FACT SHEET

Applicant:	AIR PRODUCTS BLUE ENERGY, LLC 1940 Air Products Blvd. Allentown, PA 18106 (610) 481-1237
Project Proposal:	Permit to drill and complete one Class V Stratigraphic Test (Injection) Well
Type of Facility:	N/A
Well Names:	Maurepas S TST DM #1 Well No. 001
Project Location:	Lake Maurepas at St. John the Baptist Parish
Facility Local Address:	16044 Highway 43 Building 103 Prairieville, LA 70769
Application No.:	43366
Docket No.:	IMD 2022-03

Project Summary: The following information is prepared according to the requirements of Statewide Order No. 29-N-1, (LAC 43:XVII, Subpart 1) to briefly set forth the principal facts and significant policy questions considered in preparing a draft permit concerning an application by Air Products Blue Energy (Air Products) to drill one Class V stratigraphic test (injection) well in St. John the Baptist Parish, Louisiana.

The application is for the drilling and completion of one proposed Class V stratigraphic test (injection) well. The total depth of the well is at a depth of approximately 9,168 feet below ground level.

The acquisition of geotechnical data is proposed to occur in the drilling and completion of this well. No disposal of waste via injection will occur.

General Information: Air Products proposes to collect geotechnical cores, fluid samples, static pressure measurements, and other applicable information.

The base of the lowermost underground source of drinking water (USDW) is approximately 3,400 feet below ground level. There are no registered water wells located within a one mile radius of the proposed well location. The principal regional aquifers in the area comprise of the confined Norco Aquifer and the confined Gonzales-New Orleans Aquifer below.

The complete application consists of the application form (Form UIC-25 Stratigraphic Test); technical attachments describing the geology, hydrology, construction, completion, operation of the well; injection fluid analysis; and financial responsibility estimate.

The draft permit conditions were based on applicable rules and regulations as set forth in Statewide Order No. 29-N-1 (LAC: 43:XVII, Subpart 1) as amended. Such rules provide for the protection and non-endangerment of USDW regarding the permitting, drilling, completing, operating and maintaining of Classes I (nonhazardous waste), III, IV, and V injection well operations in the State of Louisiana.

Application Locations: An application package is available for inspection at the Louisiana Office of Conservation, Injection and Mining Division, LaSalle Building, 617 North Third Street, Room 817, Baton Rouge, LA 70802 from 8:00 am until 4:30 pm, Monday through Friday. To view, please ask for the Air Products Class V Permit Application identified at the beginning of this document. The application package is also available at the Louisiana Department of Natural Resources, Office of Conservation website.

For information regarding the public hearing or any information concerning the application, refer to the Public Notice for Docket No. IMD 2022-03, or call Laura Sorey at (225) 342-5581, Monday through Friday, between the hours of 8:00 a.m. to 4:30 p.m.

Comment Period: The public comment period officially commences November 18, 2022, at 8:00 a.m. and concludes December 21, 2022, at 4:30 p.m. Submit all comments in writing to Mr. Stephen H. Lee, Louisiana Office of Conservation, Injection and Mining Division, 617 N. 3rd St, Baton Rouge, LA 70802. Comments may also be e-mailed to Info@la.gov. Please reference Air Products Blue Energy, LLC Class V Permit, Application Number 43366, Docket No. IMD 2022-03.

Public Hearing: The public hearing will be held December 20, 2022, 6:00 pm at the LaBelle Hearing Room, 1st Floor, LaSalle Building, 617 North 3rd St, Baton Rouge, LA 70802.

JOHN BEL EDWARDS
GOVERNOR

THOMAS F. HARRIS
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF CONSERVATION

RICHARD P. IEYOUB
COMMISSIONER OF CONSERVATION

_____ __, 2022

Kimberly Goslin
Air Products Blue Energy, LLC (A10206)
1904 Air Products Blvd.
Allentown, PA 18106

RE: Application No. 46633/Stratigraphic Test Well
Maurepas S TST DM #1 Well No. 001
Lake Maurepas Field – St. John the Baptist Parish

Serial No. _____
API No. _____

Dear Ms. Goslin:

The application by Air Products Blue Energy, LLC (Air Products) 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 _____ __, 2023.

Air Products is to notify the Conservation Enforcement Specialist (CES) for St. John the Baptist Parish, Eric Gauthreaux at (209) 406-2727, Monday through Friday, or by calling the Injection and Mining Division at (225) 342-5515 at least 72 hours prior to commencement of work. At least 48 hours before the casing test of the long string, contact the CES to schedule a witnessed casing test.

Within twenty (20) days after completion of the work, please an original copy of a Class V Well History and Work Resume Report (Form UIC-42) documenting the work conducted.

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,

Richard P. Ieyoub
Commissioner of Conservation

Stephen H. Lee, Director
Injection and Mining Division

*****DRAFT PERMIT No. IMD 2022-03*****

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.	**TBD**	Serial No.	**TBD**
CES Name	**Eric Gauthreaux (Area 7)**	CES Phone No.	**(209) 406-2727 (Area 7)**

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) 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.

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

*****DRAFT PERMIT No. IMD 2022-03*****

43366
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UIC-25 Stratigraphic Test

CLASS-V WELL PERMIT APPLICATION

~~Invoice 1259177~~ PR

1. APPLICATION TYPE: (Check One)	LOUISIANA DEPARTMENT OF NATURAL RESOURCES - OFFICE OF CONSERVATION
☑ DRILL AND COMPLETE NEW CLASS-V WELL ☐ CONVERT AN EXISTING WELL TO CLASS-V ☐ OTHER (SPECIFY):	**INJECTION & MINING DIVISION** **Injection-Mining@la.gov** **(225) 342-5515**

2. IDENTIFY WELL USE	
Stratigraphic Test Well and Potential Deep Monitor Well	
3. OWNER/OPERATOR NAME AIR PRODUCTS BLUE ENERGY, LLC	**4. OC OPERATOR CODE** A10206
5. OWNER/OPERATOR MAILING ADDRESS 16044 Hwy 73, Building 103	**6. CITY, STATE, ZIP CODE** Prairieville, LA 70769
7. TELEPHONE NO 1(610)481-1237	**8. E-MAIL ADDRESS** goslinkl@airproducts.com
9. WELL NAME Maurepas S TST - DM#1	**10. WELL NO** 1
11. WELL SERIAL NO (Well Conversions Only)	
12. FIELD NAME (if known) Lake Maurepas	**13. FIELD CODE (if known)** 5434
14. PARISH NAME St. John the Baptist	**15. SECTION** N/A
16. TOWNSHIP N/A	**17. RANGE** N/A

18. LOUISIANA COORDINATE ZONE (Check One)	For Item Numbers 19 Through 24, Give Coordinates in Louisiana Coordinate System 1927 and 1983
☐ NORTH ZONE ☑ SOUTH ZONE	

19. LATITUDE (NORTH) NAD 1927	20. LONGITUDE (WEST) NAD 1927	21. LOUISIANA LAMBERT (X-Y) COORDINATES (NAD 1927)
30°12'32.01" N	90°29'28.40" W	X: 2,266,000.01' Y: 561,800.99'
22. LATITUDE (NORTH) NAD 1983	**23. LONGITUDE (WEST) NAD 1983**	**24. LOUISIANA LAMBERT (X-Y) COORDINATES (NAD 1983)**
30°12'32.73" N	90°29'28.71" W	X: 3,546,800.06' Y: 622,509.25'

25. 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
LDNR OCM	P20220390
USACE	MVN-2011-03218-CQ (P20220390)
	OFFICE OF CONSERVATION

NOV 07 2022

INJECTION & MINING DIVISION

~~043705~~
43366 PR

26. WELL CASING / CEMENT DATA

HOLE SIZE (inches)	CASING SIZE (OD - inches)	CASING WEIGHT (lb/ft)	CASING GRADE	CASING/LINER SETTING DEPTHS TOP (feet)	CASING/LINER SETTING DEPTHS BOTTOM (feet)	SACKS CEMENT	TYPE CEMENT/ YIELD (ft^3/sack	CEMENT TOP (feet)
20	20	209.06	X-52	0	200	N/A	DRIVEN	N/A
17-1/2	13-3/8	67	L80	0	3587	1603/1213	LiteCrete/Class H 2.26/1.11	0
12-1/4	9-5/8	47	L80/G3-110	0	5620	412/137/1090	Class H/Class H/EverCRETE 2.74/1.15/1.18	0
8-1/2	5-1/2	17	L80/25CRW-80/L80	0	9168	554/1146	LiteCrete/EverCRETE 2.26/1.18	0

27. BASE OF USDW	28. WELL TOTAL DEPTH	29. WELL PLUGBACK DEPTH	30. TUBING SIZE & DEPTH	31. PACKER SIZE & DEPTH
3400	9168	9168	N/A	N/A

32. INJECTION ZONE DEPTHS (if applicable)
Top: N/A Bottom: N/A

33. COMPLETION/PERFORATION DEPTHS (if applicable)
Top: N/A Bottom: N/A

34. WELL COMPLETION (Check One)
☐ OPEN HOLE ☐ PERFORATIONS ☐ SCREEN

INJECTIVITY TEST INFORMATION (if applicable)

35. TEST MATERIAL (e.g. nitrogen, brine, etc):
CO2 is prohibited as a Class V test material

36. MAXIMUM TEST PRESSURE (psi):

37. TOTAL INJECTION VOLUME:

38. Is the Well Located on Indian Lands or Other Lands Owned by or under the Jurisdiction or Protection of the Federal Government? ☐ YES ☑ NO

39. 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

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

NAME: _____

MAILING ADDRESS: _____

CITY, STATE, ZIP CODE: _____

TELEPHONE NUMBER: _____ FAX NUMBER: _____

E-MAIL ADDRESS: _____

41. CERTIFICATION BY WELL OWNER/OPERATOR

I certify that as the owner/operator of the injection well, the person identified in Item No. 40 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)
Kimberly Goslin	Vice President, Air Products Blue Energy, LLC

Signature of Well Owner/Operator [signature]

Date 11/04/22

OFFICE OF CONSERVATION

NOV 07 2022

INJECTION & MINING DIVISION

43366
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pr

I. SUBMIT THE FOLLOWING AS A COMPLETE APPLICATION PACKAGE FOR A CLASS-V WELL:

A. Application Fee: Submit the non-refundable application fee for each well per LAC 43:XIX.Chapter 7.

B. Include the following as applicable:

1. One Form UIC-25 with original signature;
2. Two original Form MD-10-R-A for each existing well to be converted (if conversion is proposed);
3. One original Certified Location Plat showing the location of each Class-V well location;
   a. Please be sure to comply with the requirements of the IMD-GS-10 Policy
4. Injection test fluid analysis (if injection is proposed);
5. An annotated copy of an electric well log of the nearest offset well that shows the Underground Source of Drinking Water (USDW);
6. An annotated copy of an electric well log of the nearest offset well that shows the proposed injection zone (if injection is proposed);
7. Work prognosis for drilling, completing, and testing the well;
8. Schematic(s) of the Class-V well showing:
   a. Casing diameter, specifications, material (PVC, steel, etc.), and depth,
   b. Screen type, length, material, slot or opening size,
   c. Injection tubing size inside casing (if any),
   d. Hole diameter (bit size),
   e. Amount and type of cement used and depths to top and bottom of cement,
   f. Wellhead showing all fittings,
   g. Discharge line diameter and connection to wellhead,
   h. Well house (if any).
   Schematics should be stamped and signed by a Louisiana-registered Professional Engineer (PE) as appropriate

II. REQUIREMENTS OF A PERMIT APPLICATION FOR CLASS-V INJECTION WELL:

A. Operating a Class-V well without a permit is a violation of Statewide Order No. 29-N-1 (LAC 43:XVII, Subpart 1) and may subject. the well owner to enforcement action including fines as provided by La. R.S. 30. No fines will be imposed on the owner of an existing unpermitted injection well provided the owner submits an application for a permit. However, repairing, stimulating, plugging or performing other work on a Class-V well without a work permit (Form UIC-17) may subject the well owner to a fine.

