Legend

- Proposed Boring Location
- Parish

Data Sources:
Topographic: ESRI USA Topo Maps
Inset Basemap: ESRI Street Map

USGS Quadrangle Names:
Convent, Donaldsonville, Gonzales, Killan, Lutcher, Manchac, Mount Airy NE, Mount Airy NW, Ponchatoula, Ponchatoula SE, Reserve, Ruddock, Sorrento, Springfield

Project Location Map:
Geotech Boring Locations

Geotechnical Investigations for
LCEC CO2 Pipeline

N
W E
S

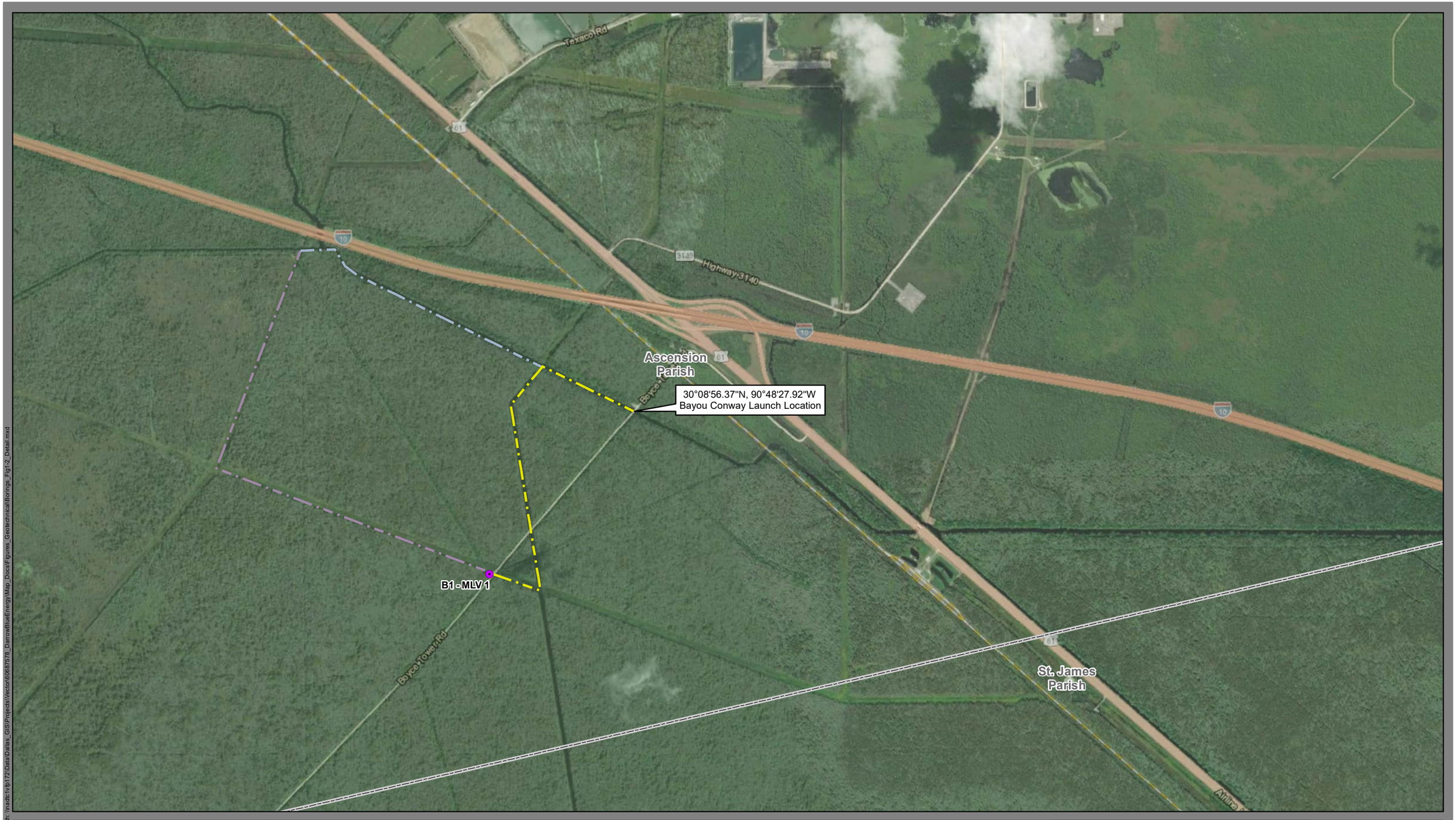
0 1 2
Miles

1 inch = 2.07 miles

August 2024

Figure 1-1

Author: joseph.rigley Document Path: \\nadc1vfp172\Data\Dallas_GIS\Projects\Vector\60667578_DarrowBlueEnergy\Map_Docs\Figures_Geotechnical\Borings_Fig1-1_ProjLocation.mxd



