

UNITED STATES GOVERNMENT  
MEMORANDUM

January 2, 2018

To: Public Information (MS 5030)  
From: Plan Coordinator, FO, Plans Section (MS  
5231)

Subject: Public Information copy of plan  
Control # - N-10003  
Type - Initial Exploration Plan  
Lease(s) - OCS-G13081 Block - 954 Ewing Bank Area  
OCS-G35303 Block - 953 Ewing Bank Area  
Operator - W & T Offshore, Inc.  
Description - Wells A, B, and C  
Rig Type - Not Found

Attached is a copy of the subject plan.

It has been deemed submitted as of this date and is under review for approval.

Leslie Wilson  
Plan Coordinator

<b>Site Type/Name</b>	<b>Botm Lse/Area/Blk</b>	<b>Surface Location</b>	<b>Surf Lse/Area/Blk</b>
WELL/A	G35303/EW/953	6740 FNL, 1086 FWL	G13081/EW/954
WELL/B	G35303/EW/953	6740 FNL, 1086 FWL	G13081/EW/954
WELL/C	G13081/EW/954	6890 FSL, 7670 FEL	G13081/EW/954



**W&T OFFSHORE**

**JOINT INITIAL  
EXPLORATION PLAN**

**LEASES OCS-G 35303 & 13081  
EWING BANK BLOCKS 953 & 954**

Contact Information:

Valerie Land

Regulatory Manager

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Date Submitted: 10/18/2017	No. of Copies Submitted:	
Amended: <b>11/03/2017, 12/01/2017</b>		
Plan Control No.: N-10003	Proprietary:	1 & CD
Plans Coordinator: L. Wilson	Public:	1 & CD
<b>PUBLIC COPY</b>		





# W&T OFFSHORE

JOINT INITIAL  
EXPLORATION PLAN  
LEASES OCS-G 35303 & 13081  
EWING BANK BLOCKS 953 & 954

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### A.1 Plan Information Form

Activities under this EP include the drilling and completion of three new wells from two satellite locations in Ewing Bank Block 954 (Lease OCS-G 13081) with some bottom holes in Ewing Bank Block 953 (Lease OCS-G 35303). W&T will utilize a moored semi-submersible to drill the subject wells.

Included as **Attachment A-1** is the OCS Plan Information Form BOEM-137 detailing the well location information and a schedule of activities.

Also, please find the Pay.Gov receipt, included as **Attachment A-2**, showing the paid amount of \$7,346 applicable to the cost recovery fee associated with this document.

### A.2 Location

Included as **Attachments A-3** and **A-4** are Well Location Maps depicting the surface and bottom hole locations (Proprietary only) of the subject wells. A Bathymetry Map, included as **Attachment A-5**, shows the water depths at each proposed well site location.

Since W&T will be utilizing a moored drilling unit to drill and complete these wells, please find included with this plan the following maps each depicting the maximum anchor radius spreads for the new well sites:

- **Attachment A-6** – Seafloor Features Map
- **Attachment A-7** – Near-Seafloor Features Map
- **Attachment A-8** – Structure Horizon ‘A’ Map
- **Attachment A-9** – Amplitude Anomalies Map
- **Attachment A-10** – Sonar Mosaic Map

### A.3 Safety and Pollution Prevention Features

Safety features on the drilling unit will include well control, pollution prevention, and blowout prevention equipment as described in Title 30 CFR Part 250, Subparts C, D, E, and G; and as further clarified by BSEE/BOEM Notices to Lessees, and current policy making invoked by the BSEE/BOEM, Environmental Protection Agency and the U.S. Coast Guard. Appropriate life rafts, life jackets, ring buoys, etc., will be maintained on the facility at all times.

Pollution prevention measures include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris.

### A.4 Storage Tanks and Production Vessels

All facility tanks with an oil storage capacity of 25 bbls or more as defined in Title 30 CFR 254.6, and are associated with these operations, are detailed in the table below.

<b>Type of Storage Tank</b>	<b>Type of Facility</b>	<b>Tank Capacity (bbls)</b>	<b>Number of Tanks</b>	<b>Total Capacity (bbls)</b>	<b>Fluid Gravity (API)</b>
Fuel Oil (Marine Diesel)	Semi-Submersible	18,000	4+	70,000	38°

**A.5 Pollution Prevention Measures**

Activities proposed in this EP do not affect the State of Florida; therefore, this information is not being provided.

**A.6 Additional Measures**

W&T does not propose additional safety, pollution prevention, or early spill detection measures beyond those required by 30 CFR 250.

**OCS PLAN INFORMATION FORM**

**General Information**

Type of Plan:	Exploration Plan: <input checked="" type="checkbox"/>	Development Operations Coordination Document: <input type="checkbox"/>
Company Name: W&T Offshore, Inc.		BOEM Operator Number: 01284
Address: 9 E. Greenway Plaza; Suite 300		Contact Person: Valerie Land
Houston, Texas 77046		Phone Number: 713-624-7272
Email Address: vland@wt offshore.com		
If a service fee is required under 30 CFR 550.125(a), provide the		Amount Paid: \$7,346
Receipt No. 75345105237		

**Project and Worst Case Discharge (WCD) Information**

Leases: G35303/G13081	Area: EW	Blocks: 953/954	Project Name (If applicable): NA
Objectives;	Oil: <input checked="" type="checkbox"/>	Gas: <input checked="" type="checkbox"/>	Sulphur: <input type="checkbox"/>
	Salt: <input type="checkbox"/>	Onshore Support Base: Fourchon, LA	
Well Name: A	Total Volume of WCD: 6,750,000 bbls		API Gravity: 32°
Distance to closest land (Miles): 71		Volume from uncontrolled blowout: 64,883 per day	
Have you previously provided information to verify the calculations and assumptions for your WCD?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If so, please provide the Plan Control No. of the EP or DOCD with which this information was provided:			
Do you propose to use new or unusual technology to conduct your activities?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Do you propose to use a vessel with anchors to install or modify a structure?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Do you propose any facility that will serve as a host facility for deepwater subsea development?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**Description of Proposed Activities and Tentative Schedule (Mark all that apply)**

Proposed Activity	Start Date	End Date	No. of Days
Exploration drilling of Well Location A	05/01/2018	06/09/2018	40
Exploration drilling of Well Location B	07/01/2018	08/09/2018	40
Exploration drilling of Well Location C	08/31/2018	10/08/2018	40
Well completion of Well Location A	06/10/2018	06/30/2018	20
Well completion of Well Location B	08/10/2018	08/30/2017	20
Well completion of Well Location C	10/09/2018	10/29/2018	20

**Description of Drilling Rig**

**Description of Structure**

Jackup	Drillship	Caisson	Tension Leg Platform
Gorilla Jackup	Platform Rig	Fixed Platform	Compliant Tower
XX Semisubmersible	Submersible	SPAR	Guyed Tower
DP Semisubmersible	Other (Attach Description)		
Drilling Rig Name (if known):			

**Description of Lease Term Pipelines**

From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (feet)

**ATTACHMENT A-1**





**OCS PLAN INFORMATION FORM (CONTINUED)**

Include one copy of this page for each proposed well/structure

Proposed Well/Structure Location					
Well or Structure Name/Number (If renaming well or structure, reference previous name): C			Previously reviewed under an approved EP or DOCD? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is this an existing well or structure? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If this is an existing well/structure, then list the API No. or Complex ID No.:			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
WCD Info	For wells, volume of uncontrolled blowout (bbls/day): 64,883		For structures, volume of all storage and pipelines (bbls): 0		API Gravity of Fluid: 32.8°
Surface Location		Bottom-Hole Location		Completions (for multiple completions, enter separate lines)	
Lease No.	OCS-G 13081				
Area Name	EW				
Block No.	954				
Blockline Call	N/S Departure: 6890' FSL E/W Departure: 7670' FEL				
Lambert X	2,431,690.00 (UTM 15) 2,253,825.22 (LA South)				
Lambert Y	10,176,170.00 (UTM 15) -234,228.33 (LA South)				
Latitude	28° 01' 12.988" N				
Longitude	90° 32' 49.400" W				
Water Depth: 766'					
Anchor Radius (if applicable) in feet: 6,000'					
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)					
Anchor Name/No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor

## Valerie Land

---

**From:** notification@pay.gov  
**Sent:** Monday, October 16, 2017 10:06 AM  
**To:** Valerie Land  
**Subject:** <https://protect-us.mimecast.com/s/QQeYBlcQXQqik> Payment Confirmation: BOEM Exploration Plan - BF

Your payment has been submitted to <https://protect-us.mimecast.com/s/xN7WBwua6a9cW> and the details are below. If you have any questions regarding this payment, please contact Brenda Dickerson at (703) 787-1617 or [BseeAccountsReceivable@bsee.gov](mailto:BseeAccountsReceivable@bsee.gov).