B. After completing the Class-V well, a permanent, weather-proof sign not less than 1 foot by 2-foot in size must be erected within ten feet of the well, which, at a minimum shows the Well Name and Office of Conservation issued Well Serial Number. If the Class-V well is enclosed within a well house, the sign may be inside the well house, if it is prominently visible upon entering.
After completing the Class-V well, complete and submit the Form UIC-42, Well History and Work Résumé Report.

C. When abandoning, the well must be plugged in accordance with Office of Conservation guidelines in effect at the time of abandonment.

OFFICE OF CONSERVATION

NOV 07 2022

INJECTION & MINING DIVISION

The Injection & Mining Division can be reached by telephone at 225-342-5515 or email Injection-Mining@la.gov.

You may submit the application with all required attachments online at www.sonris.com via the Online UIC Reporting Portal, or submit the completed application form with all required attachments to:

Mailing Address

Office of Conservation Injection & Mining Division
617 North Third Street
Baton Rouge, LA 70802-5428

Street Delivery Address

Office of Conservation
Injection & Mining Division
LaSalle Building
617 North Third Street, Suite 817
Baton Rouge, LA 70802-5428

Certified Location Plat
Separate doc

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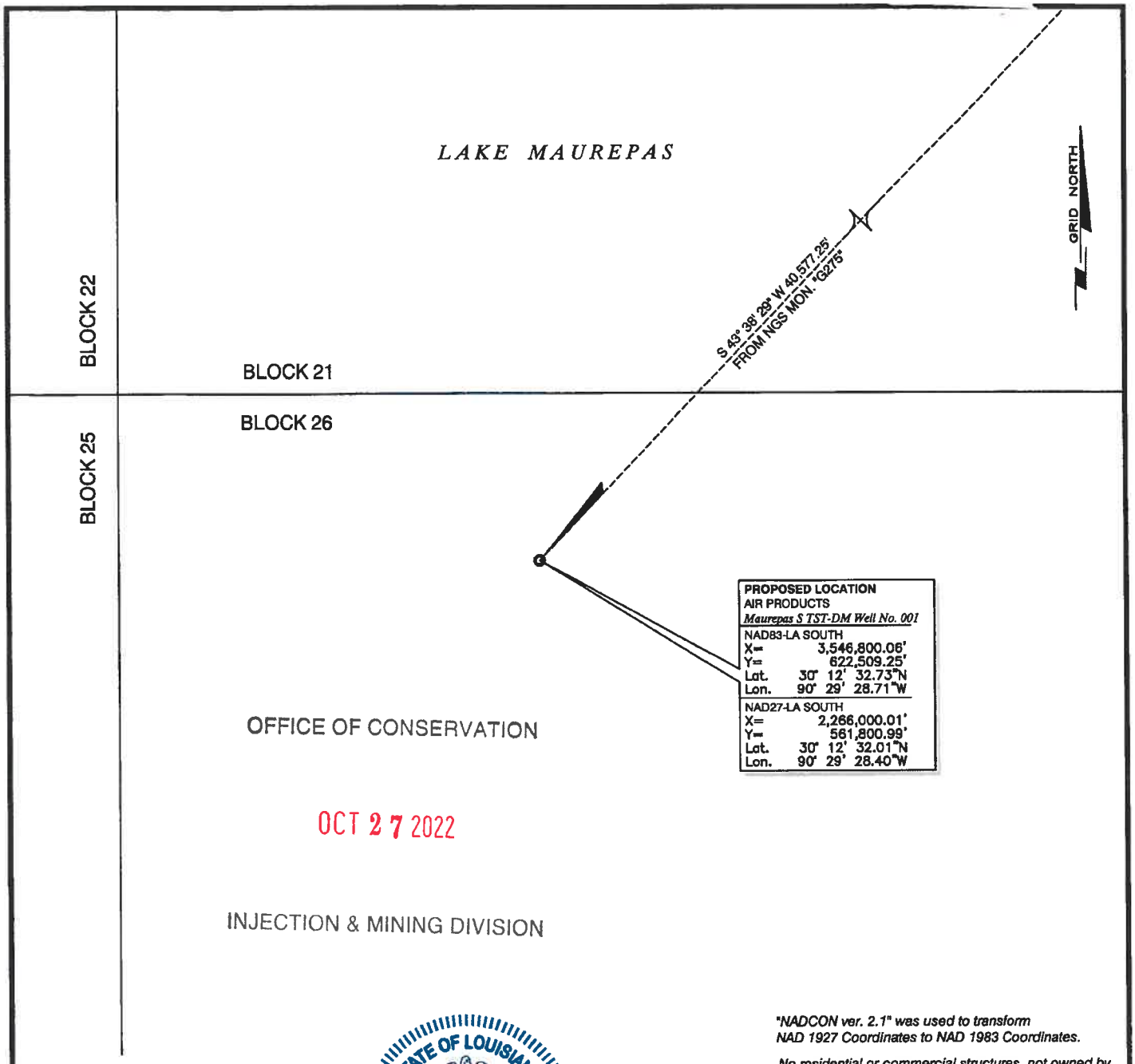


OFFICE OF CONSERVATION

OCT 27 2022

INJECTION & MINING DIVISION

"NADCON ver. 2.1" was used to transform NAD 1927 Coordinates to NAD 1983 Coordinates.

No residential or commercial structures, not owned by applicant, his lessor, or other predecessor in interest, were situated within a 500' radius of this location.

I, David L. Cormier, Professional Land Surveyor, certify that the well location depicted and described in this plat was staked and surveyed in the field by me or under my direction with the accuracy and precision to the nearest foot. I have properly examined this plat and have determined that it complies with existing local Louisiana codes, and has been properly site adapted to use in this area.

STATE OF LOUISIANA
DAVID LESLIE CORMIER
REG NO. 4715
PROFESSIONAL
LAND SURVEYOR

10-7-22

I, David L. Cormier, hereby certify that the Proposed Location of Air Products *Maurepas S TST-DM Well No. 001* to be staked as follows:

From the NGS Monument "G275" go S 43° 38' 29" W 40,577.25' to location in Block 26, Lake Maurepas Area, St. John the Baptist Parish, Louisiana.

DAVID LESLIE CORMIER
PROFESSIONAL LAND SURVEYOR
LOUISIANA REGISTRATION NO. 4715

Proj. Mgr.: JLT
Revised: 10/7/22
Printed: 10/7/22

AIR PRODUCTS

Maurepas S TST-DM Well No. 001

BLOCK 26, LAKE MAUREPAS AREA

ST. JOHN THE BAPTIST PARISH, LOUISIANA

FUGRO USA LAND, INC.
226 DULLES DR. SUITE 110 LAFAYETTE, LA 70506 (337) 237-1300 LA RPLS FIRM #VF.000079

GEODETIC DATUM: NAD83 & NAD27 PROJECTION: LOUISIANA SOUTH GRID UNITS: US SURVEY FEET		SCALE IN FEET 0 1,000'	
Job No.: 04.00204055	Date: 2/8/22	Drwn: AXG	Chart: 1 Of: 1
L:\2021\04.00204055\4000 Processing\4300 CAD\004002040555B.dwg			

Air Products Blue Energy LLC Class V Well Permit Application (UIC25)

Well Name: Maurepas S TST – DM#1

Target: Lower Miocene 2

Field: Lake Maurepas

Field Code: 5434

Parish: St. John the Baptist

State: Louisiana

Location (NAD27-LA South):

Lat: 30 ° 12' 32.01"N

Long: 90 ° 29' 28.40"W

Proposed TD: 9168 ft MD (Oligocene)

Objective Formations: Lower Miocene 2

Well Casing/Cement Data

Hole Size	Casing Size	Casing Weight	Casing Grade	Casing/Liner Setting Depths		Sacks Cement	Yield	Excess	Type Cement	Cement
Inches	OD - Inches	Weight lb/ft		Top (ft)	Bottom (ft)		(ft3/sack)	%		Top (ft)
Driven	20			0	200				Driven	
17-1/2	13-3/8	67	L80	0	3587	**1603**	2.26	100	LiteCRETE 10ppg	0
17-1/2	13-3/8	67	L80			**813**	1.11	100	Class H 16.1ppg	3119
17-1/2	13-3/8	67	L80			**0**			Casing Packer	3209
17-1/2	13-3/8	67	L80			**0**			Water	3219
17-1/2	13-3/8	67	L80			**0**			Casing Packer	3309
17-1/2	13-3/8	67	L80			**400**	1.11	100	Class H 16.1ppg	3319
12 1/4	9 5/8	47	L80	0	3400	**412**	2.74	50	Class H 16.1ppg	0
12 1/4	9 5/8	47	L80	3400	3700	**137**	1.11	50	Class H 16.1ppg	0
12 1/4	9 5/8	47	L80			**0**			Casing Packer	3690
12 1/4	9 5/8	47	L80			**0**			Water	3700
12 1/4	9 5/8	47	G3-110	3800	5620	**1090**	1.18	50	EverCRETE (CO2 Resistant) 14.8ppg	3800
8 1/2	5 1/2	17	L80	0	5120	**554**	2.26	50	LiteCRETE 10ppg	0
8 1/2	5 1/2	17	25CRW-80	5120	9083	**1100**	1.18	50	EverCRETE (CO2 Resistant) 14.8ppg	5120
8 1/2	5 1/2	17	L80	9083	9168	**46**	1.18	50	EverCRETE (CO2 Resistant) 14.8ppg	5120

Table 1: Well Casing/Cement Plan

043366

Well Schematic with Mud System

Maurepas South Test Well Wellbore Schematic

Casing Size (in)	Hole Size (in)	Casing Program	Depth MD (ft)	Depth TVD (ft)	Mud System	Mud Weight (ppg)	Days (est.)	Comments
20" (17.81" ID)	Driven		200'	200'	Water & Gel Sweeps	8.7		Drive 20" to 200' penetration
13-⅜" (12.25" ID)	17-1/2"		3587'	3587'	Low Solids / Lightly Dispersed	8.7 9.7	4	Pump Hi-Vis Gel sweeps as needed to seal sands.
9-⅝" (8.525" ID)	12-1/4"		5620'	5620'	RheGuard V SBM	9.7 9.9	7	Displace WBM to RheGuard V SBM Monitor hole cleaning. Adjust low-end rheology as needed for adequate cuttings removal. Pump Hi-Vis sweeps as needed. Pump LCM sweeps to control seepage loss
Run 5½" Csg (4.767" ID) Tapered	8-1/2" OH		9168'	9168'	RheGuard V SBM 9.8-10 ppg Completion Brine	9.7-9.9 9.7-10	10 5	Lower fluid loss and adjust low end rheology and gels to prevent sag prior to tripping out of hole for logging. Displace to 9.8-10 ppg Completion Brine

Figure 1: Wellbore schematic with Mud System Details

Figure 2: Wellbore Schematic with Geologic Intervals (PE Stamp)

See Attached

OFFICE OF CONSERVATION

Wellhead Design

Figure 3: Wellhead Design with PE Stamp

See Attached

OCT 27 2022

Certified Location Plat

See Attached

INJECTION & MINING DIVISION

Certified By Lonquist & Co., LLC (EF5937)
Ben H. Bergman P.E., October 14th, 2022

