Lonquist Sequestration, LLC
Roger Dugas	06/04/2024	William H. George, P.E.	06/04/2024			Louisiana License EF-7423

Appl. No. 044622

Proposed 13 5-8 Conventional Wellhead





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JAN 12 2024

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NOTE: This is a proposal drawing and dimensions shown are subject to change during the final design process.

13 5/8" 5K
Conventional

CLASS V STRATIGRAPHIC WELL PERMIT APPLICATION
AETHON ENERGY OPERATING, LLC
PINK DOGWOOD NO. 001
January 5, 2024

Appl. No. 044622

Annotated Type Logs

appl. no. 044622

EOG RESOURCES INCORPORATED

EOG RESOURCES INCORP

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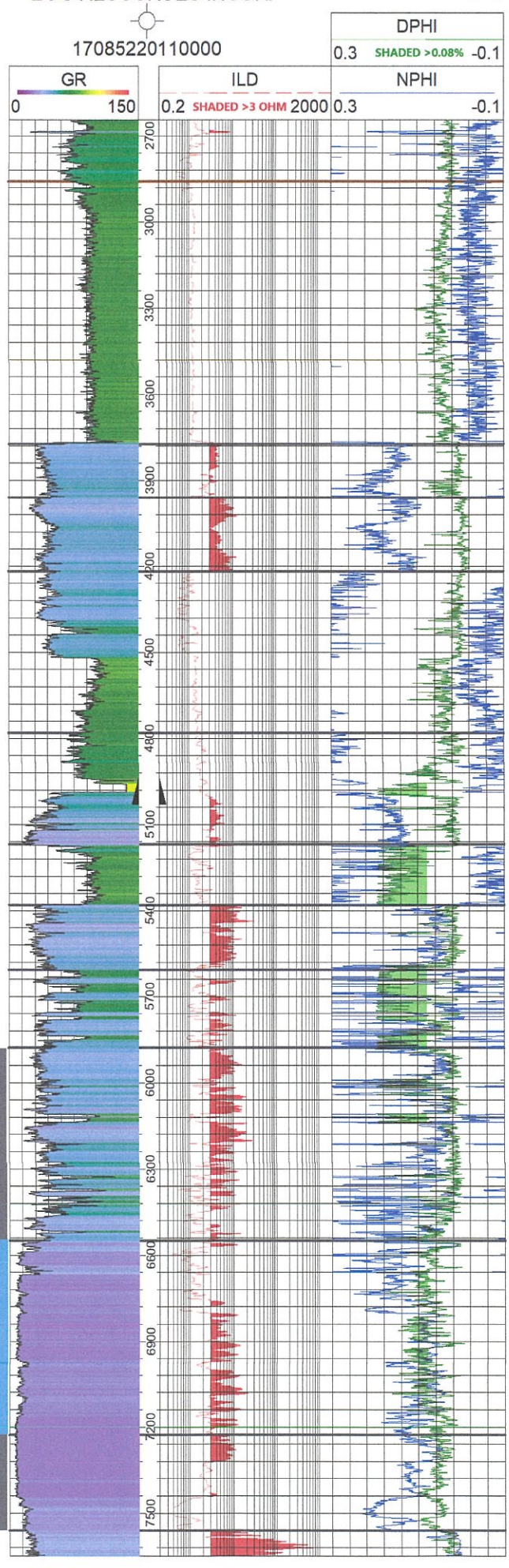