Application Name: BOEM Exploration Plan - BF  
<https://protect-us.mimecast.com/s/xN7WBwua6a9cW> Tracking ID: 265EKG1L  
Agency Tracking ID: 75345105237  
Transaction Type: Sale  
Transaction Date: 10/16/2017 11:05:37 AM EDT

Account Holder Name: Valerie Land

Transaction Amount: \$7,346.00  
Card Type: AmericanExpress  
Card Number: \*\*\*\*\*1159

Region: Gulf of Mexico  
Contact: Valerie Land 713-624-7272  
Company Name/No: WT Offshore, Inc., 01284  
Lease Number(s): 35303, 13081, , ,  
Area-Block: Ewing Bank EW, 953: Ewing Bank EW, 954: , : , : ,  
Surface Locations: 2

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

ATTACHMENT A-2

Y = 10,185,120.00



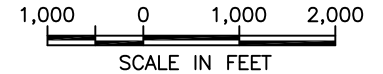
**PROPOSED WELL LOCATIONS**

LOCATION	BLOCK	CALLS		UTM 15 COORDINATES		LA SOUTH COORDINATES		LATITUDE	LONGITUDE	WD	MD	TVD
'A' (SL)	EW 954	1,086.00' FWL	6,740.00' FNL	X = 2,424,606.00	Y = 10,178,380.00	X = 2,246,769.73	Y = -231,924.07	28° 01' 36.265"N	90° 34' 07.907"W	683'		
'B' (SL)	EW 954	1,086.00' FWL	6,740.00' FNL	X = 2,424,606.00	Y = 10,178,380.00	X = 2,246,769.73	Y = -231,924.07	28° 01' 36.265"N	90° 34' 07.907"W	683'		

**EW 953**  
OCS-G 35303  
W & T ENERGY VI LLC

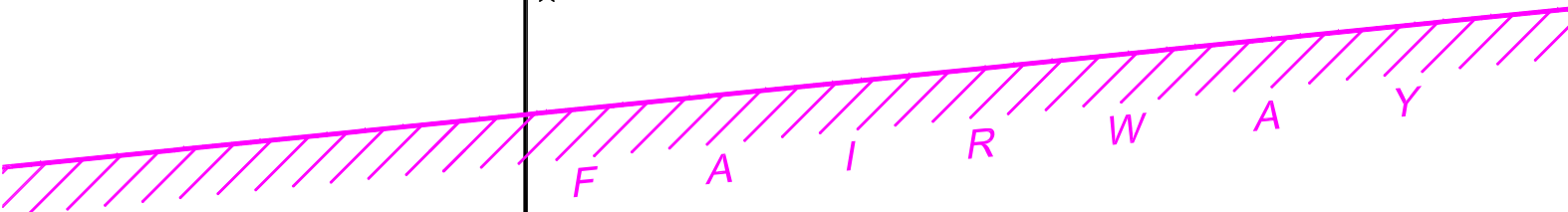
**EW 954**  
OCS-G 13081  
W & T OFFSHORE INC

'A' & 'B' (SL)





SHEET 1 OF 1  
PUBLIC INFORMATION

X = 2,423,520.00



Y = 10,169,280.00

**ATTACHMENT A-3**

 <b>W&amp;T OFFSHORE</b>			
EXPLORATION PLAT <b>PROPOSED WELLS 'A' &amp; 'B'</b> OCS-G 35303 BLOCK 953 WITH COMMON SURFACE LOCATION IN BLOCK 954, EWING BANK AREA GULF OF MEXICO			
DATUM: NAD 27			
SPHEROID: CLARKE 1866			
PROJECTION: U.T.M.			
ZONE: 15			
 <b>Echo OFFSHORE LLC</b> 36499 Perkins Road Prairieville, Louisiana 70769 Tel: 225-673-2163			
DRAWN BY: MEK	DATE: 04/05/17	CHECKED BY: RJN	DRAWING No.: 17-007 EXP A&B
REV. DATE:	REV. No.:	SCALE: AS NOTED	JOB No.: 17-007-31

Y = 10,185,120.00



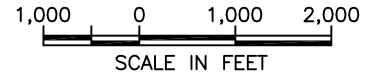
**PROPOSED WELL LOCATION**

LOCATION	BLOCK	CALLS		UTM 15 COORDINATES		LA SOUTH COORDINATES		LATITUDE	LONGITUDE	WD	MD	TVD
'C' (SL)	EW 954	7,670.00' FEL	6,890.00' FSL	X = 2,431,690.00	Y = 10,176,170.00	X = 2,253,825.22	Y = -234,228.33	28° 01' 12.988"N	90° 32' 49.400"W	766'		

**EW 954**  
OCS-G 13081  
W & T OFFSHORE INC

'C' (SL)

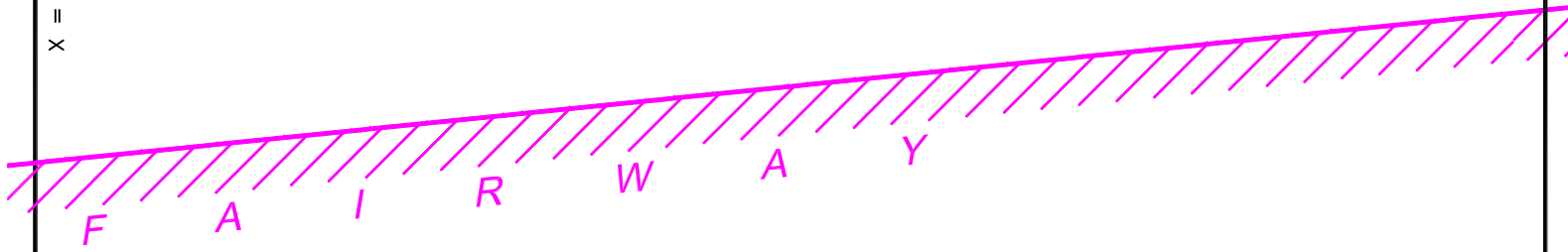
**EW 954**  
OCS-G 35304  
WALTER OIL & GAS CORPORATION