STATE OF LOUISIANA
BEN H. BERGMAN
License No. 40184
PROFESSIONAL ENGINEER

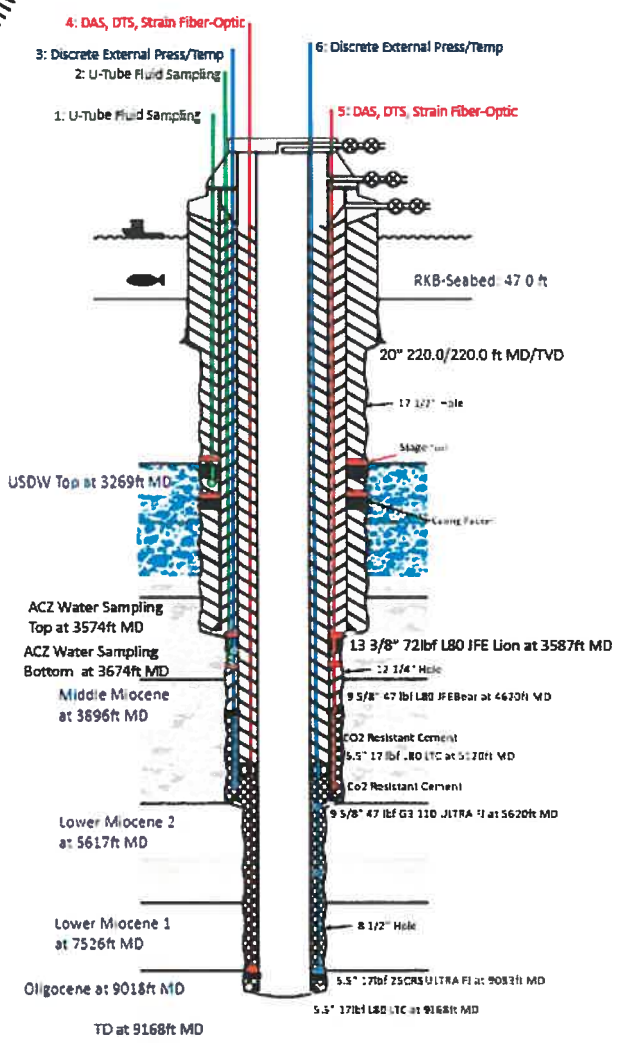
043366

DrillPlan

2 Wellbore Schematic

Well Maurepas S TST-DM #1

Area	dating...
Field	Lake Maurepas
Country	United States of America (the)
State	Louisiana
County	St. John the Baptist
City	New Orleans
Structure	Upper Lower Miocene
Coordinate ReferenceSystem	NAD27 Louisiana State Plane,Southern Zone, US Feet
Latitude	30 ° 12 ' 32.014538 "
Longitude	-90 ° 29 ' 28.397139 "
Northing	561801.00 ftUS
Easting	2266000.00 ftUS
Elevation Reference	RKB
Elevation Reference aboveMSL	37.00 ft
Seabed below MSL	10.00 ft



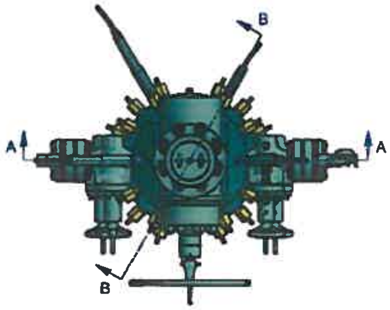
TUBULAR	SACKS	TYPE CEMENT/ppg	YIELD (ft^3/sack)
13.375"	1603	LiteCRETE / 10	2.26
	1213	Class H / 16.1	1.11
9.625"	412	Class H / 11.8	2.74
	137	Class H / 16.1	1.11
	888	EverCRETE / 14.8	1.18
5.5"	554	LiteCRETE / 10	2.26
	1146	EverCRETE / 14.8	1.18

Hole Size (in)	Type	Tubular	OD (in)	ID (in)	Drift ID (in)	Start MD (ft)	End MD (ft)	TOC (ft)	Grade	Connection
20.000	Conductor	20" Casing 209.06 ppf X-52 Conductor	20.000	18.000	17.813	0.00	200.00		X52	WELD - API 5L SPECS
17.500	SurfaceCasing	13.375" Casing 72 lbm/ft L80 VAM® TOP Casing	13.375	12.347	12.250	0.00	3587.00	10.00	L80	VAM TOP
12.250	Casing	9.625" Casing 47 lbm/ft L80 JFEBEAR	9.625	8.681	8.525	0.00	4620.00	10.00	L80	JFEBear
12.250	Tapered	9.625" Casing 47 lbm/ft G3 110 ULTRA FJ	9.625	8.681	8.525	4620.00	5620.00	10.00	G3-110	ULTRA FJ
8.500	Casing	5.5" Casing 17 lbm/ft L80 LTC	5.500	4.892	4.767	0.00	5120.00	10.00	L80	LTC
8.500	Tapered	5.5" 17 lbm/ft 25CRW 80 ULTRA FJ	5.500	4.892	4.767	5120.00	9083.00	10.00	25CR - 80	ULTRA FJ
8.500	Tapered	5.5" Casing 17 lbm/ft L80 LTC	5.500	4.892	4.767	9083.00	9168.00	10.00	L80	LTC

Figure 3: Wellhead Design with PE Stamp

See Attached

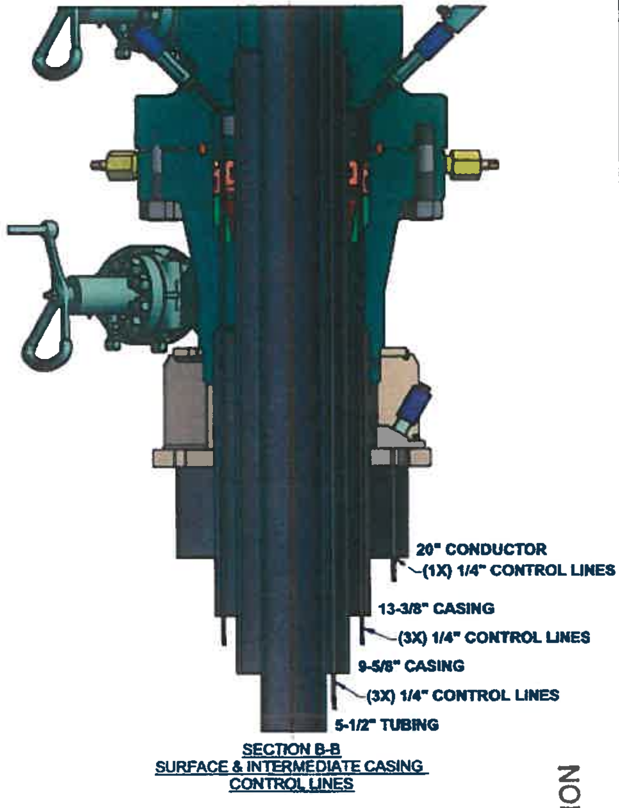
043366

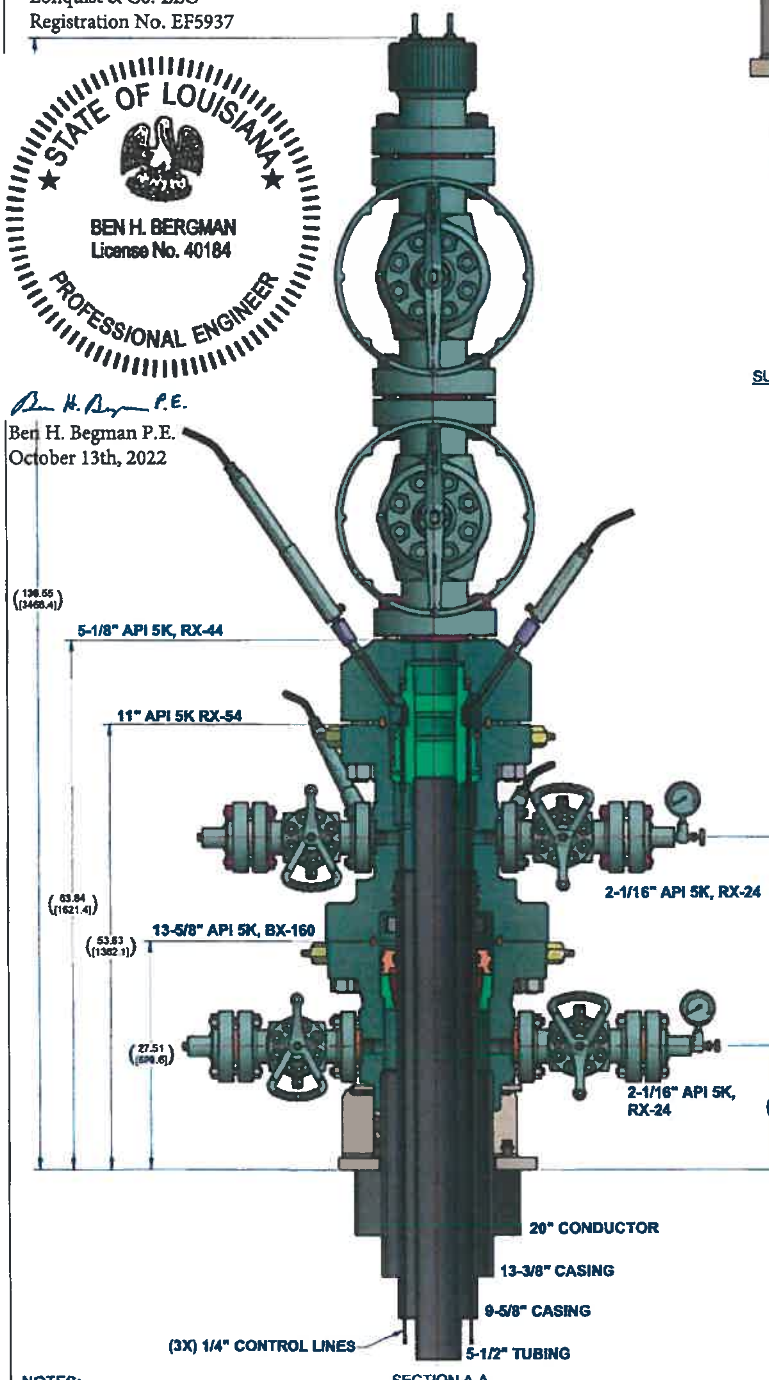


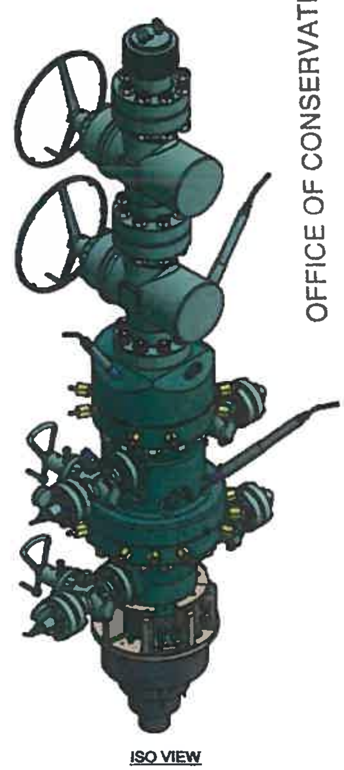
Certified by:
Lonquist & Co. LLC
Registration No. EF5937

STATE OF LOUISIANA
BEN H. BERGMAN
License No. 40184
PROFESSIONAL ENGINEER

Ben H. Begman P.E.
October 13th, 2022







OFFICE OF CONSERVATION

OCT 27 2022

Well Maurepas S TST-DM #1

AIR PRODUCTS (DEEP MONITOR WELL)
13-5/8" W/ 11" 5K CONVENTIONAL WELLHEAD
20" X 13-3/8" (W/ CL) X 9-5/8" (W/ CL) X 5-1/2" (W/ CL) CASING.