Geotechnical Boring Location Access Routes

Geotechnical Investigations for LCEC CO2 Pipeline

Legend

- Marsh Bore Location
- Airboat Drill Rig via Open Water/Channel (25-foot width) - INACCESSIBLE
- Airboat Drill Rig via Wetlands (25-foot width) - INACCESSIBLE
- Airboat Drill Rig via Open Water/Channel (25-foot width) - Alternate - APPROVED BY OCM 06/04/202
- Parish

1 inch = 0.28 miles

0 0.5 Miles

Data Sources:
Aerial Photo: ESRIWorld Imagery
Inset Basemap: ESRI Street Map

August 2024

Figure 1-2
Sheet 1 of 6

B2 - MLV 2

B3 - Blind River HDD

B4 - Blind River HDD

30°06'05.39"N, 90°44'09.68"W
St. James Boat Club Launch Location

B5 - MLV 3

St. James Parish

B8 - Airline HDD

B6 - Airline HDD

30°04'29.10"N, 90°44'54.52"W
St. James Parish Canal Launch Location

Airline Hwy

61

Geotechnical Boring Location Access Routes

Geotechnical Investigations for
LCEC CO2 Pipeline

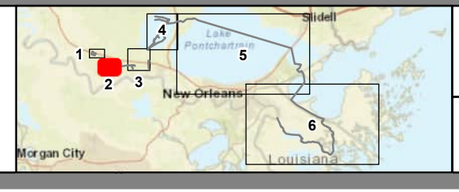
Legend

- Marsh Bore Location
- Airboat Drill Rig via Open Water/Channel (25-foot width)
- Airboat Drill Rig via Wetlands (25-foot width)
- Parish

1 inch = 0.28 miles

0 0.5
Miles

Data Sources:
Aerial Photo: ESRIWorld Imagery
Inset Basemap: ESRI Street Map



August 2024

Figure 1-2
Sheet 2 of 6

Ascension Parish

St. James Parish

St. John the Baptist Parish

B16 - MLV 9

B15 - MLV 8

30°05'34.74"N, 90°41'07.22"W
LA 641 E Launch Location

30°05'33.56"N, 90°41'08.29"W
LA 641 W Launch Location

B9 - MLV 4

B10 - MLV 5

B11 - Diversion Canal HDD

B12 - Diversion Canal HDD

B13 - MLV 6

B9 - MLV 4

SEE DETAIL INSET

30°04'56.86"N, 90°37'32.39"W
Hope Canal Launch Location

30°04'44.65"N, 90°32'45.16"W
Reserve Relief Canal Launch Location

Highway 641

W Airline Hwy

Author: joseph.ripley; Document Path: \\nadc1vfp172\Data\Dallas_GIS\Projects\Vector\60687578_DarrowBlueEnergyMap_Docs\Figures_GeotechnicalBorings_Fig1-2_Detail.mxd

Geotechnical Boring Location Access Routes

Geotechnical Investigations for
LCEC CO2 Pipeline

Legend

- Marsh Bore Location
- Offshore Bore Location
- Airboat Drill Rig via Open Water/Channel (25-foot width)
- Airboat Drill Rig via Wetlands (25-foot width)
- Airboat Drill Rig via Wetlands (25-foot width) - Alternate
- Lift Boat Drill Rig via Open Water/Channel (25-foot width)
- Parish

N W E S

1 inch = 0.73 miles

0 0.5 1

Miles

Data Sources:
Aerial Photo: ESRIWorld Imagery
Inset Basemap: ESRI Street Map

August 2024

Figure 1-2
Sheet 3 of 6

B27 - NCPT-1 (DM#2)

B28 - NCPT-2 (TDM #4)

B31 - NB-4 (INJ #6)

B29 - NCPT-4 (DM #3)

B26 - NB-1 (INJ #5)

B25 - NB-2 (INJ #7)

B24 - NCPT-3 (INJ #8)