SHEET 1 OF 1  
PUBLIC INFORMATION

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X = 2,439,360.00



Y = 10,169,280.00

**ATTACHMENT A-4**



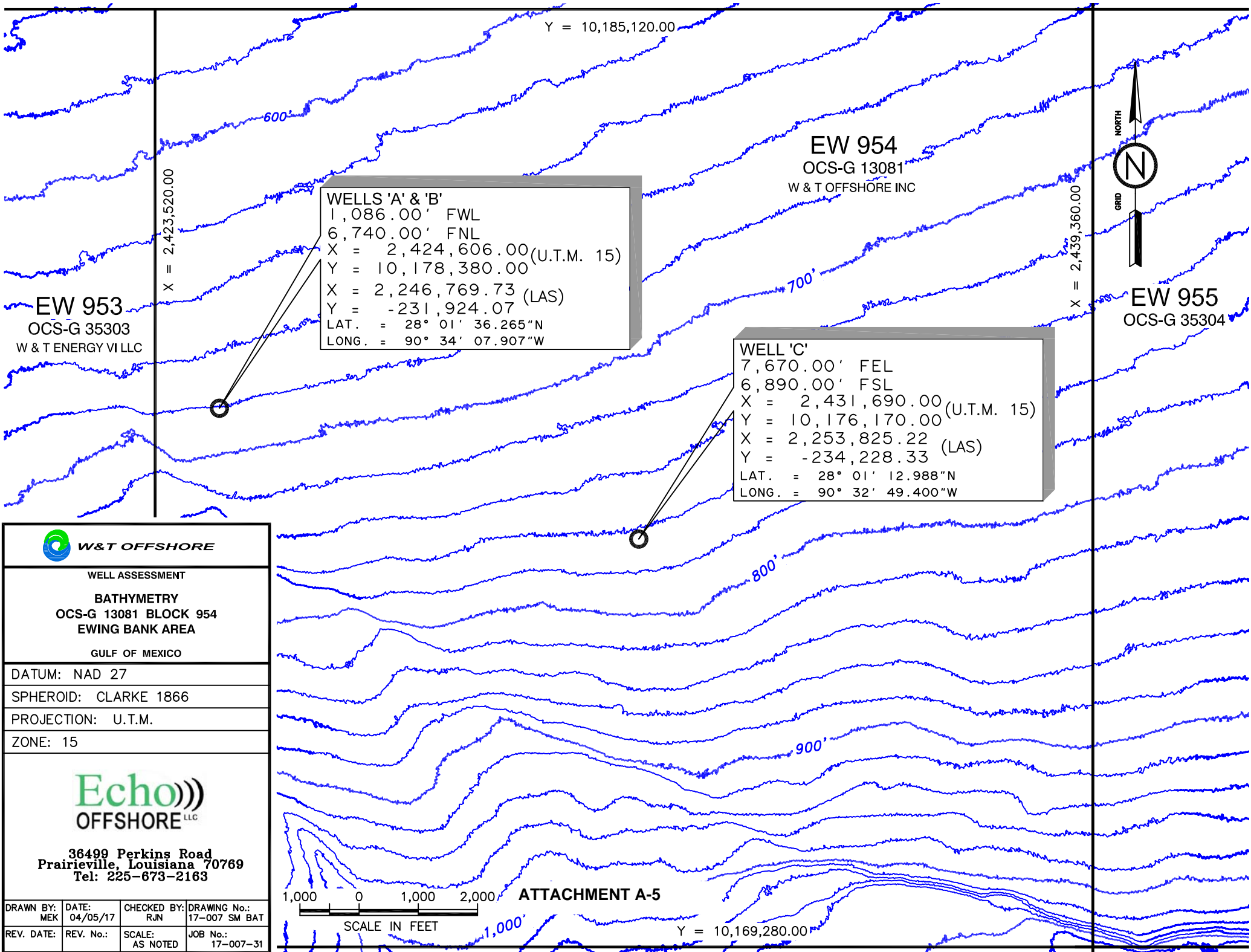
EXPLORATION PLAT

**PROPOSED WELL 'C'**  
OCS-G 13081 BLOCK 954  
EWING BANK AREA  
GULF OF MEXICO

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: U.T.M.
ZONE: 15

**Echo)))**  
OFFSHORE LLC  
36499 Perkins Road  
Prairieville, Louisiana 70769  
Tel: 225-673-2163

DRAWN BY: MEK	DATE: 04/05/17	CHECKED BY: RJN	DRAWING No.: 17-007 EXP 'C'
REV. DATE:	REV. No.:	SCALE: AS NOTED	JOB No.: 17-007-31



WELL ASSESSMENT

BATHYMETRY  
 OCS-G 13081 BLOCK 954  
 EWING BANK AREA

GULF OF MEXICO

DATUM: NAD 27

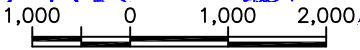
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PROJECTION: U.T.M.

ZONE: 15



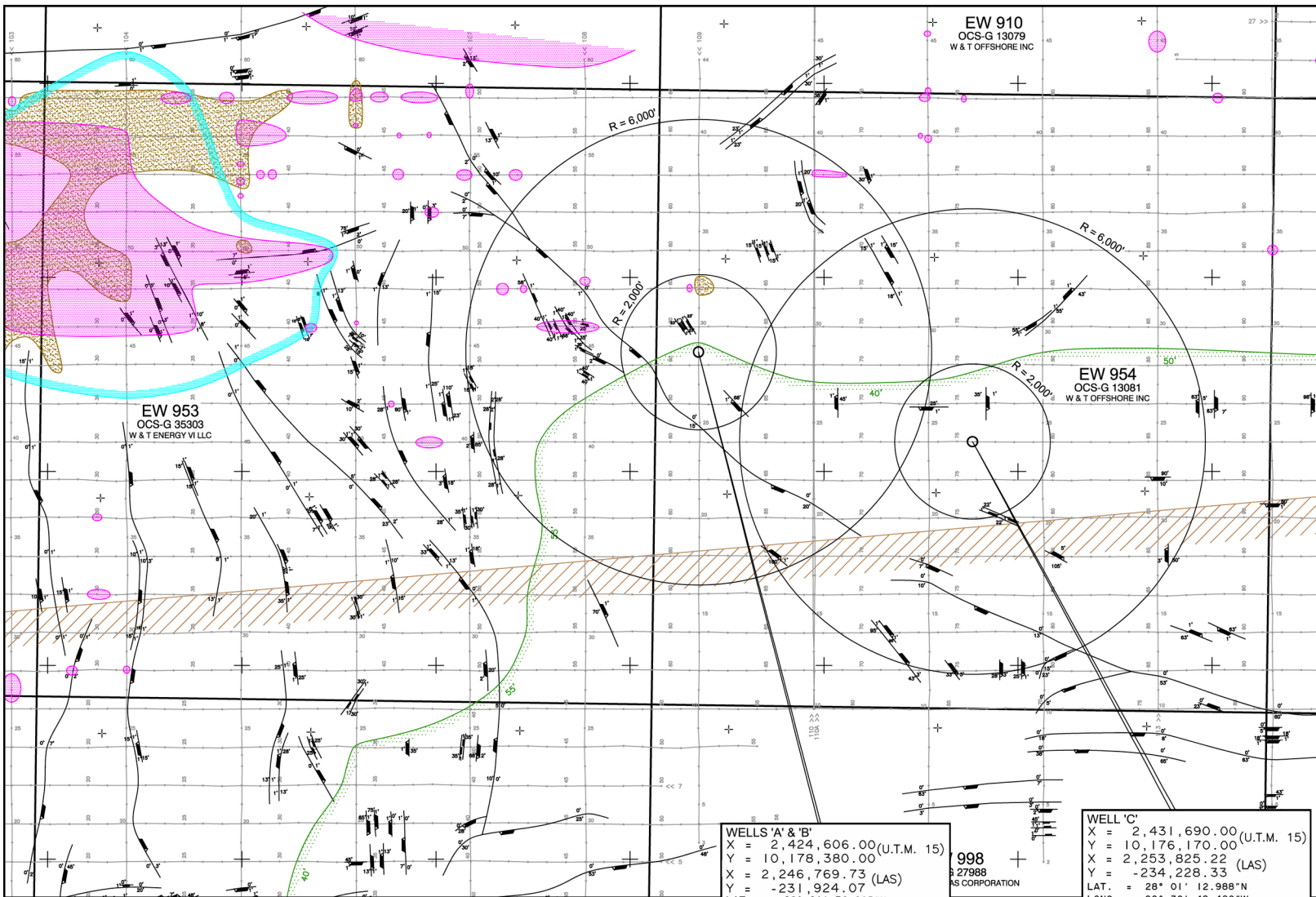
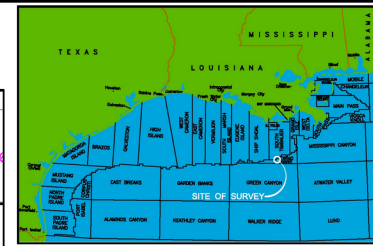
36499 Perkins Road  
 Prairieville, Louisiana 70769  
 Tel: 225-673-2163



ATTACHMENT A-5

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REV. DATE:	REV. No.:	SCALE: AS NOTED	JOB No.: 17-007-31

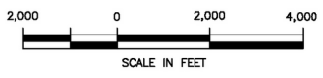




- LEGEND**
- << 102 SURVEY DIRECTION AND LINE NO.
  - SURVEY TRACK AND POSITION FIX BASED ON R/V NIKOLA GPS POSITION
  - NORMAL FAULT
  - SHALLOW FAULT ZONE (DEPTH 0-25' BML)
  - GAS VENTS AT SEAFLOOR
  - TOP OF REGIONAL UNCONFORMITY
  - NEAR SEAFLOOR UPLIFTED SEDIMENTS
  - GAS INTRUSIONS (DEPTH 0-150' BML)

**ATTENTION:**  
Map features were derived from separate databases, public records, and from the geophysical data described in the accompanying report. Echo offshore assumes no responsibility for the accuracy of the public data.