CONFIDENTIAL

DO NOT SCALE		CAMERON A Schlumberger Company	SURFACE SYSTEMS
C. ARNEY... OR	13 Oct 22	SEE ABOVE	
M. KREJCI	13 Oct 22		
M. KREJCI	13 Oct 22		
1 of 1	SD-053971-04-26	01	

NOTES:

1. THIS IS A PROPOSAL DRAWING AND DIMENSIONS SHOWN ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PROCESS.

2. DIGITALLY ENABLED SOLUTIONS, CHOKES AND EDS AVAILABLE ON REQUEST.

043366

Well Maurepas S TST-DM #1 - Wellhead Specs:

- 13-5/8" 5K Conventional Wellhead System
  - 13-5/8" 5K BX-160 FLG SOW Casing Head w/ Split type' Landing Base
  - (2) 2-1/16" Bore 5K Gate Valve w/ Blind Flange
  - 13-5/8" Nom Casing Head F 16" and 20" conductor (w 1 - 1/4" CCL)
- 13-5/8" 5K BX-160 FLG BTX X 11 API 5K R-54 FLG Top Tubing Spool
  - Tubing Spool includes 9-5/8" double 'T' seals and Control Line exit port
  - (2) 2-1/16" 5K Gate Valve w/ Blind Flange
  - Annulus Monitor 2-1/16
- 11" API 5K X 5-1/8" 5K Tubing Head Adapter
  - With SRL and CANH Seals Prep
  - Four (4) CCL
  - With 6" 'T' Seals prep
- 11" Nom Tubing Hanger W 5 1/2"
  - With two (3) 1" & two (3) 1/4" CCL
- 5-1/8" 5K Lower & Upper Master (Manual Gate Valves) & Tree Cap
- Ring gaskets, studs & nuts
- Wear bushing and Test Plug
- Additional Running Tools and Emergency Equipment

No discharge line – Monitor Well Only

Certified By:
Lonquist & Co., LLC

Ben H. Bergman P.E.
October 13th, 2022

OFFICE OF CONSERVATION

OCT 27 2022

INJECTION & MINING DIVISION

43366

Drilling Plan (Depths in KB TVD)

1. Drive **20"** conductor to refusal at **~120 - 200'**
2. Drill & Log vertical **8-1/2" pilot** hole to **±3,587'**.
   a. Run open hole wireline log suite from **±200' to ±3,587'** (**e-log #1**). Prior to setting surface casing logs will be submitted to IMD to ensure adequate isolation and protection of the USDW. The open-hole logs must show the base of the USDW sand, which involves logging across a non-USDW sand beneath the USDW.
   b. Run hole opener to enlarge **8 1/2" Pilot** to **17 /12"** to **±3,587'**
   c. Run **13-3/8", 72 ppf, L80, VAM TOP casing** to **±3,587'**
   d. Cement **13-3/8"** casing with a **3**-stage system to ensure proper cementing of the shoe. A CES will be contacted 48 hours prior to casing test to be witnessed by CES to a minimum of 600 psi. Test results to be reported on form CSG-T.
      1. Stage 3: Cement with 1603 sx LiteCRETE 10ppg (2.26 ft3/sk yield) from 3119'-surface
      2. Stage 2: Cement with 813 sx Class H 16.1ppg (1.11 ft3/sk yield) from 3209'-3119'.
      3. Isolated Sampling zone to remain uncemented 3209'-3309'
      4. Stage 1: Cement with 400 sx Class H 16.1ppg (1.11 ft3/sk yield) from 3319'-3309'
   e. Install BOP. Pick up **8-1/2"** BHA and drill out the **13-3/8"** casing shoe and perform the leak off test.
3. Drill vertical **8 1/2"** hole to **±3,896'** (TD for core **#1**)
   a. Core **180'** of formation from **3,896' to 4,076'** (core Interval #1) in ± 6 core runs (30')
   b. Drill & log vertical **8-1/2"** hole from **4,076' to 5,437'** (TD for core **#2**)
   c. Core **180'** of formation from **5,437' to 5,617'** (**core interval #2**) in **±6** cores runs (**30'**)
   d. Drill **150'** rathole to accommodate wireline logging
   e. Run open hole wireline log suite from **±3,362' to ±5,620'** (**e-log #2**).
      1. Wireline logging suite will include mini-frac testing in confining zone at multiple depths with MDT tool, using drilling mud pumped at hydrostatic pressure and a dual packer system to create a pressure differential in the isolated zone.
   f. Hole opener run to enlarge **8 1/2" Pilot** to **12 2/5"** to **±5,620'**
   g. Run **9-5/8", 47ppf, L80, JFE Bear above 1000' of 9-5/8" 47 lbm/ft G3 110 ULTRA FJ casing to ±5,620'**
   h. Cement the **9-5/8" G3 1000'** casing with CO2 **3**-stage system to ensure proper cementing to surface. A CES will be contacted 48 hours prior to casing test to be witnessed by CES to a minimum of 1,000 psi. Test results to be reported on form CSG-T.
      1. Stage 3: 412 sx Class H 16.1ppg (2.74 ft3/sk yield) from 3400'-surface'
      2. Stage 2: 137 sx Class H 16.1ppg (1.11 ft3/sk yield) from 3690'-3400'
      3. Isolated Sampling zone to remain uncemented 3690'-3800'
      4. Stage 1: 1090 sx EverCRETE (CO2 resistant) 14.8ppg (1.18 ft3/sk yield) from 5620'-3800'
   i. Drill out the **9-5/8" casing** and perform the **Leak Off Test**.
4. Drill & log vertical **8-1/2"** hole to **±5,937'**
   a. Core **180'** of formation from **5,937' to 6,897'** (**core interval #3**) in **±6** core runs (**30'**)
   b. Drill & log vertical **8-1/2"** hole from **6,397' to 7,526'** (TD for core **#2**)
   c. Core **150'** of formation from **7,526' to 7,676'** (**core #2**) in **5** cores runs (**30'**)
   d. Drill & log vertical **8-1/2"** hole from **7,676' to ±9,168'** (TD) Plus additional rathole needed for logging
   e. Run open hole wireline log suites per logging program **to ±9,168'** (**e-log #3**).
      1. Wireline logging suite will include mini-frac testing in injection zone at multiple depths with MDT tool, using drilling mud pumped at hydrostatic pressure and a dual packer system to create a pressure differential in the isolated zone.
   f. Circulate and replace wellbore fluid with completion brine prior to cement job
   g. Run **5-1/2", 17ppf, L80, LTC above 3963' of 5-1/2" 17ppf 25CrW 80 ULTRA FJ and 85' of 5-1/2", 17ppf, L80 LTC to ±9168'**
   h. Cement **5-1/2"** casing with EverCrete lead up to **5120'** then conventional Class H to surface. A CES will be contacted 48 hours prior to casing test. Test results to be reported on form CSG-T.
      1. Stage 2: 554 sx LiteCrete 10.0ppg (2.26 ft3/sk yield) 5120'-surface
      2. Stage 1: 1146 sx EverCRETE (CO2 resistant) 14.8ppg (1.18 ft3/sk yield) 9168'-5120'
   i. Install permanent wellhead and conductor wellhead pressure test and casing tests, the casing test will be witnessed by CES and tested to at least 1000 psi.
5. Rig down and move the rig off. Install temporary platform and beacon light.

*Note, BHP will be measured directly in multiple zones with MDT tool probe during wireline logging operations.

Drilling and Completion Information

No known hydrocarbon interval exists in the area of investigations, and the system is expected to be normally pressured. Mitigation techniques, including drilling with SBM in those sections of the well below the expected USDW, will be employed to avoid any potential issues caused by hole rugosity. As discussed below, cement and casing are designed to withstand both geological factors and any corrosion from CO2.

Directional Control

Vertical well; directional survey to be run by completion of drilling.

Mud Logging Services:

Standard two-person logging service with additional mudlogger for high-ROP sections; three catchers to be available for high-ROP intervals. Daily email services and the collection of two sets of dry samples, to be collected at 30-foot intervals except where specified (below), whereupon samples shall be collected at 10-foot intervals.

The mud logger is required to contact Air Products and Chemicals, Inc., the WSS, and the drilling operator prior to spud date to coordinate the following:

1) The mudlog trailer is to be provided with internet access and telephone service
2) Regardless of what software system is employed by the drilling contractor to monitor ROP, WOB, time off bottom, etc., every effort should be made to ensure that the mudlogger is able to tie in to the drilling contractor's software system in order to accurately access ROP, WOB, TOB, etc. information within the mudlog trailer.
3) The mudlogger shall produce both 1" and 5" scale mudlogs for the entire interval that is mudlogged. The mudlogger is to record mud properties when updated, any and all hydrocarbon shows, any time off bottom, and any changes in ROP and WOB.

Depth On: 112 feet SSTVD (base 20" Conductor casing).

10-foot sampling intervals in the following zones:

- Collect 10' samples from 3700' SSTVD to top Middle Miocene;
- Resume 30' samples to 7500' SSTVD
- Collect 10' samples from 7500' SSTVD to Top Lower Miocene 1.

BOP Testing Procedure

Diverter will be used on top of 20" conductor.

10k psi 13-5/8" BOP Pipe and Shear rams will be installed after 13-3/8" casing is installed. The annular will be 5k psi

The annular preventer will be pressure-tested to 70% of stack-rated working pressure (3500 psi) for 10 minutes or until provisions of the test are met, whichever is longer. The BOP, choke manifold, and related equipment will be pressure-tested to approved BOP stack working pressure (if isolated from the surface casing by a test plug) or to the MASP rating (756 psi) whichever is lower. 70% of surface casing internal yield strength (3504 psi) if BOP is not isolated by a test plug). Pressure will be maintained for 10 minutes in a high-pressure test and 5 minutes in a low-pressure test or until the requirements of the test are met, whichever is longer. At a minimum, the annular and BOP pressure tests will be performed:

1. When the BOP equipment (BOPE) is initially installed.
2. Whenever any seal subject to test pressure is broken.
3. Following related repairs.
4. At 14-day intervals.

Annular will be function-tested weekly, and pipe and blind rams will be activated each trip. All BOP drills and tests will be recorded in the International Association of Drilling Contractors (IADC) driller's log.

Accumulator: The fluid reservoir capacity will be double accumulator capacity, and the fluid level will be maintained at manufacturer recommendations.

An accumulator precharge pressure test will be conducted prior to connecting the closing unit to the BOP stack.

Operations: Test BOP rams and all well control equipment to 300 psi for 5 minutes for low pressure test and to 3504 psi for 10 minutes for high pressure test according to Schlumberger Well Control Manual WCS – WCMAN-001 WCM_Rev1.

Test the annular BOPE and all well control equipment with 300 psi for 5 minutes for low pressure test and 3,500 psi for 10 minutes high pressure test.

Function test BOP every trip in/out of the hole.

Before drilling: test casing for 30 min to 1,500 psi (in accordance with NDAC 43-02-03-21).

BOP Testing – Test Pressure (psi)

Activity	Pressure Definition	Pipe Rams	Annular preventers	C/K valves	BOP Connection	C/K Lines	Shear Ram / Casing Liner	Mud Density (ppg)
BOP test on Surface	Surface	4,000	3,500	4,000	Function test	4,000	4,000	9.7(water)
At initial installation on wellhead for 13-3/8" casing test	Surface	4,000	3,500	4,000	Function test	4,000	4,000	9.7 (water)
BOP test within 14 days interval with 13-3/8" casing set	Surface	4,000	3,500	4,000	Function test	4,000	4,000	9.7
BOP Function Test every trip in/out of hole	Surface	-	-	-	Function test	-	-	9.9
9-5/8" casing test	Surface	4,000	3,500	4,000	-	-	4,000	9.9
BOP test within 14 days interval with 9-5/8" casing set	Surface	4,000	3,500	4,000			4,000	9.9
5- 1/2" casing test	Surface						1500	9.9
Note: Casing / liner test pressures shall be adjusted according to actual mud density and safety factor checked.								
Note: After installation, shear ram shall be tested to casing/liner test pressure or function tested.								
Note: Wellhead will be tested to maximum well design pressure after 5-1/2" casing is set.								