B23 - NB-3 (INJ #9)

30°17'09.87"N, 90°24'04.67" W
Pass Manchac Channel Under Hwy 51 and I-55

Tangipahoa Parish

Livingston Parish

Lake Maurepas

B22 - SCPT-4 (DM#1)

St. John the Baptist Parish

Ascension Parish

B30 - SB-5 (INJ #5)

B21 - SB-4 (INJ #4)

B19 - SCPT-1 (DM#4)

B17 - SB-1 (INJ #1)

B20 - SB-3 (INJ #3)

B18 - SB-2 (INJ #2)

Lake Pontchartrain

B16 - MLV 9

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Geotechnical Boring Location Access Routes

Geotechnical Investigations for
LCEC CO2 Pipeline

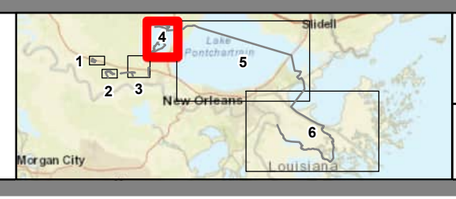
Legend

- Offshore Bore Location
- Lift Boat Drill Rig via Open Water/Channel (25-foot width)
- Parish

1 inch = 1.18 miles

0 0.5 1 1.5 2
Miles

Data Sources:
Aerial Photo: ESRIWorld Imagery
Inset Basemap: ESRI Street Map



August 2024

Figure 1-2
Sheet 4 of 6

30°17'09.87"N, 90°24'04.67" W
Pass Manchac Channel Under
Hwy 51 and I-55

Tangipahoa Parish

St. John the Baptist Parish

Lake Pontchartrain

Lake Pontchartrain

St. Tammany Parish

Jefferson Parish

St. Charles Parish

Orleans Parish

St. Bernard Parish

St. Bernard Parish

New Orleans

Lake Borgne

Geotechnical Boring Location Access Routes

Geotechnical Investigations for
LCEC CO2 Pipeline

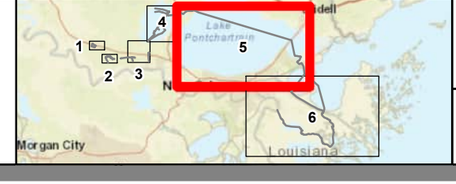
Legend

- Lift Boat Drill Rig via Open Water/Channel (25-foot width)
- Lift Boat Drill Rig via Open Water/Channel (25-foot width) - Alternate
- Parish

1 inch = 2.68 miles

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5
Miles

Data Sources:
Aerial Photo: ESRIWorld Imagery
Inset Basemap: ESRI Street Map



August 2024

Figure 1-2
Sheet 5 of 6

Geotechnical Boring Location Access Routes

Geotechnical Investigations for
LCEC CO2 Pipeline

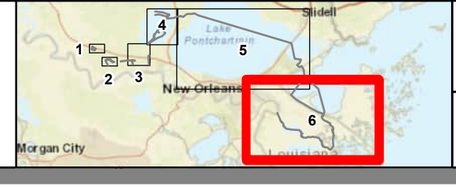
Legend

- Lift Boat Drill Rig via Open Water/Channel (25-foot width)
- Lift Boat Drill Rig via Open Water/Channel (25-foot width) - Alternate
- Parish

1 inch = 2.68 miles

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5
Miles

Data Sources:
Aerial Photo: ESRIWorld Imagery
Inset Basemap: ESRI Street Map



August 2024

Figure 1-2
Sheet 6 of 6

AIRBOAT DRILLING RIG

8'-0" X 22'-0" (DRAFT 2.0 FEET)

NOTES:

1. ALL SOIL BORINGS WILL BE PERFORMED TO A DEPTH OF 150 FT. BELOW THE MUDLINE. MUDLINE ELEVATIONS ARE EXPECTED TO RANGE FROM -4 FT. TO -5.5 FT. (NAVD88)