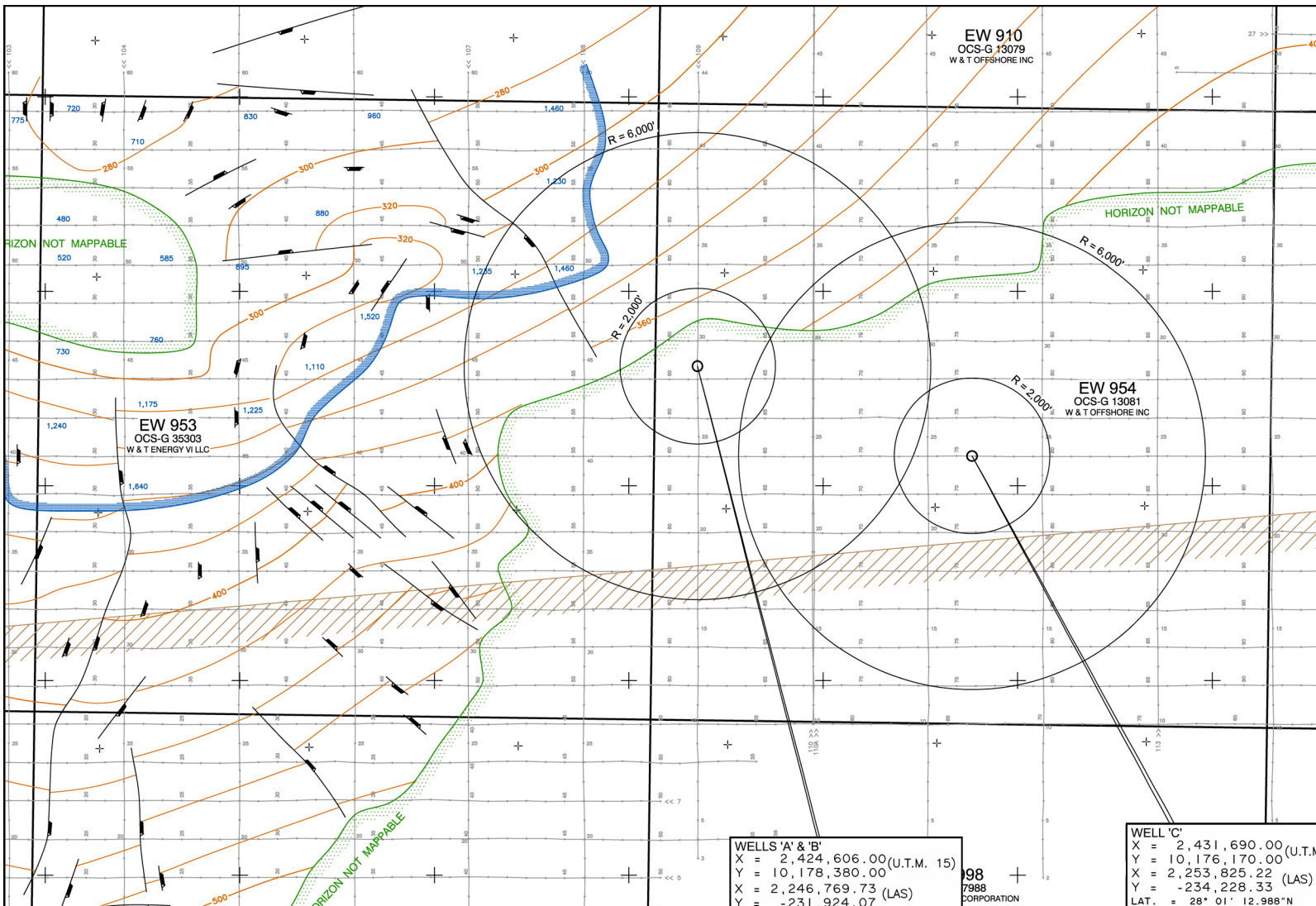
ATTACHMENT A-7



**W&T OFFSHORE**  
**EWING BANK BLOCK 953 & 954**  
**OFFSHORE LOUISIANA**

**Ewing Bank Area Well Assessment**  
**Near-Seafloor Features**

Date: 05/17/17



- LEGEND**
- << 102 SURVEY DIRECTION AND LINE NO.
  - SURVEY TRACK AND POSITION FIX BASED ON RTK/INS/GPS POSITION
  - 300 STRUCTURE (DEPTHS IN MILLISECONDS BSL) (CONTOUR INTERVAL 20 MILLISECONDS)
  - NORMAL FAULT
  - 800 ACOUSTIC ATTENUATION (DEPTHS IN MILLISECONDS BSL) TWO-WAY TRAVEL TIME

**ATTENTION:**  
Map features were derived from separate databases, public records, and from the geophysical data described in the accompanying report. Echo offshore assumes no responsibility for the accuracy of the public data.

**WELLS 'A' & 'B'**  
 X = 2,424,606.00 (U.T.M. 15)  
 Y = 10,178,380.00  
 X = 2,246,769.73 (LAS)  
 Y = -231,924.07  
 LAT. = 28° 01' 36.265"N  
 LONG. = 90° 34' 07.907"W

198  
798B  
CORPORATION

**WELL 'C'**  
 X = 2,431,690.00 (U.T.M. 15)  
 Y = 10,176,170.00  
 X = 2,253,825.22 (LAS)  
 Y = -234,228.33  
 LAT. = 28° 01' 12.988"N  
 LONG. = 90° 32' 49.400"W