CONFINING INTERVALS

INJECTION INTERVAL

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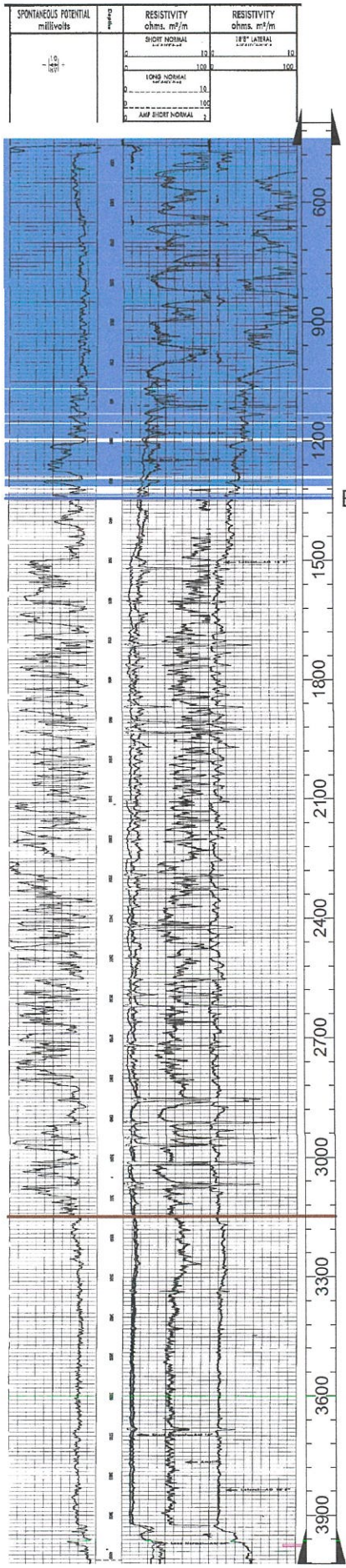
THE GORO CORPORATION

AHLINE SALTER 001

17085041570000

Appl. No. 044622



Blue shading represents deep resistivity >3 ohm

BASE USDW (1,343' MD)

MIDWAY SHALE

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INJECTION & MINING DIVISION

Aethon Energy Operating, LLC

Pink Dogwood 1

LONQUIST FIELD SERVICE

OPERATION: Plugging Operations — Date: TBD

Operator:	Aethon Energy Operating, LLC			LFS Labor:	$ 11,850.00
Well Name:	Pink Dogwood	Well No.:	1	Third Party Costs:	$ 75,500.00
Field Name:		API/SN:	TBD	LFS Management Fee 10%:	$ 7,550.00
Location:		County/Parish:	Sabine	0% Contingency:	$ -
State:	LA	Job Days:		9.08% Tax:	$ 6,855.40
Rig Contractor:	TBD	Project No:	LS177	**TOTAL:**	**$ 101,755.40**

LONQUIST FIELD SERVICE

SERVICE	CODE	ESTIMATE	COMMENTS
LFS Project Support	**01.00**		
Field Supervision	01.01	$8,400	Daylight Operation @ $2,100/day
Per Diem / Computer & Phone	01.04	$900	Per Diem / Computer & Phone
Mileage / Travel	01.05	$750	MOB/DEMOB Mileage
Project Engineer	01.07	$1,800	Project Management, Daily Reports, Vendor Coordination

THIRD PARTY

SERVICE	CODE	ESTIMATE	COMMENTS
Drilling/Workover Rig	**02.00**		
Workover Rig Rate	02.02	$24,000	Workover Rig Rate @ $8,000/day
Mob/Demob	02.03	$10,000	Drilling Rig - MOB/DEMOB
Fluids	**04.00**		
Drilling Fluids	04.01	$1,000	Plugging Fluids
Cement	**05.00**		
Primary Cement	05.01	$6,000	Plug 6 Cement Class H, Plug 7 Cement Class H
Misc Cement	05.99	$14,000	P&A Cementing Services
Services	**12.00**		
Inspections	12.04	$1,500	
Trucking	12.11	$6,000	Misc Trucking
Welding	12.12	$2,500	
Rentals	**13.00**		
Chart Recorder	13.04	$200	4 Days @ $50/day
Forklift	13.06	$1,100	12K Forklift $275/day
Work String	13.19	$2,000	4 Days @ $500/day
Port-o-Potty	13.21	$200	4 Days @ $50/day
Disposal	**14.00**		
Vac Truck	14.02	$4,000	
Misc Disposal	14.99	$3,000	Mud Disposal at commercial facility

Prepared By	Date	Approved By	Date	Lonquist Field Service, LLC
Connor Lofton	4/10/2024	WHG	4/10/2024	Louisiana Registered Firm No. EF-7423

OFFICE OF CONSERVATION

044022

APR 16 2024

INJECTION & MINING DIVISION

STATE OF LOUISIANA
WILLIAM HAROLD GEORGE
License No. 45286
PROFESSIONAL ENGINEER

LONQUIST SEQUESTRATION LLC	Plug and Abandonment Prognosis	Project No.: LS177
	Aethon Energy Operating, LLC Pink Dogwood No. 001 Plug and Abandon Prognosis	Date: February 2024
		Page: 1 of 1

Well: Pink Dogwood No. 001	**State:** Louisiana	**Parish:** Sabine	**Field:**
Well API#: TBD	**Oper:** Aethon Energy	**Location:** S28 T6N R11W	**Status:** Class V
TD: 7,930'	**Casing:** 13-3/8"	**Casing Shoe:** 2,000'	**Service:** Strat Test Well
LAT: 31.2443390	**LONG:** -93.4916405	**System:** NAD 27	**Elevation:**

WORK PLAN:
This procedure has been developed for the final plug and abandonment of a Class V stratigraphic test well with a 13-3/8" final cemented casing string set at 2,000' below ground level and temporarily abandoned. Details contained in this procedure are subject to change based on conditions encountered while drilling.