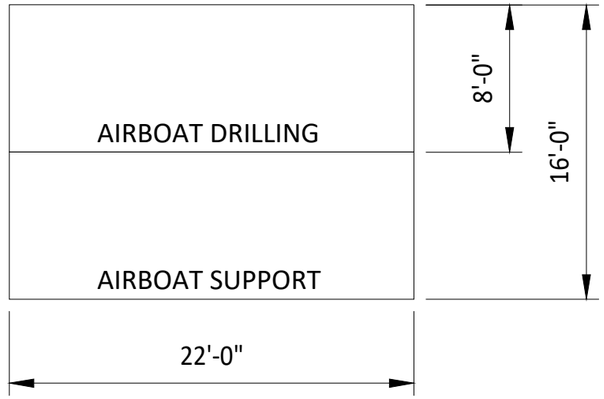
2. EACH BOREHOLE WILL HAVE APPROXIMATELY 0.50 CUBIC YARDS OF MATERIAL EXCAVATED. ANY CUTTINGS EXTRACTED OUTSIDE THE BORING ARE EXPECTED TO BE MINIMAL AND SPREAD EVENLY OUTSIDE THE BOREHOLE. UPON COMPLETION OF BOREHOLE SAMPLING, THE BOREHOLE WILL BE GROUTED WITH A CEMENT BENTONITE MIXTURE.

3. PERMITTEE SHALL CONTACT LOUISIANA ONE CALL 1 (800) 272-3020 AT LEAST FIVE DAYS PRIOR TO BEGINNING FIELDWORK.

4. EACH SOIL BORING LOCATION WILL BE ACCESSED BY ONE AIRBOAT CREW BOAT AND ONE AIRBOAT DRILL RIG. EACH LOCATION WILL BE ACCESSED FOR FOUR DAYS.

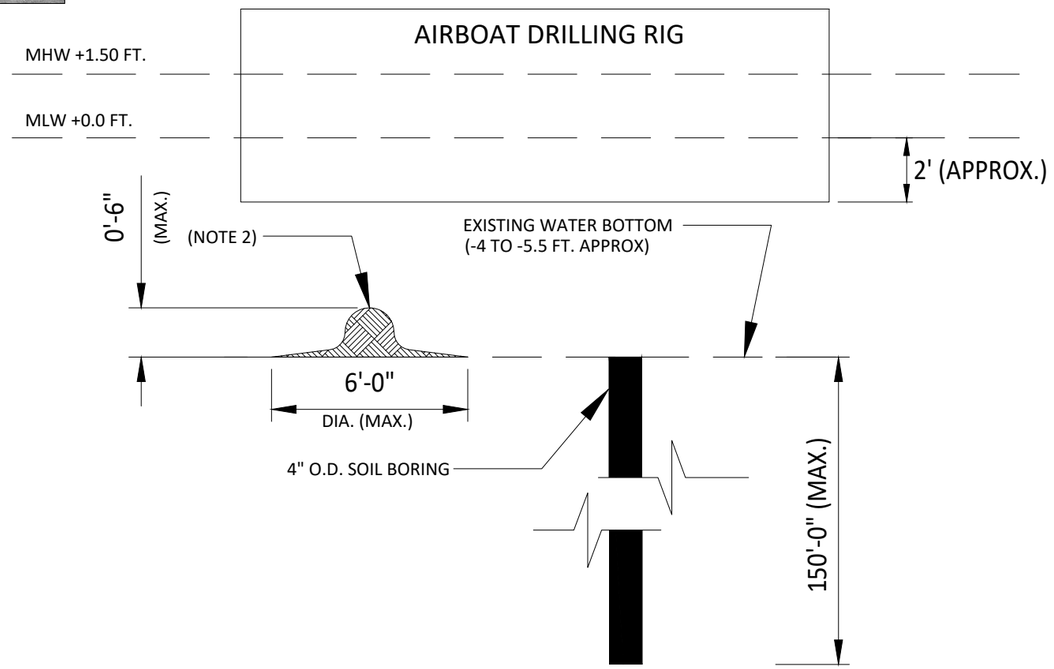
5. SPOIL PILES WILL BE DEPOSITED IMMEDIATELY ADJACENT TO THE BORE HOLE UPON WITHDRAWAL OF DRILLING EQUIPMENT. ALL SPOIL PILES WILL BE LOCATED WITHIN THE 8'x22' WORK AREA SURROUNDING THE BORE HOLE.