ATTACHMENT A-8

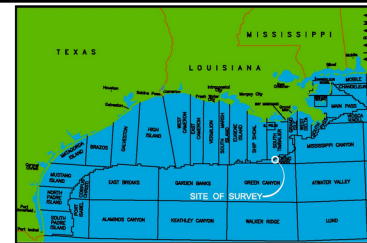


**W&T OFFSHORE**

**EWING BANK BLOCK 953 & 954  
OFFSHORE LOUISIANA**

**Ewing Bank Area Well Assessment  
Structure Horizon 'A' Map**

**Date: 05/17/17**

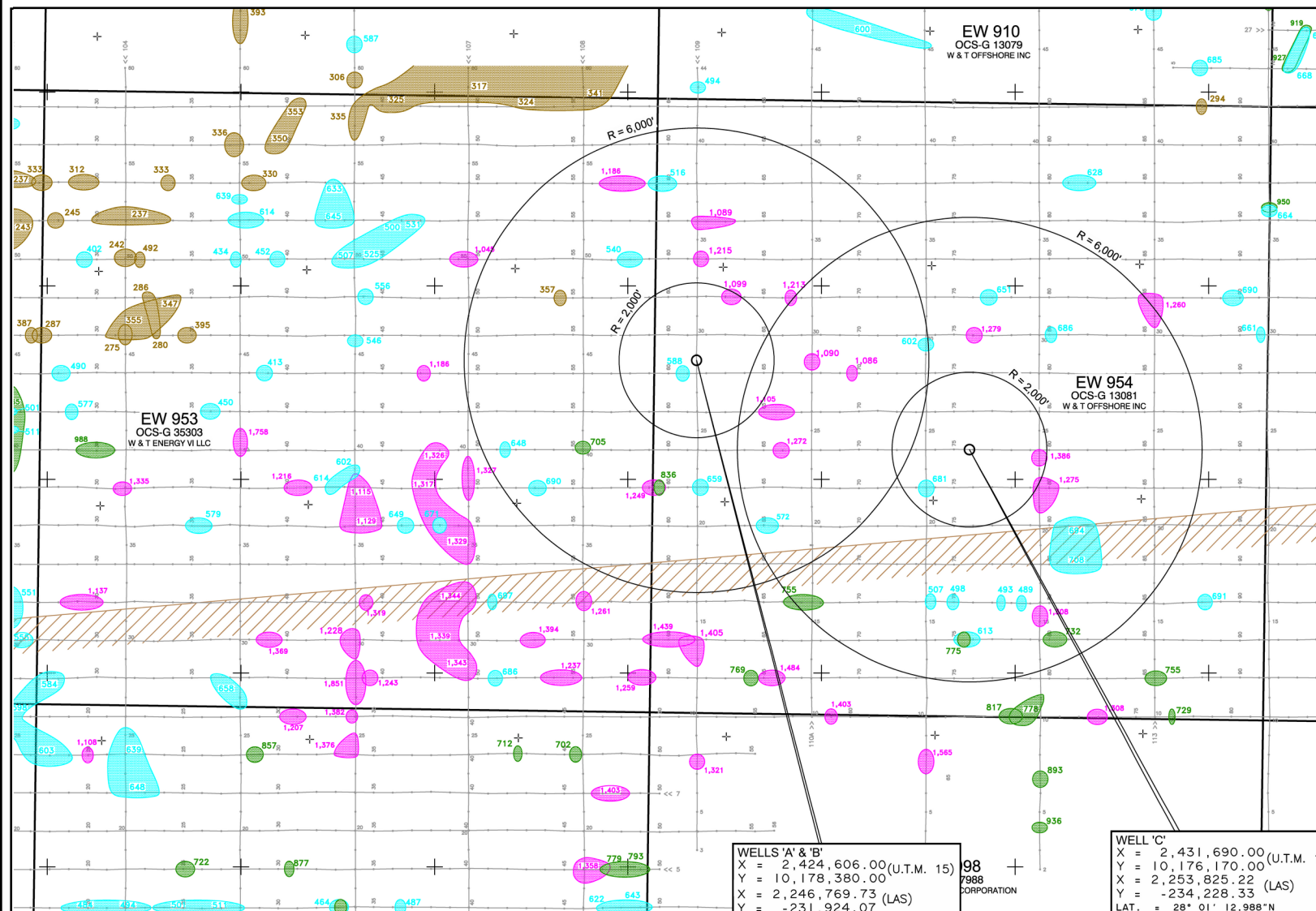


**LEGEND**

- << 102 SURVEY DIRECTION AND LINE NO.
- SURVEY TRACK AND POSITION FIX BASED ON R/V NIKOLA GPS POSITION
- 230 AMPLITUDE ANOMALY (DEPTH IN MILLISECONDS BSL) TWO-WAY TRAVEL TIME - DEPTH 0-399ms
- 485 AMPLITUDE ANOMALY (DEPTH IN MILLISECONDS BSL) TWO-WAY TRAVEL TIME - DEPTH 400-699ms
- 732 AMPLITUDE ANOMALY (DEPTH IN MILLISECONDS BSL) TWO-WAY TRAVEL TIME - DEPTH 700-999ms
- 1,784 AMPLITUDE ANOMALY (DEPTH IN MILLISECONDS BSL) TWO-WAY TRAVEL TIME - DEPTH 1,000+ ms

**ATTENTION:**

Map features were derived from separate databases, public records, and from the geophysical data described in the accompanying report. Echo offshore assumes no responsibility for the accuracy of the public data.

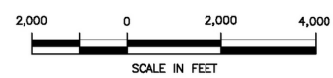


**WELLS 'A' & 'B'**  
 X = 2,424,606.00 (U.T.M. 15)  
 Y = 10,178,380.00  
 X = 2,246,769.73 (LAS)  
 Y = -231,924.07  
 LAT. = 28° 01' 36.265"N  
 LONG. = 90° 34' 07.907"W

**98**  
 7988  
 CORPORATION

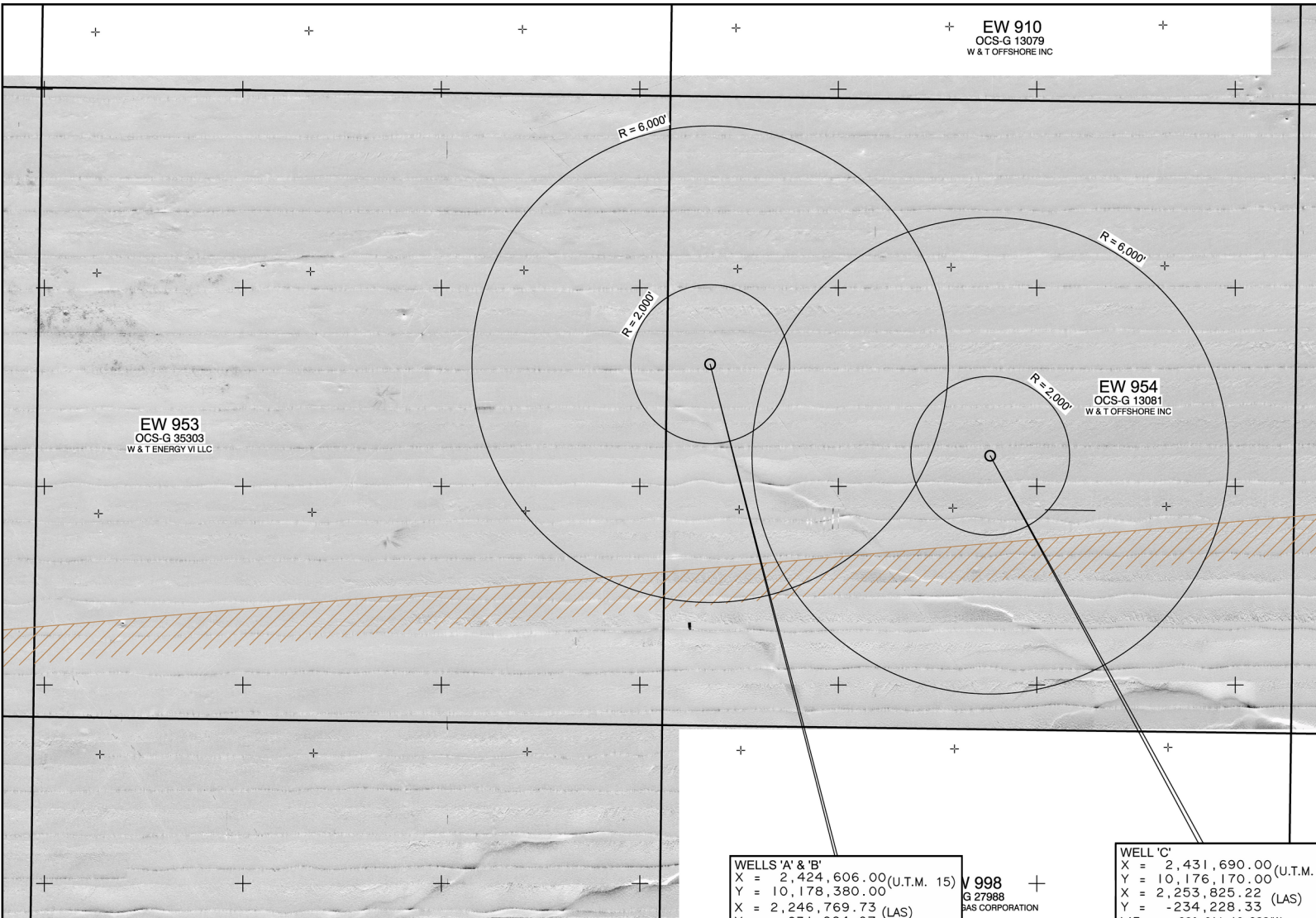
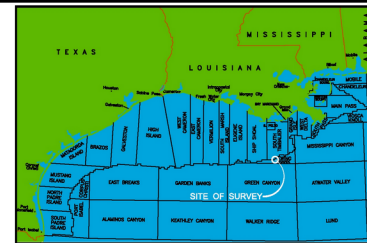
**WELL 'C'**  
 X = 2,431,690.00 (U.T.M. 15)  
 Y = 10,176,170.00  
 X = 2,253,825.22 (LAS)  
 Y = -234,228.33  
 LAT. = 28° 01' 12.988"N  
 LONG. = 90° 32' 49.400"W

**ATTACHMENT A-9**



**W&T OFFSHORE**  
**EWING BANK BLOCK 953 & 954**  
**OFFSHORE LOUISIANA**

**Ewing Bank Area Well Assessment**  
**Amplitude Anomalies**  
 Date: 05/17/17



**EW 953**  
OCS-G 35303  
W & T ENERGY VI LLC

**EW 910**  
OCS-G 13079  
W & T OFFSHORE INC

**EW 954**  
OCS-G 13081  
W & T OFFSHORE INC

**WELLS 'A' & 'B'**  
X = 2,424,606.00 (U.T.M. 15)  
Y = 10,178,380.00  
X = 2,246,769.73 (LAS)  
Y = -231,924.07  
LAT. = 28° 01' 36.265"N  
LONG. = 90° 34' 07.907"W

**W 998**  
G 27988  
SAS CORPORATION

**WELL 'C'**  
X = 2,431,690.00 (U.T.M. 15)  
Y = 10,176,170.00  
X = 2,253,825.22 (LAS)  
Y = -234,228.33  
LAT. = 28° 01' 12.988"N  
LONG. = 90° 32' 49.400"W

**ATTENTION:**  
Map features were derived from separate databases, public records, and from the geophysical data described in the accompanying report. Echo offshore assumes no responsibility for the accuracy of the public data.

**ATTACHMENT A-10**



**W&T OFFSHORE**

---

**EWING BANK BLOCK 953 & 954  
OFFSHORE LOUISIANA**

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**Ewing Bank Area Well Assessment  
Sonar Mosaic Map**

**Date: 05/17/17**

## **APPENDIX B: GENERAL INFORMATION**

### **B.1 Applications and Permits**

The following additional Federal Agencies will be contacted for additional permitting in order to conduct the operations as proposed in this plan:

<b>Agency</b>	<b>Permit</b>
Army Corp of Engineers (ACOE)	General Permit to place anchors in the Fairway located to the south of our proposed wells
Bureau of Safety and Environmental Enforcement (BSEE)	Applications for Permits to Drill Applications for Permits to Initially Complete Wells

No other Federal, State, or Local Agency permits are needed to conduct our proposed operations.