Plug and Abandonment

1. **CONTACT LDENR PRIOR TO PLUGGING**
   a. **Billy Carnes – LDENR Inspector (225) 405-7470**
   b. **24 HOURS PRIOR TO PLUGGING**
   c. **Log in Daily Report**
2. Move in rig up (MIRU)
3. Run in hole and tag plug 5
4. Pressure and pressure test plug 5 to confirm placement
5. Circulate and condition water based mud (WBM)
   a. WBM must be at least 9 ppg
6. Pull out of hole to 1,390'
7. Rig up cementing equipment
8. Plug #6
   a. Pump a balanced cement plug from 1,293' to 1,393'
   b. Wait on cement (WOC) and tag plug to confirm placement
   c. Pressure test plug to 300 psi for minimum of 30 minutes
9. Pull out of hole to 30'
10. Plug #7
    a. Pump a balanced cement plug from 0 to 30'
11. Cut casing at least 5 ft below ground level and weld on ½ in. steel plate
12. Rig down and demobilize rig and equipment
13. Perform site closure requirements

OFFICE OF CONSERVATION

MAR 28 2024

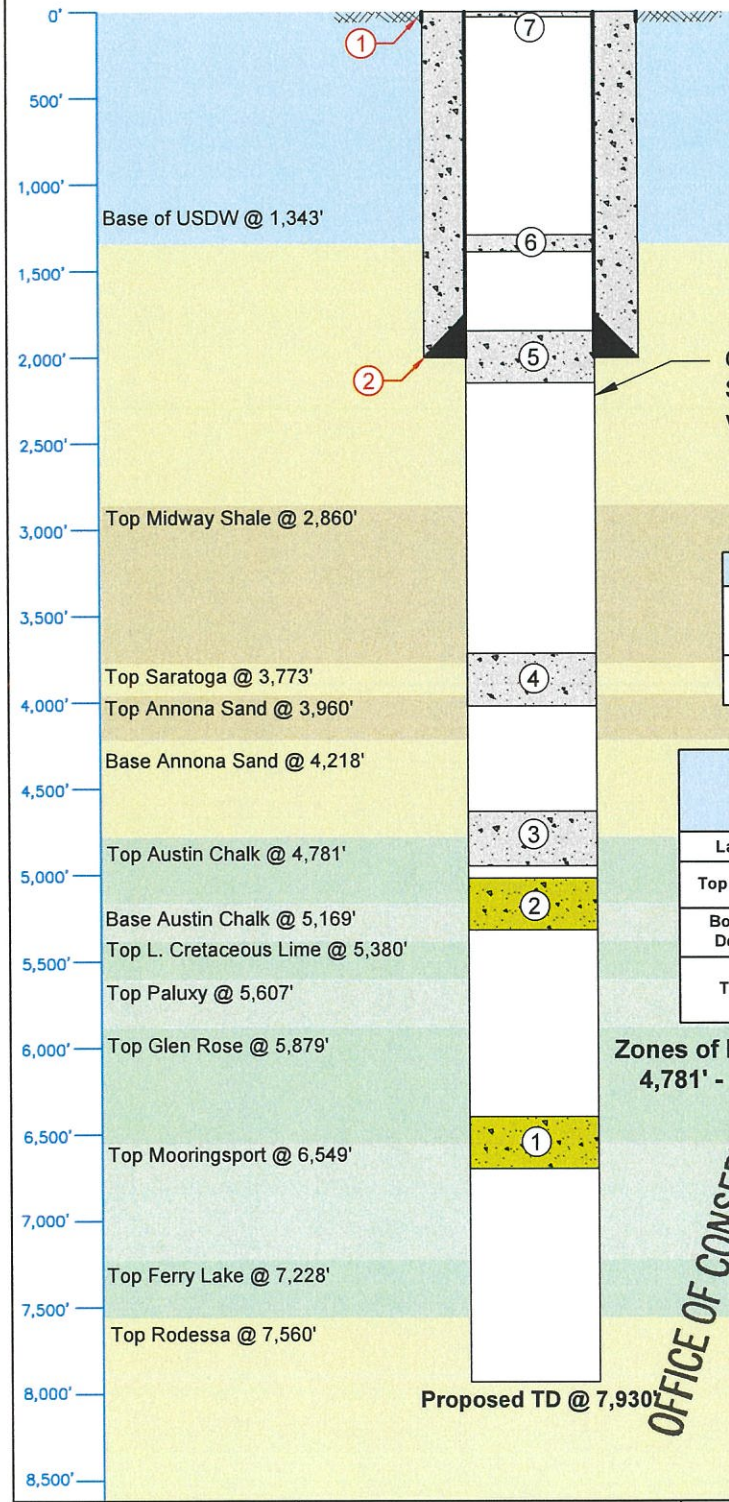
INJECTION & MINING DIVISION

044022

STATE OF LOUISIANA
WILLIAM HAROLD GEORGE
License No. 46286
PROFESSIONAL ENGINEER

PREPARED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE	Lonquist Sequestration, LLC
Roger Dugas	2/28/2024	William H. George, P.E.	2/28/2024			Louisiana License EF-7423

Application No. 044622



Open Hole & Cased Sections will be filled w/ 9.0 ppg WBM

Zones of Interest:
4,781' - 7,560'

Casing/Tubing Information

Label	1	2
Type	Conductor	Surface
OD	20"	13-3/8"
ID	-	12.615"
Drift ID	-	12.459"
COD	-	14.375"
Weight	-	54.5 lb/ft
Grade	-	J55 BTC
Hole Size	NA	17-1/2"
Depth Set	60'	2,000'
TOC	NA	Lead: Surface Tail: 1,000'
Cement Type	NA	Class H Blend
Volume	NA	Lead: 1,366 ft^3 / 853 sks Tail: 1,428 ft^3 / 1,210 sks
Cement Yield	NA	Lead: 1.6 ft^3/sk Tail: 1.18 ft^3/sk
% Excess	NA	100% OH

Coring Points

Core Interval #1	5,400' - 5,680'
Core Interval #2	6,600' - 7,630'

Plug Information

Label	1	2	3	4	5	6	7
Top Depth	6,399'	5,019'	4,631'	3,717'	1,850'	1,293'	0'