6. MARSH BORING #1 WILL BE ACCESSED FROM BAYOU CONWAY LAUNCH LOCATION. MARSH BORINGS #2-6 WILL BE ACCESSED FROM BRADY STREET LAUNCH LOCATION. MARSH BORING #8 WILL BE ACCESSED FROM THE ST. JOHN'S BOAT LAUNCH. MARSH BORINGS #10-13 WILL BE ACCESSED FROM HOPE CANAL LAUNCH LOCATION. MARSH BORING #15 WILL BE ACCESSED FROM RESERVE RELIEF CANAL LAUNCH LOCATION. PLEASE REFER TO FIGURE 1-2 FOR MORE DETAIL. THE KANSAS CITY SOUTHERN RAILROAD SPANNING THE BLIND RIVER (IMMEDIATELY WEST OF HIGHWAY 61) DOES NOT HAVE ENOUGH CLEARANCE TO PERMIT AIRBOAT DRILL RIG PASSAGE BENEATH THE SURFACE, AS SEEN IN ATTACHMENT 2-4.



PLAN VIEW OF WORK AREA

NOT TO SCALE



TYPICAL SOIL BORING SECTION

NOT TO SCALE

DRAWN	RML
CHECKED	CNH
ISSUE DATE	12/12/2023
PROJECT NO.	10042A22

GEOTECHNICAL INVESTIGATION FOR LCEC CO2 PIPELINE: MARSH BORING LOCATION TYPICAL

ST. JAMES, ST. JAMES PARISH, ASCENSION PARISH AND ST. JOHN THE BAPTIST PARISH, LOUISIANA

AIR PRODUCTS

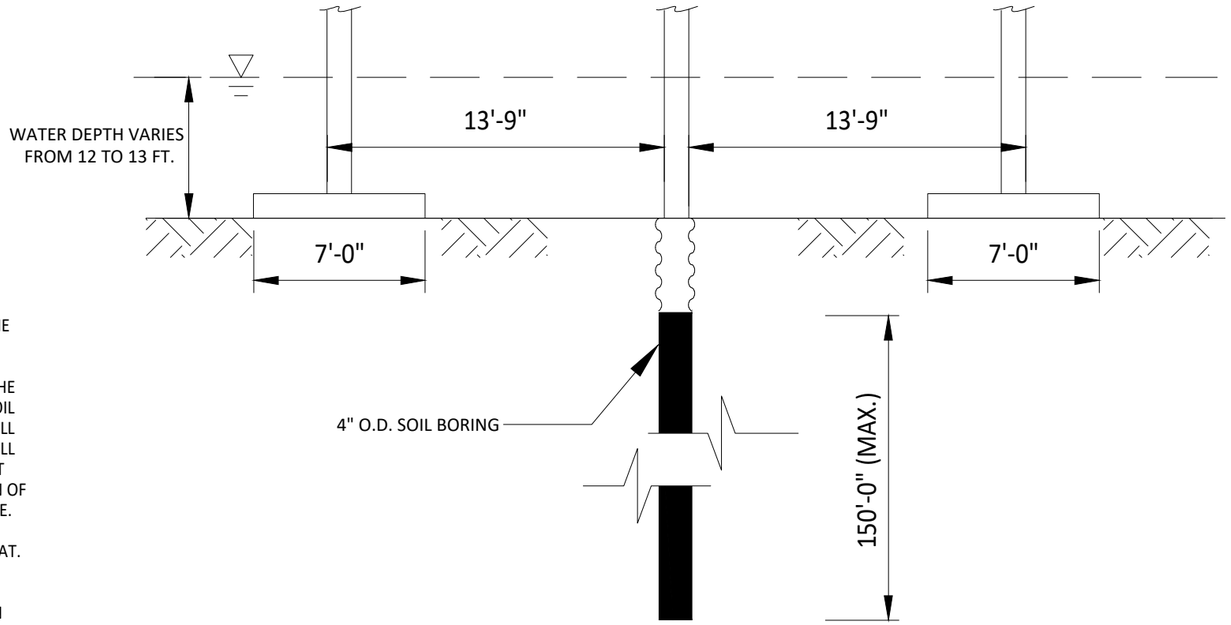
REVISION	BY
A REVISION A DATE 07-05-22	RML
B REVISION B DATE 08-15-22	LR
C REVISION C DATE 12-12-23	RML

DRAWING NUMBER: **SK-101**

AIR PRODUCTS

70 FOOT CLASS ELEVATING BOAT

RIG DIMENSIONS 24' WIDE x 65' LONG
DRAFT 4 FEET FULLY LOADED



TYPICAL SOIL BORING CROSS SECTION

NOT TO SCALE

NOTES:

1. ALL SOIL BORINGS WILL BE PERFORMED TO A DEPTH OF 150 FT. BELOW THE MUDLINE. MUDLINE ELEVATIONS ARE EXPECTED TO RANGE FROM 12-13 FOOT BELOW MWL.