Log Info		Well Section					
Logging While Drilling - LWD	**Tool Name**	**26"**	**17 1/2" (Pilot 8 1/2")**	**17 1/2"**	**12 1/4" (8 1/2" Pilot)**	**12 1/4"**	**8 1/2"**
Gamma Ray / Res / Density / Neutron (Porosity) / Density Caliper	EcoScope		✓		✓		✓
Magnetic Resonance	ProVISION Plus				✓		✓
Near Bit Gamma Ray	PowerDrive		✓		✓		✓
Wireline Open Hole Logging		**26"**	**17 1/2" (Pilot 8 1/2")**	**17 1/2"**	**12 1/4" (8 1/2" Pilot)**	**12 1/4"**	**8 1/2"**
4 Arm Caliper	PPC		✓	✓	✓	✓	✓
SpectroScopy	HNGS		✓		✓		✓
Sonic Compressional / Shear	Sonic Scanner		✓		✓		✓
SP (Spontaneous Potential)	AIT / HRLA		✓				
Fluid Sampling *(Saturn Probe)*	MDT		✓		✓		✓
(1 gallon sample)			✓		✓		✓
Formation Pressure *(XD Probe)*	MDT				✓		✓
Mini Frac Testing *(Dual Packer)*	MDT				✓		✓
Mineralogy	LithoScanner				✓		✓
Borehole Imagining	QuantaGeo				✓		✓
Optional Wireline Open Hole Logging		**26"**	**17 1/2" (Pilot 8 1/2")**	**17 1/2"**	**12 1/4" (8 1/2" Pilot)**	**12 1/4"**	**8 1/2"**
Magnetic Resonance	CMR Plus		✓		✓		✓
Gamma Ray / Res / Density / Neutron (Porosity) / Density Caliper	Platform Express		✓		✓		✓
Rotary Sidewall Coring	MSCT		✓		✓		✓
Cased Hole Logging		**20"**	**13 3/8" (Pilot 8 1/2")**	**13 3/8"**	**9 5/8" (8 1/2" Pilot)**	**9 5/8"**	**5 ½"**
Cement Evaluation/Corrosion Log	IBC-CBL			✓		✓	✓
Pulse Neutron (Baseline)	RST			✓		✓	

Table 2: Logging Services for each hole section, including both LWD and WL

Geologic Maps, Cross Sections, Estimated Formation Depths and USDW

Geological Summary

Air Products is evaluating the feasibility of developing a carbon capture and sequestration program under Lake Maurepas. This feasibility evaluation includes sampling and analyzing the subsurface geological features beneath Lake Maurepas. Air Products has begun analyzing the geological features of the site for their injection and confining capabilities. The Underground Source of Drinking Water (USDW) has been identified from resistivity logs (Fig. 6) and mapped over Lake Maurepas (Fig. 5) to ensure that sampling will take place below the USDW, as well as injection reservoir and confining zones (both above and below the injection reservoir). Four 2D lines covering the lake have been interpreted. No core data was found for this area. Data collected for this program from existing well logs, seismic, and publications have been integrated into a geomodel covering the area of the lake for simulation of plume development during and after injection. This test well location was selected based on the geology and remoteness of the area. The test well will be located in a remote area of open water in the southeast corner of the lake, far removed from the mouths of the Amite, Blind, and Tickfaw rivers. It is also not located near the North Pass or Manchac boat launch, meaning that its location will not affect ingress to or egress from the lake.

Offset Wells:

The following offset wells penetrated the target reservoirs and aquifers in similar depth and pressure regimes:

Operator	Well Name	Well UWI	TD	Spud	Lat	Long
Graham Exploration Ltd	1 SL 11292	17051207150000	11,300	5/4/1985	30.150735	-90.217831
Smith Production Co	1 HOLDING L M 6-15	17095201160000	10,500	6/19/1997	30.11538	-90.43547
Artra Resources Corp	1 LUTCHER & MOORE LUMBER CO	17093202150000	15,000	5/13/1982	30.1543542	-90.6574519

Table 3: Offset well data used in geological analysis

Stratigraphy

The Miocene section of the Gulf Coast has been previously characterized in detail by Galloway (1986, 1989, 2008) and others. Air Products uses the framework for identifying intervals within the Miocene from these sources, consistent with USGS definitions as shown in the stratigraphic column below (Fig. 4). A general description of each is as follows:

- The Upper Miocene (Tortonian) section is interpreted (Galloway et al., 2000) to be a period of fluvial-dominated sedimentation. The Mississippi Delta System was composed of the Central and East Mississippi axis systems combined with the Tennessee River (Galloway et al., 2000). Air Products' investigations into the local area of Lake Maurepas indicate this zone is relatively sand-dominated, with interspersed shales and mudrocks. The Upper Miocene contains the regional USDW, as marked by a deep induction curve with a value of 2 ohms or greater at 2000' or greater (Fig 6).
- The Middle Miocene (Serravalian/Langhian) is interpreted as a fluvial-deltaic system (Combellas-Bigott et al., 2006). The ancestral Mississippi River and eastern Tennessee River systems contributed to most of the sediments deposited in this area. In Air Products' analysis, the shale-dominated Middle Miocene under Lake Maurepas is interpreted to have been largely deltaic, with interspersed sands of fluvial origins. The Middle Miocene is being investigated as the upper confining zone of the potential sequestration program.
- The Lower Miocene (Burdigalian) is split into two intervals, the Lower Miocene I below and the Lower Miocene II above, separated by an 18 Ma transgressive shale – a regional maximum flooding surface (MFS) (Galloway et al., 1986, 2000). Both systems are interpreted to have been part of a near-shore fluvial-deltaic system, potentially partly shoreface (Xu et al., 2016; Galloway et al., 2000). The Lower Miocene II is a sand-dominated interval and is being investigated as the injection zone for the potential sequestration program. The Lower Miocene I (LM1) is a shale- to mudrock-dominated interval and is being investigated as the basal confining zone.
- The Oligocene section is not being investigated for use in the potential sequestration program under consideration, though the requested permit would allow Air Products to drill into the upper part of the Oligocene section, if necessary, to find a lower dissipation zone beneath the main injection interval, should a

suitable permeable rock not be found in the LM1. However, the deeper Anahuac formation of the upper Oligocene is recognized as a regional sealing formation around the Gulf Coast and is expected to perform as an overall base seal to the potential sequestration program.

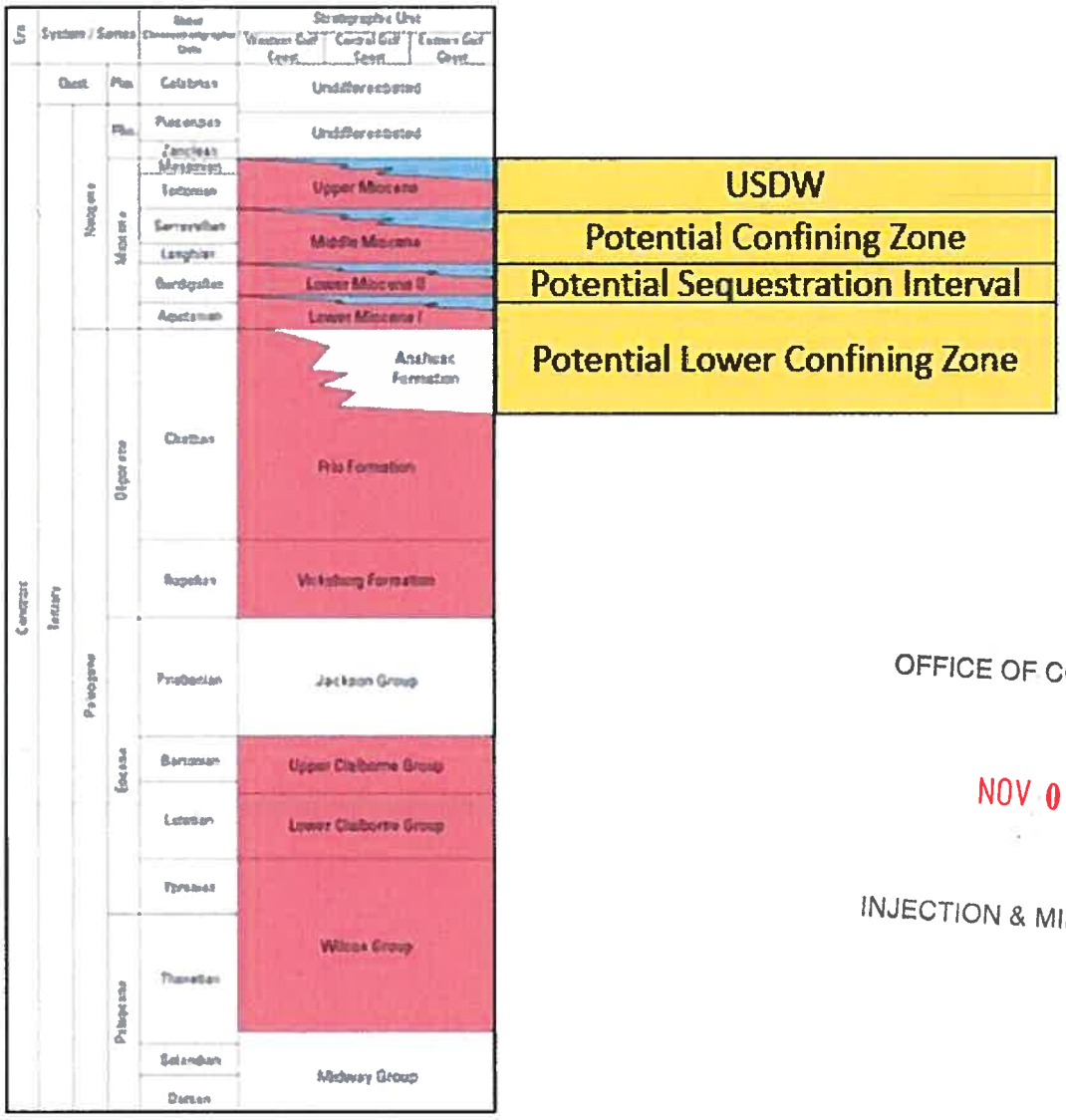


Figure 4: Stratigraphic column indicating intervals of Area of Interest – Potential Confining and Sequestration zones. CO2Viewer (usgs.gov)

Structure

The structure of the Lake Maurepas region is dominated by a gently dipping slope of ~0.5-3.5° (Table 4).

Estimated Formation Dip and Direction:

MAUREPAS S TST-DM #1				
Surface	TVD	MD	Dip angle	Dip azimuth
Upper Miocene	1757	1794	0.48	261.36
Middle Miocene	3859	3896	0.93	173.3
Lower Miocene 2	5580	5617	1.97	242.41
Lower Miocene 1	7489	7526	1.9	158.89
Oligocene	8981	9018	3.56	170.57

Table 4: Estimated regional dip and azimuth of geological units

MAUREPAS S TST-DM #1					
Formation	Depth (SSTVD)	Depth (MD, RKB 37')	Anticipated Fluid	Estimated TDS (ppm)	Est. BHP/MW
Top Upper Miocene	1757	1794	Fresh/Brackish Aquifer	</= 10000	Normal
Top of USDW	3232	3269	Fresh/Brackish Aquifer	10000	Normal
Top Middle Miocene	3859	3896	---	N/A	Normal
Top Lower Miocene 2	5580	5617	Saline Aquifer	120,000-190,000	Normal
Top Lower Miocene 1	7489	7526	---	N/A	Normal
Top Oligocene	8981	9018	---	N/A	Overpressure est. ~9500' TVD