Bottom Depth	6,699'	5,319'	4,931'	4,017'	2,150'	1,393'	30'
Type	Corrosion Resistant	Corrosion Resistant	Class H	Class H	Class H	Class H	Class H

OFFICE OF CONSERVATION
JUL 01 2024
INJECTION AND MINING DIVISION

STATE OF LOUISIANA
WILLIAM HAROLD GEORGE
License No. 45286
PROFESSIONAL ENGINEER

LONQUIST SEQUESTRATION LLC

12912 Hill Country Blvd. Ste F-200
Austin, Texas 78738
Tel: 512.732.9812
Fax: 512.732.9816

Louisiana License EF-7423

Aethon Energy Operating, LLC	Pink Dogwood No. 001 Plug & Abandon	
Country: USA	**State/Province:** Louisiana	**County/Parish:** Sabine
Location: 31.4662290, -93.4916405	**District:**	**S/T/R:** 28-6N-11W
API No:	**Field:** 044622	**Well Type/Status:**
Serial No:	**Project No:** LS177	**Date:** 1/19/2024
Drawn: Connor Lofton	**Reviewed:** Roger Dugas	**Approved:** William H. George, P.E.
Rev No: 0	**Notes:**	

Application No. 044622

AETHON

Via E-mail (info@la.gov)

Mr. Patrick Ragan
Injection and Mining Division
Louisiana Office of Conservation
617 North Third Street
Baton Rouge, Louisiana 70802

OFFICE OF CONSERVATION

FEB 19 2024

INJECTION & MINING DIVISION

February 12, 2024

Re: Aethon Energy Operating LLC Application No. 44622 (Pink Dogwood No. 001, Class V Stratigraphic Test Well) Responses to IT Analysis Questions

Dear Mr. Ragan,

On October 20, 2023, Aethon Energy Operating LLC ("Aethon") applied to drill and complete a Class V stratigraphic test well, the Pink Dogwood No. 001 (Application No. 44622), in Sabine Parish. The proposed well is intended to collect additional subsurface information that will aid in evaluating the appropriateness of the geographic area for subsurface carbon dioxide sequestration. Thereafter, on January 18, 2024, Aethon received a Notice of Deficiencies, which included, among other things, a request to provide responses to the five questions that comprise a full IT analysis. Accordingly, Aethon provides the following answers.