2. EACH BOREHOLE WILL HAVE APPROXIMATELY 0.50 CUBIC YARDS OF MATERIAL EXCAVATED. THE BOREHOLE WILL BE ADVANCED BY ROTARY WASH USING WATER OR DRILL FLUID TO CARRY SOIL CUTTING OUT OF HOLE. THE WATER OR DRILL FLUID WILL BE RECIRCULATED THROUGH THE DRILL RIG. DRILL CUTTINGS THAT ARE FLUSHED OUT OF THE HOLE WILL BE PUMPED BACK TO THE DRILL BOAT TO THE DRILL BOAT AND COLLECTED IN A MUD TUB. THE TUB HAS A SET OF BAFFLES THAT ALLOWS SEDIMENT TO SETTLE OUT SO THAT ONLY FLUID IS RECIRCULATED. UPON COMPLETION OF BOREHOLE SAMPLING, THE BOREHOLE WILL BE GROUTED WITH A CEMENT BENTONITE MIXTURE.

3. EACH SOIL BORING LOCATION WILL BE ACCESSED BY ONE ELEVATING BOAT AND ONE CREW BOAT. EACH LOCATION WILL BE ACCESSED FOR TWO DAYS.

4. DURING THE DRILLING PROCESS, SEDIMENT WILL BE REMOVED FROM THE TUB AND STORED IN DRUMS. ALL SEDIMENT AND DRILLING FLUID WILL BE COLLECTED FOR OFFSITE DISPOSAL AT AN APPROPRIATE DISPOSAL FACILITY.

5. ALL OFFSHORE BORE LOCATIONS [B16-B31] WILL BE ACCESSED FROM PASS MANCHAC. PLEASE REFER TO FIGURE 1-2 FOR MORE DETAIL.

DRAWN	RML
CHECKED	CNH
ISSUE DATE	12/12/2023
PROJECT NO.	10042A22

GEOTECHNICAL INVESTIGATION FOR LCEC CO2 PIPELINE: OFFSHORE BORING LOCATION TYPICAL
ST. JOHN THE BAPTIST PARISH, LIVINGSTON PARISH AND TANGIPAHOA PARISH, LOUISIANA

AIR PRODUCTS

REVISION	BY
A REVISION A DATE 12-12-23	RML
B REVISION B DATE 01-05-24	MJB

DRAWING NUMBER: SK–103

AIR PRODUCTS

Attachment 2-3: Summary Tables

Table 1. Airboat Access Path Summary	
Access Type: Preferred Routes Only	**Length (miles)**
Airboat Access in Wetlands	3.78
Airboat Access in Open Water	8.14
Total:	11.92
Access Type: Alternative Routes Included	**Length (miles)**
Airboat Access in Wetlands	6.16
Airboat Access in Open Water	13.23
Total:	19.39