Table 5: Expected fluids and pressures expected in Maurepas S TST – DM#1

USDW

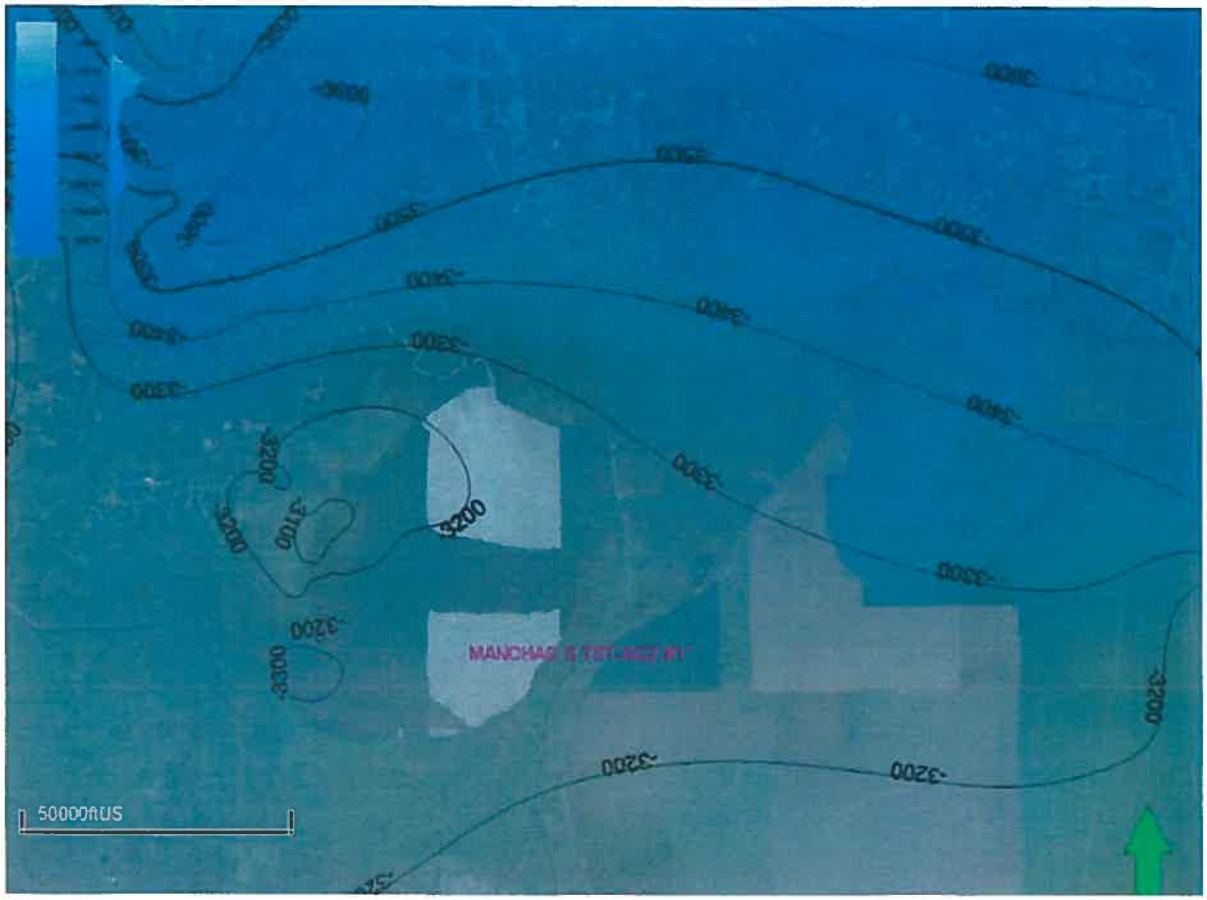


Figure 5: USDW map over Lake Maurepas. Contour Interval = 100'

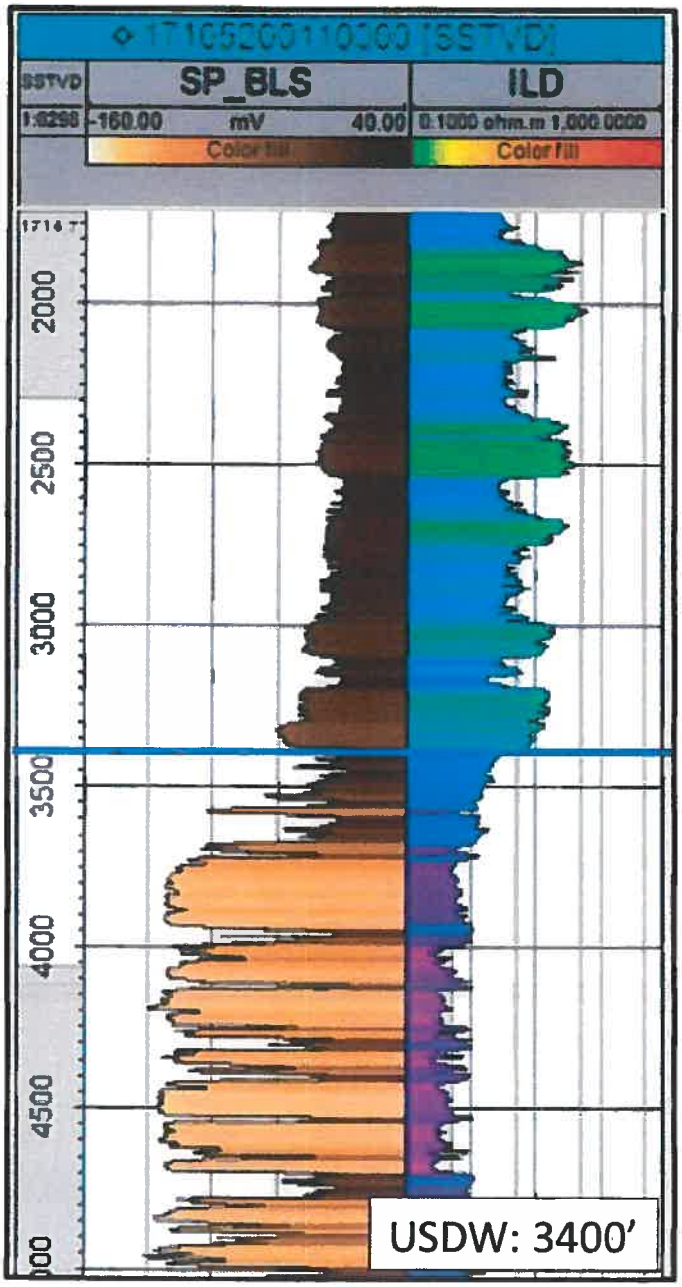


Figure 6: Offset well 171052011000 indicates the strong change of resistivity from freshwater to saline aquifer at the USDW boundary of 3400'.

Cross Sections

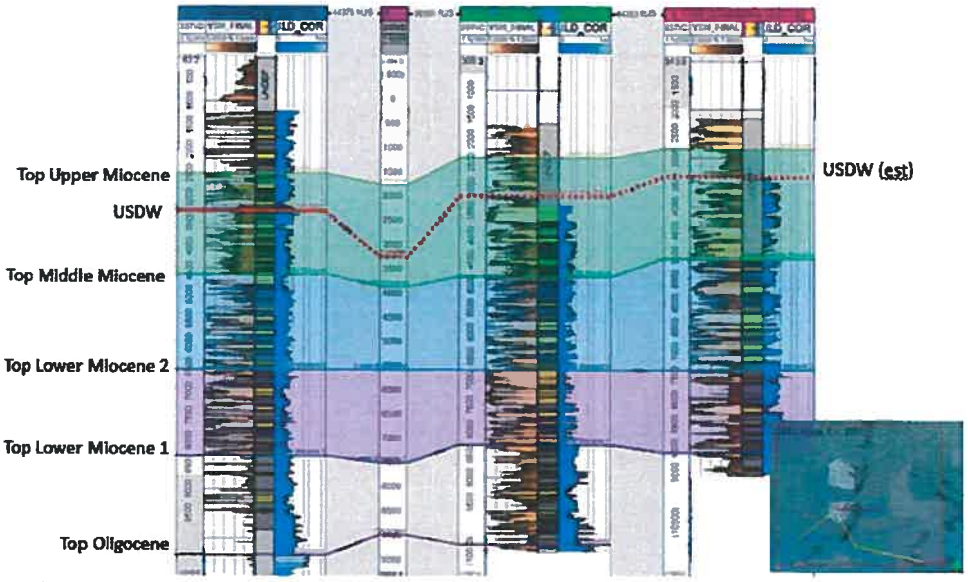


Figure 7: Strike line with Proposed Maurepas S TST – DM #1, flattened on Top Lower Miocene 2

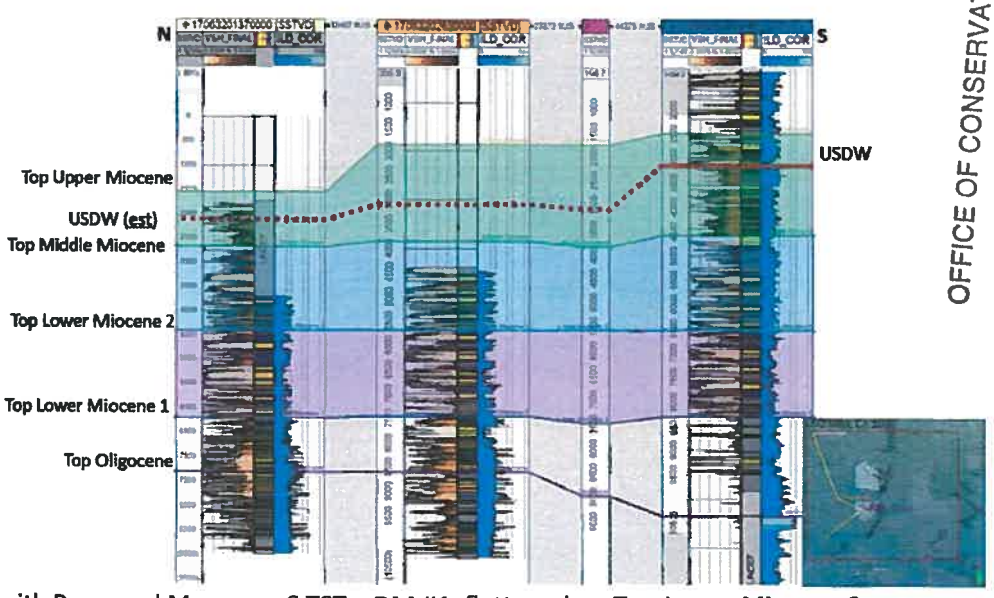


Figure 8: Dip line with Proposed Maurepas S TST – DM #1, flattened on Top Lower Miocene 2

Abandonment Plan

When abandoning, the well will be plugged in accordance with the Office of Conservation guidelines in effect at the time of abandonment.

References

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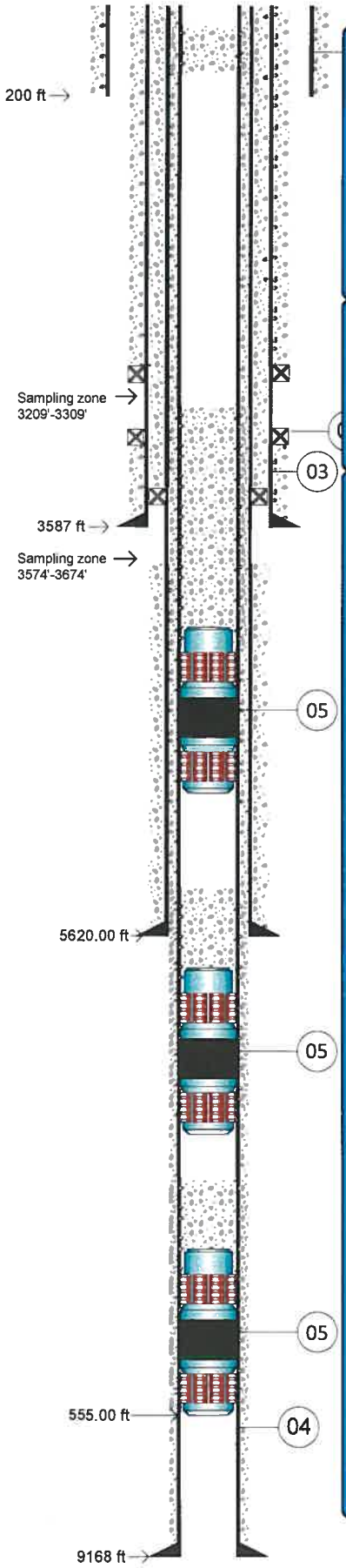


Maurepas S TST - DM #1

Proposed Well Completion

Prepared by	Heather Binagia			**Reference**	
Prepared for	Air Products	**Spud Date**	TBD	**Location**	30°12'32.014538", -90°29'28.397139"
Orig. Operator	Air Products	**Comp. Date**	TBD		
Planned Use	Planned P&A	**P&A Date**	TBD	**Date**	11/07/2022
				Page	1

Tubular	Size (in.)	Weight (lbs/ft)	Grade	Thread	Top Depth (ft.KB)	Bottom Depth (ft.KB)
Conductor	20	209.06	X-52	Weld	0	200
Surface Casing	13-3/8"	72	L80	VAMTOP	0	3587
Intermediate Casing	9-5/8"	47	L80/G3 110	JFEBEAR/ULTRAFJ	0	5620
Longstring Casing	5-1/2"	17	L80/25RW80	LTC/ULTRA FJ	0	9168