1. **Have the potential and real adverse environmental effects of the proposed project been avoided to the maximum extent possible?**

The potential and real adverse environmental effects of Aethon's proposed Class V stratigraphic test well have been minimized or avoided to the maximum extent possible. After evaluation, Aethon has determined that there are no "real adverse environmental effects" from the proposed project. Nevertheless, Aethon evaluated the potential adverse environmental effects of the proposed project throughout the proposed project's development. (These are discussed further in response to IT Question No. 2.) Aethon implemented mitigation measures to minimize or avoid, to the maximum extent possible, these potential adverse environmental effects, as evidenced by Aethon's commitment to the following activities:

1. Refraining from conducting injectivity testing or otherwise injecting fluid into the proposed Class V stratigraphic test well.
    a. Aethon solely intends to use the well to collect cores and logging via wireline instruments, without injectivity testing.
        i. In line with this, the well will be open-hole completed at this stage, as reflected in the application.
    b. After drilling, the proposed well will be temporarily abandoned with cement plugs back to the surface casing.
2. Protecting the underground sources of drinking water (USDW) by setting surface casing in a shale at least 700' below the lowermost USDW formation and cementing the casing to surface in accordance with all applicable policies and regulations.
    a. The appropriate open-hole logs will be run and submitted to Louisiana Department of Energy and Natural Resources (LDENR)–Injection & Mining Division (IMD) for USDW determination prior to setting surface casing.

3. Setting the surface casing depth and size in such a manner to meet all, potential future options for the well, including if Aethon seeks to convert the stratigraphic test well into either a monitoring well or into an in-plume Class VI injection well.

    a. After drilling the well, Aethon will plug the well back to the surface casing using acid-resistant cement plugs. The acid-resistant cement plugs eliminate the risk of compromising the integrity of the plugs from any future, sequestered carbon dioxide.

    b. Aethon will then determine the viability of converting the stratigraphic test well into either a monitoring well or an in-plume Class VI injection well after evaluating the coring and logging results.

        i. Ultimately, if the proposed stratigraphic test well will not be converted, Aethon will plug the remaining portion of the proposed stratigraphic test well through use of a surface plug to cap the surface casing.

4. Mitigating any environmental pollution from stormwater runoff by filing a Notice of Intent for coverage under the Storm Water General Permit for Large Construction Activities with the Louisiana Department of Environmental Quality, which also requires the submission of a Stormwater Pollution Prevention Plan.

5. Implementing a closed-loop drilling system with waste disposal occurring at an appropriate disposal facility. A closed-loop drilling system will retain all drilling fluids, drilling mud, and drill cuttings, which will be collected for offsite disposal by a licensed and permitted third-party waste collection service. Aethon will also apply for any required Louisiana Department of Environmental Quality (LDEQ) approvals if it will be deemed a generator or transporter of such waste.

6. Utilizing the U.S. Fish & Wildlife Service's Information Planning and Consultation tool to detect any species listed or proposed for listing under the Endangered Species Act. Aethon will provide recommendations to avoid or mitigate impacts associated with any identified threatened or endangered species.

2. Does a cost benefit analyses of the environmental impact costs versus the social and economic benefits of the proposed project demonstrate that the latter outweighs the former?

Yes. A cost benefit analysis demonstrates that the social and economic benefits outweigh the environmental impact costs. Identifying potential locations for geologic sequestration of carbon dioxide will benefit society by enabling carbon capture and sequestration projects to reduce the emission of greenhouse gases into the atmosphere, as well as allowing for the continued development of low-carbon industrial and energy sites. Encouraging the development of such sites will provide economic benefits to Louisiana in the form of continued job and tax growth, as well as sustaining existing infrastructure in the energy sector. Identifying and studying potential locations for such sequestration is a necessary first step in the development of this critical tool against global warming.