Table 2. Geotechnical Boring Summary

Location No. & Boring Name	Latitude	Longitude	Equipment Type	Access Point (Lat.) (Preferred)	Access Point (Lon.) (Preferred)	Access Point (Lat.) (Alternative)	Access Point (Lon.) (Alternative)	Boring Depth (LF)	Approximate Excavation (CY)	Approximate Fill (CY) Cement-bentonite grout, bentonite mud
Onshore										
B1 - MLV 1	30°08'28.81"N	90°48'55.90"W	Airboat Drilling Rig	30°08'56.37"N	90°48'27.92"W	-	-	125	0.42	0.42
B2 - MLV 2	30°06'24.17"N	90°44'58.33"W	Airboat Drilling Rig	30°04'29.10"N	90°44'54.52"W	-	-	125	0.42	0.42
B3 - Blind River HDD	30°06'21.34"N	90°44'53.38"W	Airboat Drilling Rig	30°04'29.10"N	90°44'54.52"W	-	-	150	0.50	0.50
B4 - Blind River HDD	30°06'08.15"N	90°44'36.12"W	Airboat Drilling Rig	30°04'29.10"N	90°44'54.52"W	-	-	150	0.50	0.50
B5 - MLV 3	30°05'46.99"N	90°44'09.17"W	Airboat Drilling Rig	30°04'29.10"N	90°44'54.52"W	-	-	125	0.42	0.42
B6 - Airline HDD	30°05'21.96"N	90°43'36.88"W	Airboat Drilling Rig	30°04'29.10"N	90°44'54.52"W	-	-	150	0.50	0.50
B7 - Airline HDD[1]	30°05'25.75"N	90°43'27.23"W	Airboat Drilling Rig	30°05'26.66"N	90°43'29.28"W	-	-	-	-	-
B8 - Airline HDD	30°05'29.49"N	90°43'16.54"W	Airboat Drilling Rig	30°06'05.39"N	90°44'09.68"W	-	-	150	0.50	0.50
B9 - MLV 4	30°05'33.21"N	90°41'10.58"W	Airboat Drilling Rig	30°05'33.56"N	90°41'08.29"W	-	-	125	0.42	0.42
B10 - MLV 5	30°05'49.00"N	90°38'46.12"W	Airboat Drilling Rig	30°04'56.86"N	90°37'32.39"W	30°05'34.74"N	90°41'07.22"W	125	0.42	0.42
B11 - Diversion Canal	30°05'47.07"N	90°38'00.66"W	Airboat Drilling Rig	30°04'56.86"N	90°37'32.39"W	30°05'34.74"N	90°41'07.22"W	150	0.50	0.50
B12 - Diversion Canal	30°05'45.70"N	90°37'31.70"W	Airboat Drilling Rig	30°04'56.86"N	90°37'32.39"W	30°05'34.74"N	90°41'07.22"W	150	0.50	0.50
B13 - MLV 6	30°05'44.15"N	90°36'52.40"W	Airboat Drilling Rig	30°04'56.86"N	90°37'32.39"W	30°05'34.74"N	90°41'07.22"W	125	0.42	0.42
B14 - MLV 7[1]	30°06'27.03"N	90°32'57.12"W	Airboat Drilling Rig	30°04'44.65"N	90°32'45.16"W	-	-	-	-	-
B15 - MLV 8	30°07'01.16"N	90°32'54.00"W	Airboat Drilling Rig	30°04'44.65"N	90°32'45.16"W	-	-	125	0.42	0.42
								SUBTOTAL:	**5.92**	**5.92**
Offshore - Lake Maurepas										
B16 - MLV 9[2]	30°10'08.07"N	90°32'58.52"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	125	0.42	0.42
B17 - SB-1 (INJ #1)	30°11'45.35"N	90°31'0.28"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B18 - SB-2 (INJ #2)	30°11'44.58"N	90°29'51.99"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B19 - SCPT-1 (DM #4)	30°12'39.66"N	90°31'05.83"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B20 - SB-3 (INJ #3)	30°12'04.29"N	90°28'43.76"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B21 - SB-4 (INJ #4)	30°12'48.14"N	90°27'52.04"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B22 - SCPT-4 (DM #1)	30°13'28.93"N	90°28'22.94"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B23 - NB-3 (INJ #9)	30°16'39.95"N	90°26'46.91"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B24 - NCPT-3 (INJ #8)	30°17'10.60"N	90°27'31.66"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B25 - NB-2 (INJ #7)	30°17'28.38"N	90°28'31.63"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B26 - NB-1 (INJ #5)	30°17'37.06"N	90°30'46.19"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B27 - NCPT-1 (DM #2)	30°18'26.77"N	90°30'49.09"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B28 - NCPT-2 (TDM #4)	30°18'10.54"N	90°28'30.55"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B29 - NCPT-4 (DM #3)	30°17'42.19"N	90°26'39.26"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B30 - SB-5 (INJ #5)	30°12'54.75"N	90°29'38.94"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
B31 - NB-4 (INJ #6)	30°17'41.65"N	90°29'37.69"W	Lift Boat Drilling Rig	30°17'09.87"N	90°24'04.67"W	-	-	150	0.50	0.50
								SUBTOTAL:	**7.92**	**7.92**
								TOTAL:	**13.84**	**13.84**

[1] Previously permitted B7 and B14 were not included in the onshore investigation due to inaccessibility based on field conditions. Future mobilizations for these two locations are not proposed. The excavation and fill amounts, as a result, were removed from Table 2.
[2] Previously permitted B16 was not included in the onshore investigation due to inaccessibility based on field conditions. The B16 location has been revised to be within the southern end of Lake Maurepas and is now proposed as an offshore geobore.