### **B.2 Drilling Fluids**

The operations proposed within this EP do not affect the States of Florida, Texas or Mississippi, nor does it affect the Protective Zones of the Flower Garden or the Stetson Bank; therefore, this information is not included.

### **B.3 New or Unusual Technology**

W&T does not propose to use any new or unusual technology to carry out the proposed exploration activities.

### **B.4 Bonding Statement**

In accordance with the regulations contained in Title 30 CFR 556.901, W&T Offshore, Inc. (GOM Company No. 01284) maintains a \$3,000,000.00 area-wide development bond covering the activities proposed in this EP. Should additional financial assurance be required, W&T will provide BOEM evidence of such financial assurance prior to conducting any activities under this plan.

### **B.5 Oil Spill Financial Responsibility (OSFR)**

W&T Offshore, Inc. (GOM Company No. 01284) has demonstrated oil spill financial responsibility for the facilities proposed in this EP according to 30 CFR Part 253; and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

### **B.6 Deepwater Well Control Statement**

W&T Offshore, Inc., GOM Company No. 01284, has the financial capability to drill a relief well and conduct other emergency well control operations.

### **B.7 Suspension of Production**

W&T does not anticipate the submittal of a Suspension of Production at this time.

Lease OCS-G 35303 is under its primary term due to expire on June 30, 2019.

Lease OCS-G 13081 is being held under ongoing unit production.

### **B.8 Blowout Scenario**

The worst-case blowout scenario would be when the primary and secondary well control have failed. In the A well this would result in the well flowing uncontrolled from all permeable sands in

the 12-1/4" open hole or the 9-1/2" hole section. In the B well this would result in the well flowing uncontrolled from all permeable sands in the 12-1/4" open hole and for the C well from the 9-1/2" open hole section. If BOP failure occurs, hydrocarbons could potentially be flowing into the atmosphere at rates estimated to be 64,883 bbls/day oil and 419 MMscf/day gas. If this flow rate is sustained for the required time to drill a relief well (104 days), the total volume would be 6.75 MBC and 43.5 BCF gas.

<b>Action Item</b>	<b>No. of Days</b>
1. Acquire rig	14 days
2. Time to move rig onsite	10 days
3. Drill relief well	80 days
<b>TOTAL TIME TO DRILL RELIEF WELL</b>	<b>104 days</b>

The most likely blowout scenario would probably occur while tripping the drill string and either no drill pipe is in the hole or only a small portion. Assuming drill pipe is in the hole, then both sets of pipe rams and blind shear rams would have to fail in order to have uncontrolled flow. In the worst-case scenario, there would be no drill pipe in the hole and the blind shear rams would have to fail. This scenario is used in the worst-case discharge calculations.

If a blowout scenario occurred, all workers on the drilling rig would follow abandonment procedures and be deployed in their respective lifeboats. The emergency shut down devices would shut down all engines as well as all sources of ignition. If uncontrolled flow occurred through the riser and did not ignite, then it is possible that hydrocarbons could enter the water at the above listed rate. If the hydrocarbons ignite, then most of the hydrocarbons would burn off and the actual hydrocarbons entering the water would be significantly less. The history of blowouts indicates that the probability of the hydrocarbons igniting is extremely high when emitted to the atmosphere. If the leak is subsea, the hydrocarbons would enter the water directly with a much less probability of igniting when they reached the water's surface.

**Potential for well to bridge over**

If a blowout scenario occurred, this well would have an extremely high probability of bridging off. Typically, formations in the Gulf of Mexico at this depth and pressure will produce sand if the differential pressure across the sand face is high. In a blowout scenario with uncontrolled flow, the hydrostatic pressure at the sand face likely would be reduced to an estimated 7.0 ppg gradient or possibly lower. Oil, gas, and water from all permeable sands in the open hole interval would enter the well bore. The actual differential pressure across the entire open hole interval would be affected by the gas, oil, and water percentages. Assuming a worst-case scenario with no water influx, 7.0 ppg hydrostatic gradient and 13.1 ppg reservoir pressure, the differential pressure at the sand would approach 5925 psi. This very high differential pressure would most likely cause the sand to fail, resulting in sand/formation flowing up the wellbore. Bridging off the wellbore and/or collapse of the sand near the wellbore would probably occur within a few minutes in an uncontrolled blowout.

**Likelihood for surface intervention to stop blowout**

In the event of a blowout with hydrocarbons to surface, there is a very high probability that the Rig would catch fire and be seriously damaged or destroyed. The likelihood of any surface intervention to stop the blowout is extremely low.

#### **Availability of Rig to drill relief well**

As of this date, there are about three (3) floating moored rigs in the GOM that are capable of drilling this well and/or relief well. The anchor spread for the relief well rig will need to be installed around existing pipeline infrastructure. There are dynamically positioned rigs in the GOM that could also drill a relief well however the shallow water depth would result in a very tight watch circle.

#### **Feasibility of drilling relief well from area platform**

None. There are no platforms close enough to drill a relief well from that respective platform.

#### **Methods of Minimizing Blowout Occurrence**

By maintaining primary well control the probability of having a blowout is very low. Primary well control is maintaining sufficient hydrostatic pressure to prevent unwanted flows into the well bore. The keys to maintaining primary control are:

- Pre-planning, pore pressure analysis, and casing point selection.
  1. Analysis of offset wire line logs, evaluation of seismic, geologic interpretation, offset mud weights, offset kick information, BHP information, and offset drilling problems.
  2. Under pressured or depleted formations would be identified.
  3. Analysis of the offset fracture gradient (FG) data from offset shoe tests.
  4. Optimize casing program for anticipated mud weights and required kick tolerance.
- Preparation of a detailed drilling program. The drilling program will include the following:
  1. Casing Design (using industry standard safety factors)
  2. BOP program
  3. Mud Program (Mud Weight vs Depth Plot)
  4. Cement Program
  5. Hydraulics Program
  6. Directional Program
  7. Formation Evaluation Program (Mud Logging, LWD logs, Wireline Logs)
  8. Detail drilling procedure for each hole section.
  9. Drilling Hazard Analysis (Potential loss zones, faults, pressure transition intervals, wellbore stability issues).
- Onsite surveillance consisting of the following:
  1. Gas detectors at the shakers for the monitoring of background, connection, and trip gas trends.
  2. Mud logging for lithology evaluation, pressure analysis, and correlation.
  3. Installation and monitoring of pit and flowline devices for real time monitoring of pit volumes and changes in flow rates.
  4. Real time LWD GR-Resistivity log data to identify hydrocarbon bearing sands, pressure transition intervals, and correlation with offset wells.
- Onsite application of good drilling practices.
  1. Keep hole full on trips.

2. Monitoring hole fill-ups via a trip tank.
3. Control drill when applicable to prevent overloading the hole with cuttings or formation gas.
4. Check for flow after a drilling break.
5. Minimize surge and swab pressures while tripping.
6. Minimize surge pressures while running casing.
7. Maintaining proper mud rheology's to help minimize estimated circulating density (ECD) and enhance hole cleaning.
8. Monitor all drilling parameter trends (pump rate/pressure, torque/drag, ROP, ECD, background/conn/trip gas, hole ballooning, cuttings load over shakers, change of cuttings size/shape, mud losses to hole, casing wear)

In the case where the primary well control is lost, proper use of secondary control methods will return the well to primary control. Secondary control is the proper use of well control equipment and techniques to circulate out unwanted inflows. The keys to secondary control are as follows:

- Drilling and pressure control equipment that is properly sized and capable of performing under emergency circumstances.
  1. The equipment will be well maintained.
  2. The equipment will be tested to BOEM and Industry specifications.
  3. The equipment will be sized for anticipated pressures.
- The well's casing program is designed to handle the estimated pressures plus a safety factor. Well control pressures are considered in the casing design.
- Proper training of crews and rig personnel in well control.
- Experienced company supervision.

## **APPENDIX C: GEOLOGICAL AND GEOPHYSICAL INFORMATION**

### **C.1 Geological Description**

Proprietary Copy only.

### **C.2 Structure Contour Map(s)**

Proprietary Copy only.

### **C.3 Interpreted 2-D and/or 3-D Seismic Line(s)**

Proprietary Copy only.

### **C.4 Geological Structure Cross-Section(s)**

Proprietary Copy only.