The primary, potential environmental impact costs associated with the Class V well include (1) potential USDW endangerment and (2) potential pollution from drilling activities. Both potential impact costs have been minimized or avoided to the maximum extent possible by the fact that no injectivity testing will be done in connection with the proposed Class V well, by drilling the proposed Class V well below the lowermost USDW, and by implementing a closed-loop drilling system with waste disposal occurring at an appropriate disposal facility, among other things.

The fundamental purpose and benefit of the proposed Class V well is to collect geologic data required to fully evaluate the feasibility of the geologic sequestration of carbon dioxide in the vicinity of this location. (A Class V permit will not authorize the use of the well for the injection of carbon dioxide, and the permit will not authorize any waste disposal via injections using this well.) Aethon has already completed

preliminary assessments utilizing all publicly available data; however, site-specific data is not currently available. The proposed Class V well will serve the purpose of gathering the required site-specific data by collecting cores and wireline logging, which cannot be acquired via other means. The drilling and subsequent data collection and testing through this proposed Class V well is necessary for an adequate assessment of a potential future carbon dioxide sequestration project, which is a type of project that the Louisiana Legislature has expressly and unambiguously determined to be favored as a matter of Louisiana public policy.[1] Moreover, support for carbon dioxide sequestration is also found in Louisiana's Climate Action Plan, which offers, as recommended action item 5.3, "[s]upport [for] the safe and responsible deployment of carbon capture . . . and storage for high-intensity and hard-to-abate emissions."[2]

3. Are there alternative projects which would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits?

The proposed project has been carefully planned to evaluate the feasibility of developing a carbon dioxide sequestration project within a particular subsurface geology. There are no alternative projects to constructing a stratigraphic test well that will allow for the testing of subsurface geology to determine suitability for carbon dioxide sequestration.

4. Are there alternative sites which would offer more protection to the environment than the proposed site without unduly curtailing non-environmental benefits?

The site location for the proposed Class V well has been selected to acquire the required site-specific subsurface information needed to perform a proper feasibility assessment for developing a carbon dioxide sequestration project in the immediate vicinity of the proposed Class V well. The site has also been selected to avoid potential impacts to wetlands and coastal zones.

Because the purpose of the proposed stratigraphic test well is to gather subsurface, geologic data in the vicinity of the potential carbon dioxide sequestration site, requiring Aethon to consider alternatives far removed from the potential sequestration site would frustrate the purpose of the project. Neither LDENR nor Aethon is required to consider alternatives that would "unduly curtail[] non-environmental benefits" of the project.[3] The U.S. District Court for the Eastern District of Louisiana recognized that an applicant's "purpose of constructing a test well to obtain data regarding a specific target formation ... would be thwarted if the test well could not be constructed within the area known to contain the target formation.[4] The court went on to explain that "it was within the Corps' discretion to consider alternatives only within the area containing the target formation."[5] Accordingly, LDENR is not required to consider sites that would prevent the collection of subsurface data in the vicinity of the potential carbon dioxide sequestration site.

The location for the proposed stratigraphic test well was chosen over other alternative sites within the area of interest in light of potential environmental impacts and other factors. The chosen location for the proposed test well is ideally located within the reservoir, particularly because aerial surveying is limited for the specific location. Furthermore, Aethon adjusted the location to avoid potential impact to wetlands and coastal zones, in addition to accounting for potential drainage. The location also has limited visibility to adjacent landowner from publicly-accessible roadways. Finally, because the chosen location is located on

---

[1] *See* La. R.S. § 30:1102(A) ("It is declared to be in the public interest for a public purpose and the policy of Louisiana that . . . [t]he geologic storage of carbon dioxide will benefit the citizens of the state and the state's environment by reducing greenhouse gas emissions.").

[2] Louisiana Climate Action Plan (February 2022), p. 60, found at Climate Action Plan FINAL 3.pdf (louisiana.gov). The Louisiana Climate Action Plan further states:

> CCUS is anticipated to play a critical role in decarbonizing the global economy by addressing high-intensity and hard-toabate emissions that will be necessary to reach net zero. With expansive geologic storage potential, highly concentrated industrial corridors, and a trained workforce, Louisiana has potential for deployment of this technology and infrastructure. This is particularly true in the industrial sector, where high temperature processes cannot be readily transitioned to electrification or low-carbon alternatives and where process emissions from chemical reactions are unavoidable except with CCUS.