ITEM	DESCRIPTION				
ITEM	DESCRIPTION	ID	OD	LENGTH	DEPTH
01.	Conductor Casing	18	20	200	200
02.	Surface Casing (TOC at surface)	12.347	13.375	3587	3587
03a.	Intermediate Casing L80 JFEBEAR (TOC at surface)	8.681	9.625	4620	4620
03b.	Intermediate Casing G3 110 ULTRA FJ (TOC at surface)	8.681	9.625	1000	5620
04a.	Longstring Casing L80 LTC (TOC at surface)	4.892	5.500	5120	5120
04b.	Longstring Casing 25CRW80 ULTRA FJ (TOC at surface)	4.892	5.500	3963	9083
04c.	Longstring Casing L80 LTC (TOC at surface)	4.892	5.500	85	9168
05.	Cast Iron Bridge Plug (Wireline Set)		5.500		7000
06.	Cement Plug – Class H 16.8ppg		5.500	100	6900-7000
07.	Cast Iron Bridge Plug		5.500		5670
08.	Cement Plug – Class H 16.8ppg (Surface Casing Shoe)		5.500	100	5570-5670
09.	Cast Iron Bridge Plug		5.500		3900
10.	Cement Plug – Class H 16.8ppg (Base of USDW @ 3,400')		5.500	1000	2900-3900
11.	Cement Plug – Class H 16.8ppg (Surface)		5.500	100	50-150

NOTES

Proposed P&A Procedure:

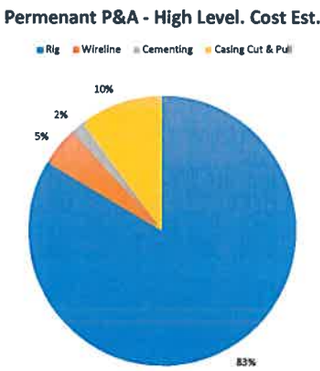
1. Run correlation log for wireline
2. Run & set cast iron bridge plug at +/-7,000' (in shale TBD from logs)
3. Pump 100' Class H 16.8ppg cement plug from 6,900' – 7,000'.
4. Run & set cast iron bridge plug at +/- 5,670' (surface casing shoe)
5. Pump 100' Class H 16.8ppg cement plug from 5,570'-5,670'.
6. Run & set cast iron bridge plug at 3,900'. (USDW @ 3,400')
7. Pump 1,000' Class H 16.8ppg cement plug from 2,900' – 3,900' (USDW @ 3,400')
8. Pump 100' Class H 16.8ppg cement plug at surface from 50'-150'.
9. Pump cement down U-tube sampler lines to isolate.
10. Cut off all casings ~20' below mudline. Bury well.

Air Products Darrow Blue - Maurepas #1 Permenant P&A Highlevel Cost Estimate

Well name	MAUREPAS S TST-DM #1
Rig	Parker 51B
Total depth (ft)	9,168

MU 1.15
Inflation 1.1

	Service	Section	UNITS	USD/UNIT	QUANTITY	Total AMOUNT (USD)	Comment
1	**Rig**					**$ 885,015**	
1.01	Mob to well	MOB / DEMOB	day	$ 21,000.0	3.0	$ 63,000	Maurpas #1 AFE
1.02	Demob from well	MOB / DEMOB	day	$ 21,000.0	3.0	$ 63,000	Maurpas #1 AFE
1.03	Bridge clearance work (entry)	MOB / DEMOB	day	$ 28,000.0	9.0	$ 252,000	Maurpas #1 AFE
1.04	3rd Party Services associated with rig mast dismantling	MOB / DEMOB	well	$ 310,000.0	1.0	$ 310,000	Maurpas #1 AFE
1.05							Maurpas #1 AFE
1.06	Day rate (6 man crew + 1 rig manager)	Well	day	$ 28,000.0	7.0	$ 196,000	Assumed 7 days for the P&A job
1.07							Maurpas #1 AFE
1.08							Maurpas #1 AFE
1.09							Maurpas #1 AFE
1.1	Rig Communications	Well	day	$ 145.0	7.0	$ 1,015	Maurpas #1 AFE
2	**Wireline**					**$ 48,754**	
2.01	Wellhead Lubricator	LS	LS	$ 7,100.0	1.0	$ 7,100	J-Loc1 job estimate
2.02	Correlation Log	LS	LS	$ 14,333.3	3.0	$ 1	J-Loc1 job estimate
2.03	Bridge Plug	LS	LS	$ 5,000.0	4.0	$ 20,000	J-Loc1 job estimate
2.04	Bridge Plug setting charges	LS	LS	$ 5,413.3	4.0	$ 21,653	J-Loc1 job estimate
3	**Cementing**					**$ 17,661**	
3.01	Cement Transport	Surface	mile	2.00	41.80	84	J-Loc1 job estimate
3.02	Equipment Mileage	Surface	mile	4.80	41.80	201	J-Loc1 job estimate
3.03	Car/PU Mileage	Surface	mile	2.80	41.80	117	J-Loc1 job estimate
3.04	Conventioal class H 16.8 ppg	USDW plug	$/bbl	249.70	21.55	5,381	J-Loc1 job estimate
3.05	MudPush	USDW Plug	$/bbl	203.60	15.00	3,054	J-Loc1 job estimate
3.06	Silica Flour	USDW plug	$/bbl	0.70	4,722.00	3,305	J-Loc1 job estimate
3.07	Dispersant	USDW Plug	$/bbl	48.40	2.00	97	J-Loc1 job estimate
3.08	Retarder	USDW Plug	$/bbl	42.00	2.00	84	J-Loc1 job estimate
3.09	Conventioal class H 16.8 ppg	Surface Plug	$/bbl	249.70	2.32	581	J-Loc1 job estimate
3.1	MudPush	Surface Plug	$/bbl	203.60	5.00	1,018	J-Loc1 job estimate
3.11	Dispersant	Surface Plug	$/bbl	48.40	2.00	97	J-Loc1 job estimate
3.12	Retarder	Surface Plug	$/bbl	42.00	2.00	84	J-Loc1 job estimate
3.13	Conventioal class H 16.8 ppg	Intermediate Plug	$/bbl	249.70	2.32	581	J-Loc1 job estimate
3.14	MudPush	Intermediate Plug	$/bbl	203.60	5.00	1,018	J-Loc1 job estimate
3.15	Dispersant	Intermediate Plug	$/bbl	48.40	2.00	97	J-Loc1 job estimate
3.16	Retarder	Intermediate Plug	$/bbl	42.00	2.00	84	J-Loc1 job estimate
3.17	Conventioal class H 16.8 ppg	Production Plug	$/bbl	249.70	2.32	581	J-Loc1 job estimate
3.18	MudPush	Production Plug	$/bbl	203.60	5.00	1,018	J-Loc1 job estimate
3.19	Dispersant	Production Plug	$/bbl	48.40	2.00	97	J-Loc1 job estimate
3.2	Retarder	Production Plug	$/bbl	42.00	2.00	84	J-Loc1 job estimate
3.22							
4	**Casing Cut & Pull**					**$ 108,767**	
4.01	5-12" 17# Cut & Pull	Well	well	17,333.53	1.00	19,934	5-1/2" Casing will need to be cut & pulled separately
4.02	9.625" 47# Cut & Pull	Well	well	23,112.01	1.00	26,579	can cut the 9-5/8" X 13-3/8" X 20" all together if needed
4.03	13.375" 73# X 20" 209.6# Cmt'd	Well	well	54,134.18	1.00	62,254	can cut the 9-5/8" X 13-3/8" X 20" all together if needed
	SCENARIO A: Permenant P&A Total Est (Mobilize P51B and Derrick Removal work)					**$ 1,166,216**	
	SCENARIO B: Permenant P&A Total Est (Utilize current Rig in area or lift boat)					**$ 497,182**	



JONES WALKER

Marjorie A. McKeithen
D: 504.582.8420
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mmckeithen@joneswalker.com

October 14, 2022

Via Hand Delivery

Laura Sorey
Geology Supervisor
LDNR - Office of Conservation, Injection & Mining Division
617 Third Street
Baton Rouge, LA 70802

Cody Todd
Petroleum Scientist III
LDNR - Office of Conservation, Injection & Mining Division
617 Third Street
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Stephen Lee
Director
LDNR- Office of Conservation, Injection & Mining Division
617 Third Street
Baton Rouge, LA 70802

OFFICE OF CONSERVATION

OCT 14 2022

INJECTION & MINING DIVISION

Re: Supplemental Materials: Proof of Publication(s)
Application No. 43366 / Stratigraphic Test Well
MAUREPAS S TST DM#1 Well No. 001
Lake Maurepas Field, Saint John the Baptist Parish

Dear Laura, Cody and Stephen:

Please accept the following enclosed materials on behalf of Air Products Blue Energy, LLC (A10206) to supplement Application No. 43366:

1. notarized Proof of Publication for the public notice of the above-referenced Application published in the legal advertisement section of *The Advocate* with the original signature;

2. notarized Proof of Publication of the public notice for the above-referenced Application published in the legal advertisement section of *L'Observateur* with the original signature.

We are also submitting two copies of each original Proof of Publication for your records. Please do not hesitate to contact me at (225) 247-6836 if you require any additional documentation regarding the public notice of the application.

Sincerely,

Marjorie A. McKeithen

Marjorie A. McKeithen

Enclosures

Best Along the River

L'OBSERVATEUR

Certification of Publication

State of Louisiana
Parish of St. John the Baptist
City of LaPlace

Certification is hereby made by Brooke Robichaux, who attests that she is the news editor to L'Observateur, a twice weekly newspaper of general circulation in St. John The Baptist Parish and Official Journal of the St. John Parish Council and the School Board, and the Undersigned hereby certifies that the attached advertisement of:

Air Products Blue Energy LLC

16044 Hwy 73, Building 103

Prairieville, LA 70769

application to Office of Conservation, Injection and Mining Division, Lake Maurepas Field

was published in L'Observateur on the following dates:

October 5, 2022

OFFICE OF CONSERVATION

OCT 14 2022

INJECTION & MINING DIVISION

Brooke Robichaux

Brooke Robichaux, News Editor

Date of Certification October 5, 2022

Sworn to and subscribe before me this 5th day of October, 2022

CHRISTINE BROWNING
Notary Public
Notary ID No.139433
State of Louisiana
St. John the Baptist Parish

CHRISTINE BROWNING 139433 NOTARY PUBLIC ST. JOHN PARISH, LA MY COMMISSION IS FOR LIFE

Brooke Robichaux
News Editor
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ANDOUILLE: *Parish president congratulates queens*

FROM PAGE 1A

of Paulina, the 17-year-old daughter of Contina and Rickey Brumfield, is new to the world of pageantry. She competed for the first time only two months ago in the Miss St. James Parish Sugar Pageant, at which time the reigning Teen Andouille encouraged her to come next door to St. John for this year's Andouille Pageant.

"I really like how the St. John Parish community is always together and how everyone has each other's backs. I'm just really excited to be able to represent something that I'm proud of," Brumfield said.

She most enjoyed the practices leading up the pageant where she was able to bond with the other Miss and Teen contestants. She looks forward to traveling the state with Teen Andouille Caleigh Nicole Remondet.

"Even though I haven't attended pageants for long, I can't imagine winning any other pageant. With the experience that I had, it really felt like everything lined up the way it was supposed to be. Even with Caleigh, she feels like my best friend already. Those girls truly have a special place in my heart," Brumfield said.

Remondet, the 15-year-old daughter of Carla and CJ Remondet of Reserve, said the friendships formed between all of the contestants helped her feel confident going into the pageant. "We had three weeks of practices twice a week. We all got to know each other, so no matter who won Teen and Miss, we knew they would already have a really big connection," she said.

Remondet previously competed in the Louisiana Crawfish Festival twice and earned first runner-up. She earned first runner-up again in the Festival of the Bonfires Pageant.