### **C.5 Shallow Hazards Report**

Walter Oil and Gas Company (in partnership with W&T Offshore, Inc.) contracted Tesla Offshore, LLC to conduct a high-resolution geophysical survey over Blocks 311 & 320, South Timbalier Area, South Addition; and Blocks 867, 933, 952, 953, 954, 955, 996, and 997, Ewing Bank Area to include our the proposed well sites under this EP as well as the 6000 feet anchor radius as depicted in Appendix A. This survey was conducted between March 29 – April 12, 2015.

Copies of this Geophysical Survey were submitted under an approved Initial Exploration Plan (Control No. N-9936) for Ewing Bank Block 955 filed by Walter Oil & Gas Corporation. Plan Control No. N-9936 was approved on March 30, 2016.

### **C.6 Shallow Hazards Assessment**

A shallow hazards assessment has been prepared for each proposed surface location, evaluating seafloor and subsurface geological and manmade features and conditions that may adversely affect drilling operations, and is included as **Attachments C-14** and **C-15**.

### **C.7 High-Resolution Seismic Lines**

Attached to one Proprietary Copy of this Plan are annotated high-resolution survey lines closest to each of the proposed well locations.

### **C.8 Stratigraphic Column**

Proprietary Copy only.

### **C.9 Time vs. Depth Tables**

Sufficient well control data for the target areas proposed in this EP exists; therefore, seismic time versus depth tables for the proposed well locations are not required.

April 5, 2017

Job No. 17-007-31

Bureau of Ocean Energy Management (MS 5230)  
Gulf of Mexico OCS Region  
1201 Elmwood Park Blvd.  
New Orleans, LA 70123-2394

**RE: W&T Offshore. Inc  
Proposed Wells 'A' & 'B' OCS-G 35303  
w/ Common Surface Location in Block 954, Ewing Bank Area (OCS-G  
13081)  
Shallow Hazards and Archaeological Assessment**

W&T Offshore, Inc. (W&T) proposes to drill the proposed Wells 'A' & 'B' from the following common surface location in Block 954, Ewing Bank Area:

NAD 27		
Unprojected	Latitude: 28° 01' 36.265 " N	Longitude: 90° 34' 07.904 " W
UTM 15	FWL: 1,086.00'	FNL: 6,740.00'
	X: 2,424,606.00	Y: 10,178,380.00
LAS	X: 2,246,769.73	Y: -231,924.07

W&T Offshore, Inc. in partnership with Walter Oil & Gas Corporation contracted Tesla Offshore, LLC to conduct a high-resolution geophysical survey over all of Block 320 and the southern portion of Block 311, South Timbalier Area, South Addition, all of Blocks 911, 953, 954, 955, Ewing Bank Area, and portions of Blocks 867, 952, 996 and 997, Ewing Bank Area. The survey was performed between March 29<sup>th</sup> and April 12<sup>th</sup>, 2015, using 300 meter primary grid spacing and 900 meter tie lines. W&T selected Echo Offshore to prepare this shallow hazard and archaeological assessment for the proposed drill site to comply with **NTL No. 2008-G05** and **NTL No. 2005-G07** from the Bureau of Ocean Energy Management (BOEM), Gulf of Mexico Region. Geophysical record copies are enclosed for the side scan sonar, subbottom profiler, and processed seismic sections from the survey line nearest the proposed surface location as required by the BOEM in **NTL No. 2008-G04**. This assessment addresses seafloor conditions within a proposed 6,000' anchor radius surrounding the proposed well location and sub-seafloor conditions within a 2,000' radius surrounding the location.

- **Water depth** is approximately 683 feet surrounding the proposed drill site. The seafloor slopes to the south/southeast at an approximate rate of 1.4°.
- **Seafloor sediments** reportedly consist of clay (USDI MMS Visual No. 3, 1983).
- **Seafloor installations** closest to the proposed well site include the 14 & 16" Manta Ray pipeline bundle (Segment Nos. 7814 & 7812). This pipeline bundle runs from northwest to southeast and the as-built position for this pipeline is ~315 feet NE of the proposed well located, however, the pipeline was identified approximately 596 feet to the northeast of the proposed well at its closest point based on the 2015 geophysical survey.

**W&T Offshore. Inc**  
**Proposed Wells 'A' & 'B' OCS-G 35303**  
**w/ Common Surface Location in Block 954, Ewing Bank Area (OCS-G 13081)**  
**Shallow Hazards and Archaeological Assessment**  
**Page 2**

- **Magnetic data** was recorded up to and slightly beyond the 200m (656 feet) isobath in accordance with NTLs No. 2005-G07 and 2008-G05. Although the well location falls in water depths greater than 656 feet, the proposed anchor radius straddles the 200m isobath. No anomalies recommended for avoidance are located within 1,000 feet of the proposed location. The following anomalies recommended for avoidance fall within 6,000 feet of the proposed well site: 71, 357, 65, 355, 125, and 360. All six (6) were recommended for avoidance by 100 feet. These unidentified magnetic anomalies are interpreted as representing varying quantities of seafloor or near-seafloor point-source ferrous debris and are not considered archaeologically significant.
- **Sidescan sonar** verified that the seafloor immediately surrounding the proposed well site was clear of protruding obstructions and the seafloor is smooth, featureless, and appears stable. Three (3) seafloor scarps are located southwest of the proposed location with the nearest at a distance of 1,187 feet. These scarps trend northwest to southeast and are the seafloor expression of shallow normal faults that are downthrown to the southwest. No slumps or signs of seafloor instability are associated with these scarps and they are not interpreted as a hazard or constraint to drilling activities. Since the faults are downthrown to the southwest, any localized slope failure would also be to the southwest, away from the proposed surface location.

The nearest sonar targets are nos. 19 and 20, located approximately 1,532 and 1,424 feet north, respectively, of the proposed surface location. These sonar contacts have no associated magnetic anomalies and are interpreted as debris associated with lease development, fishing activities, or vessel traffic. Sonar Target no. 23 was recommended for avoidance by 1,000' pending further investigation. This target lies over 7,700' SW of the proposed well site and the proposed anchor radius will not intersect the recommended avoidance zone.

BOEM reports water bottom anomalies over 10,000' to the NNW, over 11,000' to the west, and over 12,000' to the south of the proposed well. The features located within the survey area typically corresponded with seafloor outcrops and subseafloor zones of gas-intrusion, but are all well beyond the area of impact associated with the proposed well. No outcrops or areas of apparent expulsion were evident on the geophysical records in the vicinity of the proposed well sites.

- **Subbottom data** at the proposed surface location shows an uppermost stratigraphic unit that is acoustically amorphous with the exception of a few poorly-continuous low-amplitude reflectors. This unit is 28 feet thick at the proposed wellsite and is interpreted as consisting of coarser sediments (primarily silt or fine sand) with small amounts of interbedded clay. An erosional unconformity marks the base of this unit.

**Proposed Wells 'A' & 'B' OCS-G 35303  
w/ Common Surface Location in Block 954, Ewing Bank Area (OCS-G 13081)  
Shallow Hazards and Archaeological Assessment  
Page 3**

Below the uppermost amorphous unit lie primarily moderate to high amplitude parallel reflectors with good continuity to the depth of subbottom profiler penetration. This sequence is interpreted as consisting of layers of primarily clay, possibly alternating with fine silt. The proposed wellbore intersects a regional unconformity at a depth of 55 feet BML.

Four small, buried normal faults within 2,000 feet of the proposed location were mapped from subbottom profiler data. The nearest is located 670 feet to the north and burial depths range from 23 to 68 feet below the seafloor. These faults are isolated to single tracklines and do not extend to depth. They are interpreted as resulting from differential compaction, possibly due to dewatering, and are not considered constraints to drilling operations.

A zone of small buried faults and a faint gas intrusion were also noted approximately 1,650 feet north of the proposed location. Like the individually mapped faults, these faults are small, limited in extent, do not extend to depth, and likewise do not pose a constraint to drilling operations. The faint gas intrusion is evidenced by a very slight dimming of the reflectors on the subbottom profiler data. No seafloor expression of this feature is noted and it is likely the result of a very small amount of low-pressure, possibly biogenic gas. Due to its distance from the proposed location, the gas intrusion is not considered a constraint to drilling operations.

The three fault scarps noted in the Sidescan Sonar section of this letter are also clearly evident on the subbottom profiler data. The fault planes associated with these scarps deepen to the southwest away from the proposed wellsite and the wellbore was moved specifically to avoid these faults. They do not pose a constraint to drilling operations.