[3] *In re Rubicon*, 95-108, p. 8 (La. App. 1 Cir. 2/14/96); 670 So. 2d 475, 482 (quoting *Blackett v. Louisiana Department of Environmental Quality*, 506 So. 2d 749, 754 (La. App. 1 Cir. 1987) (internal quotation marks omitted).

[4] *Town of Abita Springs v. U.S. Army Corps of Eng'rs*, 153 F. Supp.3d 894, 921 (E.D. La. 2015).

[5] *Id.*

land owned by a timber company, there is existing access to the proposed site along a logging road, which will help limit the construction needed as part of the proposed project.

Aethon's plan for the future utility of the well, as outlined in the application, is to possibly convert the well to a monitoring well or an in-plume Class VI injection well, if the data and test results obtained from the proposed stratigraphic test well demonstrate that the site would be suitable for geologic sequestration of carbon dioxide. Any such conversion would be subject to future regulatory approval(s) of a carbon dioxide sequestration project and Class VI injection well. Therefore, the well location within the area of interest was also selected as an appropriate monitoring well and in-plume Class VI injection well location based upon initial reservoir modeling results. In so doing, Aethon hopes to minimize the number of additional wells that may be needed to support a possible future sequestration project. Ultimately, if the well will not be used as either a monitoring well or in-plume Class VI injection well, the stratigraphic test well will be plugged and abandoned in compliance with all regulatory requirements for same.

Due to the foregoing reasons for the specific site selection, there are no alternative sites which would offer more protection to the environment without unduly curtailing non-environmental benefits and otherwise compromising the purpose of this proposed Class V well.

5. **Are there mitigating measures which would offer more protection to the environment that the proposed project without unduly curtailing non-environmental benefits?**

As outlined in Question 1 and re-iterated here, the potential adverse environmental effects of Aethon's proposed Class V well have been minimized to the maximum extent possible. Environmental risks were considered throughout the proposed project development and mitigation measures are evident in Aethon's commitment to the following activities:

1. Refraining from conducting injectivity testing or otherwise injecting fluid into the proposed Class V stratigraphic test well.
    a. Aethon solely intends to use the well to collect cores and logging via wireline instruments, without injectivity testing.
        i. In line with this, the well will be open-hole completed at this stage, as reflected in the application.
    b. After drilling, the proposed well will be temporarily abandoned with cement plugs back to the surface casing.
2. Protecting the underground sources of drinking water (USDW) by setting surface casing in a shale at least 700' below the lowermost USDW formation and cementing the casing to surface in accordance with all applicable policies and regulations.
    a. The appropriate open-hole logs will be run and submitted to LDENR–IMD for USDW determination prior to setting surface casing.
3. Setting the surface casing depth and size in such a manner to meet all, potential future options for the well, including if Aethon seeks to convert the stratigraphic test well into either a monitoring well or into an in-plume Class VI injection well.
    a. After drilling the well, Aethon will plug the well back to the surface casing using acid-resistant cement plugs. The acid-resistant cement plugs eliminate the risk of compromising the integrity of the plugs from any future, sequestered carbon dioxide.
    b. Aethon will then determine the viability of converting the stratigraphic test well into either a monitoring well or an in-plume Class VI injection well after evaluating the coring and logging results.

i. Ultimately, if the proposed stratigraphic test well will not be converted, Aethon will plug the remaining portion of the proposed stratigraphic test well through use of a surface plug to cap the surface casing.

4. Mitigating any environmental pollution from stormwater runoff by filing a Notice of Intent for coverage under the Storm Water General Permit for Large Construction Activities with the Louisiana Department of Environmental Quality, which also requires the submission of a Stormwater Pollution Prevention Plan.

5. Implementing a closed-loop drilling system with waste disposal occurring at an appropriate disposal facility. A closed-loop drilling system will retain all drilling fluids, drilling mud, and drill cuttings, which will be collected for offsite disposal by a licensed and permitted third-party waste collection service. Aethon will also apply for any required LDEQ approvals if it will be deemed a generator or transporter of such waste.

6. Utilizing the U.S. Fish & Wildlife Service's Information Planning and Consultation tool to detect any species listed or proposed for listing under the Endangered Species Act. Aethon will provide recommendations to avoid or mitigate impacts associated with any identified threatened or endangered species.

Based upon the aforementioned, there are no mitigating measures which offer more protection to the environment than the Class V well as proposed, without unduly curtailing the non-environmental benefits.

Sincerely,

Aaron Wimberly,
Chief Health, Safety and Environmental Officer