It was definitely a shock when she was finally crowned Teen Andouille Saturday night, and she couldn't be more proud of herself for never giving up.

"I didn't know I would only have to come right in my front yard to achieve what I wanted, which is to be able to represent the community coming together as one. I couldn't be more thankful to be able to represent my hometown of St. John the Baptist Parish and see what opportunities the title will bless me with," Remondet said. "I have so many people behind me, supporting me, and it meant the world to me to see the people who mean so much to me crying in the audience as I walked out on stage because they knew how hard I worked for this."

Remondet is excited to experience the Andouille Festival in a new light. She's especially looking forward to the second line parade with all of the visiting festival queens.

Remondet also represents St. Charles Catholic High School as a student ambassador and a member of the Comets' varsity cheer team. Outside of school, she's a junior 4-H leader for St. John Parish.

Brumfield attends Lutcher High School, where she serves as sports medicine trainer for the football team and maintains membership in the Senior Beta Club. She's also a dance company member at Danielle's Dance Academy in St. James Parish.

The new queens will reign over the festival alongside last year's Andouille Pageant royalty, 2021 Miss Andouille Amber Hope Borne and 2021 Teen Andouille Rylee Madison Moore. The 2021 queens were crowned in a quiet ceremony last December at the St. John Parish Government Complex after Hurricane Ida disrupted plans for an on-stage event.

Borne, a graduate of Northwestern State University, followed in the footsteps of her mother, former Miss Andouille Hope Borne. After struggling with ADHD, dyslexia and a speech impediment as a child, Borne became a reading interventionist and made it her mission to be a voice for others, even when she's not wearing a crown.

Rylee Madison Moore, the 2021 Teen Andouille winner, has competed in pageants her entire life and previously reigned as Jr Miss Fisherman in St. John Parish. Moore has always admired the traditions that bring the St. John Parish community together, particularly for Christmas Eve and the Fourth of July fireworks on top the levee. Aside from wearing the crown, Moore is also a longtime member of Riverside Academy's varsity soccer program.

"Congratulations to Aubrey and Caleigh on being crowned the new Miss and Teen Andouille Queens. I would also like to thank 2021 Miss Andouille Amber Hope Borne and 2021 Teen Andouille Rylee Madison Moore for representing St. John the Baptist Parish and the Andouille Festival with pride and grace this past year," said St. John Parish President Jaclyn Hotard.

"We look forward to Aubrey and Caleigh carrying on this beloved tradition and the return of the Andouille Festival October 14-16, 2022, at Thomas F. Daley Memorial Park. This three-day event includes many musical guests, a delicious variety of food, a 5K fun run, Sunday Gospel Tent, second Line Parade and a Kids Craft and Entertainment tent. We encourage everyone to stayed updated with the Andouille Festival on social media and at andouillefestival.com."

WORKFORCE: *St. John's neighbors show greater industry growth*

FROM PAGE 1A

tion and warehousing at only 7%.

"St. John Parish is not growing the way it should be, and that's kind of scary. The largest decline in St. John Parish was the mining and gas extraction by 82%," Gathers said. "The unemployment rate is low, but there's a group of people who are of working age and not working."

Some barriers to employment that Gathers has witnessed delve deeper into societal issues. She believes school systems are integral to community growth as families and business owners decide where to lay roots. She has also seen a trend of women being driven out of the workforce since the COVID-19 pandemic, when mothers were forced to choose between their jobs and attending to their children during extended periods of virtual learning.

"I'm trying to get to the root of the problem," Gathers said. "Another trend has been that a lot of our associates don't have transportation and can't pass a drug test. That is a huge barrier that we are seeing a lot of in this region."

According to Gathers, even individuals who are well-equipped for stable employment are considering different pathways as a generational divide takes hold in the workforce.

"Generation X and Baby Boomers were raised and taught differently to just go to work, and that's it, whereas millennials and generation Z want more of a work-life balance. A lot of them are leaving the workforce and creating their own avenues," she said. "We are searching for work with a purpose instead of just going to work. That's where the disconnect is happening, and a lot of industries are suffering."

NOTICE OF INTENT
OFFICE OF CONSERVATION
INJECTION AND MINING DIVISION

Company Name
Address
City, State, Zip
Phone

Office of Conservation
Injection & Mining Division

OFFICE OF CONSERVATION
OCT 14 2022
INJECTION & MINING DIVISION

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PROOF OF PUBLICATION

ACCOUNT NAME: Taylor Media Service

ACCOUNT #109404

RUN DATE: 10/5/2022

Publication: Baton Rouge Advocate

SIZE: 3x5

Affidavit complete:

By: _____ **Title: Multimedia Sales Coordinator**
(signature)
Katie Hebert

Notary Information:
Affirmed before me, this 13 **day of** October **A.D. 2022**

_____ **Commission Expires: Indefinite**
(signature)
William D. Leach

WILLIAM D. LEACH
NOTARY PUBLIC
Notary ID # 65055
LSBA # 27746
My Commission Expires at Death
ATTESTING TO SIGNATURE ONLY

OFFICE OF CONSERVATION

OCT 14 2022

INJECTION & MINING DIVISION

Floridians endure slow wait for power

BY REBECCA SANTANA
Associated Press

SANIBEL ISLAND, Fla. — Hurricane Ian may be long gone from Florida, but workers on the ground were pushing ahead Tuesday to restore power and search for anyone still trapped inside flooded or damaged homes.

The number of storm-related deaths has risen to at least 80 in recent days, both because of the dangers posed by cleaning up and as search and rescue crews comb through the hardest-hit areas. Officials said that as of Monday, more than 2,350 people had been rescued throughout the state.

At least 71 people were killed in Florida, five in North Carolina, one in Virginia and three in Cuba since Ian made landfall on the Caribbean island on Sept. 27, a day before it reached Florida's Gulf Coast. After churning northeastward into the Atlantic, the hurricane made another landfall in South Carolina before pushing into the mid-Atlantic states.

There have been deaths in vehicle wrecks, drownings and accidents. A man drowned after becoming trapped under a vehicle. Another got trapped trying to climb through a window. And a woman died when a gust of wind knocked her off her porch while she was smoking a cigarette as the storm approached, authorities said.

In hardest-hit Lee County, Florida, all 45 people killed by the hurricane were over age 50.

As floodwaters begin to recede, power restoration has become job one.

In Naples, Kelly Sedgwick was just seeing news footage Monday of the devastation. Her electricity was restored four days after the hurricane slammed into her community of roughly 22,000 people. She praised the crews for their hard work: "They've done a remarkable job."

ASSOCIATED PRESS PHOTO BY CHRIS O'MEARA

Christina Barrett walks amid water-damaged furniture outside her home Tuesday in North Port, Fla. Residents along Florida's west coast are continuing to clean up after Hurricane Ian made landfall last week.

A few miles north along the coast in Bonita Springs, Catalina Mejilla's family wasn't as lucky. She was still using a borrowed generator to try to keep her kids and their grandfather cool as temperatures in the typically humid area reached the upper 80s.

"The heat is unbearable," Mejilla said. "When there's no power ... we can't make food, we don't have gas." Her mother has trouble breathing and needed to go to a friend's house with electricity.

Ian knocked out power to 2.6 million customers across Florida after it roared ashore with 150 mph winds and a powerful storm surge. State officials said they expect power to be restored by Sunday to customers whose power lines and other electric infrastructure is still intact.

About 400,000 homes and businesses in Florida were still without power Tuesday.

Eric Silagy, chair and CEO of Florida Power & Light — the largest power provider in the state — said he understands the frustration and that 21,000 utility workers from 30 states are working as hard as they can to restore power as quickly as possible. The utility expects to have power restored to 99% of its service areas by the end of the day Friday, he said.

The remaining 5% are mostly special situations where it's difficult to restore electricity, such as the home being so damaged it can't receive power or the area still being flooded. Those outages don't include customers whose homes or businesses were destroyed.

Another major electricity provider in the hard-hit coastal region, Lee County Electric Cooperative, said Monday that it expects to hit the 95% mark by the end of Saturday. That figure doesn't include barrier islands such as Sanibel that are in its service area.

Power restoration is always a key challenge after major hurricanes, when high winds and flying debris can topple power lines or major parts of the electricity infrastructure.

Silagy said the utility has invested $4 billion over the last 10 years to harden its infrastructure, doing things like burying more power lines, noting that 40% of its distribution system is now underground. The utility is also using more technology such as drones that can stay aloft for hours to get a better picture of damage, and sensors at substations that alert the utility to flooding so it can shut off parts of the system before the water arrives.

Silagy said he saw during Ian where those investments paid off. Concrete utility poles remained standing at Fort Myers Beach, where many homes and businesses were wiped away. The company also didn't lose a single transmission structure in the 8,000 miles it covers in Florida.

Elsewhere, the hurricane's remnants, now a nor'easter, were not done with the United States. Heavy rain fell Tuesday from Philadelphia to Boston, although not enough to cause flooding. The storm's onshore winds are causing some minor ocean flooding at high tide from the North Carolina Outer Banks to Long Island, New York.

"If people had not heeded warnings, I think it could have been a lot worse," North Carolina Gov. Roy Cooper said Tuesday as he reviewed how his state dealt with the storm.

President Joe Biden and first lady Jill Biden plan to visit Florida on Wednesday. The president was in Puerto Rico on Monday, promising to "rebuild it all" after Hurricane Fiona knocked out all power to the island two weeks ago.

Meanwhile, in Florida neighborhoods still without power, many residents have been sharing generators to keep things like refrigerators cool, and using outdoor grills to cook.

In Bonita Springs, Paula Arbuckle was sitting outside her one-story home while the sound of the generator under her carport roared. She bought a generator after Hurricane Irma left her neighborhood without power in 2017.

She hadn't used it since, but after Ian took out the lights, she's been sharing it with her next-door neighbor. Arbuckle said it's difficult being without power.

"But I'm not the only one," she said. Gesturing to her neighbor's house, she said: "I have a generator. They have a little baby over there. So we're sharing the generator between the two homes."

Associated Press reporters Bobby Caina Calvan in Fort Myers; Frisaro and David Fischer in Miami; Mike Schneider in Orlando; Gary D. Robertson in Raleigh, North Carolina; and Jeffrey Collins in Columbia, South Carolina, contributed to this report.

NOTICE OF INTENT
OFFICE OF CONSERVATION
INJECTION AND MINING DIVISION

In accordance with the laws of the State of Louisiana and the particular reference to the provisions of La R.S. 30:4, and the provisions of Statewide Order No. 29-N-1 (LAC 43:XVII.Subpart 1) as amended and adopted by the Office of Conservation of the State of Louisiana.

Company Name	Air Products Blue Energy LLC
Address	16044 Hwy 73, Building 103
City, State, Zip	Prairieville, LA, 70769
Phone	1 (610) 481-1257

has applied to the Office of Conservation, Injection and Mining Division for a permit to drill and complete a Class V Subsurface Stratigraphic Test Well to acquire geotechnical information and to serve as a possible future monitor well.

The assigned application number is 43366.

The proposed well will be in the approximate location of Lat: 30 ° 12' 32.01"N, Long: 90 ° 29' 26.40"W (NAD27-LA South), Lake Maurepas Field, St. John the Baptist Parish, Louisiana and will be identified as the MAUREPAS S TST-OM No. 01.

The well will be drilled to a depth of approximately 8,168 feet below surface with geotechnical cores, fluid samples, static pressure measurements, and other applicable information collected.

The application is available for inspection from 8:00 a.m. to 4:30 p.m., Monday through Friday in the Injection and Mining Division Office, Rm. 817, LaSalle Building, 617 North Third Street, Baton Rouge, LA.

Information concerning the applications may be obtained by calling (225) 342-5515 or by mail sent to the address stated below.

Interested parties may request a public hearing or submit written comments on the application. Such requests must be received in the Injection and Mining Division by 4:00 PM, no later than 30 days from the date of this publication. Please reference the application number on all correspondence. Correspondence may be submitted by mail to:

Office of Conservation
Injection & Mining Division
P.O. Box 94275
Baton Rouge, LA 70804-9275
Attn: Stephen H. Lee