- **Processed seismic data** (2.0 seconds) recorded approximately 1.3 seconds BML of usable subsurface data. The seafloor and two subsurface horizons (A and B) were mapped as part of the interpretation and hazard reporting effort. Subsurface unit A (seafloor to Horizon A) is characterized as poorly reflecting parallel bedded strata of good continuity. Subsurface unit B (Horizon A to Horizon B) is characterized as poorly to moderately reflective parallel to disrupted subparallel bedded strata. Unit C (Horizon B to the limit of investigation) is characterized by disrupted parallel to subparallel strata intermixed with abundant chaotic reflectors. Faults and seismic amplitude anomalies were also mapped from the seismic data.

The proposed well bore encounters no amplitude anomalies. Two seismic amplitude anomalies are noted within 2,000 feet of the proposed wellbore. The nearest is 387 feet southwest of the proposed location at 588 milliseconds BSL. This seismic amplitude anomaly is not located on the same seismic line as the well location, however. The second seismic amplitude anomaly is 1,768 feet northeast of the proposed location at 1,099 milliseconds BSL.

The proposed wellbore does not intersect any faults noted on the subbottom profiler or high-resolution 2D seismic data.

**Proposed Wells 'A' & 'B' OCS-G 35303  
w/ Common Surface Location in Block 954, Ewing Bank Area (OCS-G 13081)  
Shallow Hazards and Archaeological Assessment  
Page 4**

**Conclusions**


The operator has identified the primary hazards to rig movements, ancillary anchor and/or mooring deployments, and drilling. The proposed surface location will be marked with DGPS during rig moves and drilling to comply with the **BOEM On-Site Requirements** specified in **NTL No. 2008-G05, Section VI, Item B-2(a)**. No offset well information was provided for this report. If available, information from the two EW953 No. 1 wells (OCS-G-06919 and OCS-G-16581) and the EW998 No. 1 well (OCS-G-27988) should be reviewed for evidence of difficulties encountered during drilling. Specific attention should be paid to any indications of shallow water flow, shallow gas accumulations, or lost time incidents during the drilling of the top-hole section. While the area addressed in this letter lies north of the GC Red Shallow Water Flow (SWF) unit, shallow water flow assessments typically are not performed using medium-penetration 2D seismic data. Shallow water flow assessments normally require the use of geographically extensive 3D seismic datasets that intersect wells where documentation on the presence or absence of shallow water flow is available.


No man-made objects that would pose a constraint to drilling operations are noted in the immediate vicinity of the proposed wellbore. The locations of the Manta Ray pipeline bundle, side scan sonar contacts, and designated unidentified magnetic anomalies should be noted and they should be avoided during construction activities. Temperature and pressure conditions are not favorable for the presence of gas hydrates within the study area. No seismic amplitude anomalies mapped from high-resolution 2D seismic data will be intersected by the proposed wellbore. The risk of encountering shallow gas is considered to be negligible.


No sonar targets, magnetic anomalies, or other features on the geophysical data were recorded which were interpreted as possible shipwrecks, or possible high probability areas for prehistoric habitation within 2,000 feet of the proposed well location. Pursuant to 30 CFR 550.194 (c), 30 CFR 550.101 (c), and **NTL No. 2005-G07**, if any archaeological or potentially historically significant materials are observed during lease development, operations will immediately cease in that area and appropriate BOEM/BSEE personnel will be notified within 48 hours of discovery.

The operator and subcontractors will apply the safest and best available technologies during rig moves and drilling operations.

Sincerely,

  
Mike Taylor, PG  
Marine Geologist

  
Bruce Samuel, PG  
Geologist

  
Matt Keith, RPA  
Marine Archaeologist

April 5, 2017

Job No. 17-007-31

Bureau of Ocean Energy Management (MS 5230)  
Gulf of Mexico OCS Region  
1201 Elmwood Park Blvd.  
New Orleans, LA 70123-2394

**RE: W&T Offshore. Inc**  
**Proposed Well 'C' OCS-G 13081**  
**Block 954, Ewing Bank Area**  
**Shallow Hazards and Archaeological Assessment**

W&T Offshore, Inc. (W&T) proposes to drill the proposed Well 'C' from the following surface location in Block 953, Ewing Bank Area:

NAD 27		
Unprojected	Latitude: 28° 01' 12.988 " N	Longitude: 90° 32' 49.400 " W
UTM 15	FEL: 7,670.00'	FSL: 6,890.00'
	X: 2,431,690.00	Y: 10,176,170.00
LAS	X: 2,253,825.22	Y: -234,228.33

W&T Offshore, Inc. in partnership with Walter Oil & Gas Corporation contracted Tesla Offshore, LLC to conduct a high-resolution geophysical survey over all of Block 320 and the southern portion of Block 311, South Timbalier Area, South Addition, all of Blocks 911, 953, 954, 955, Ewing Bank Area, and portions of Blocks 867, 952, 996 and 997, Ewing Bank Area. The survey was performed between March 29<sup>th</sup> and April 12<sup>th</sup>, 2015, using 300 meter primary grid spacing and 900 meter tie lines. W&T selected Echo Offshore to prepare this shallow hazard and archaeological assessment for the proposed drill site to comply with **NTL No. 2008-G05** and **NTL No. 2005-G07** from the Bureau of Ocean Energy Management (BOEM), Gulf of Mexico Region. Geophysical record copies are enclosed for the side scan sonar, subbottom profiler, and processed seismic sections from the survey line nearest the proposed surface location as required by the BOEM in **NTL No. 2008-G04**. This assessment addresses seafloor conditions within a proposed 6,000' anchor radius surrounding the proposed well location and sub-seafloor conditions within a 2,000' radius surrounding the location.

- **Water depth** is approximately 766 feet surrounding the proposed drill site. The seafloor slopes to the south/southeast at an approximate rate of 1.6°.
- **Seafloor sediments** reportedly consist of clay (USDI MMS Visual No. 3, 1983).
- **Seafloor installations** closest to the proposed well include the Walter 2" and 4" pipelines (Segments 17925 & 17924) running north/northeast to south/southwest, approximately 1,752 feet to the west. No other infrastructure is located within 2,000' of the proposed well site. The 14 & 16" Manta Ray pipeline bundle (Segments 7814 & 7812) was identified ~3,800' to the SW.

**W&T Offshore. Inc**  
**Proposed Well 'C' OCS-G 13081**  
**Block 954, Ewing Bank Area**  
**Shallow Hazards and Archaeological Assessment**  
**Page 2**

- **Magnetic data** is not required in water depths exceeding 200m (656 feet) in accordance with NTLs No. 2005-G07 and 2008-G05.
- **Sidescan sonar** verified that the seafloor immediately surrounding the proposed well site is smooth, featureless, and appears stable. A well-defined seafloor drag scar that trends northwest to southeast is noted on side scan sonar data approximately 199 feet northeast of the proposed well site. It is likely that this drag scar is associated with drilling or pipeline construction activities that have occurred in the vicinity. No seeps, expulsion features, mounds, pinnacles, reefs or other topographic features of note are located within 2,000 feet of the proposed wellsite.

No sonar targets are located within 2,000 feet of the proposed well site. The only sonar target within the proposed 6,000 foot radius is Target No. 22, a 25 x 14 foot irregular target recommended for avoidance by 50 feet as a potential hazard only.

BOEM reports water bottom anomalies in the area, the closest instance of which lies approximately 9,400' to the SSW. No outcrops or areas of apparent expulsion were evident on the geophysical records in the vicinity of the proposed well sites.

- **Subbottom data** at the proposed wellsite shows an uppermost stratigraphic unit that is acoustically amorphous with no apparent internal reflectors. This unit is 23 feet thick at the wellsite and is interpreted as consisting of coarser sediments (primarily silt or fine sand) with small amounts of interbedded clay. An erosional unconformity marks the base of this unit.

Below that lie primarily moderate to high amplitude parallel reflectors with good continuity to the depth of subbottom profiler penetration.

Four small, buried normal faults within 2,000 feet of the proposed location were mapped from subbottom profiler data. The nearest is located approximately 1,045 feet to the north and burial depths range from 22 to 35 feet below the seafloor. These faults are isolated to single tracklines and do not extend to depth. They are interpreted as resulting from differential compaction, possibly due to dewatering, and are not considered constraints to drilling operations.

- **Processed seismic data** (2.0 seconds) recorded approximately 1.3 seconds BML of usable subsurface data. The seafloor and two subsurface horizons (A and B) were mapped as part of the interpretation and hazard reporting effort. Subsurface unit A (seafloor to Horizon A) is characterized as poorly reflecting parallel bedded strata of good continuity. Subsurface unit B (Horizon A to Horizon B) is characterized as poorly to moderately reflective parallel to disrupted subparallel bedded strata. Unit C (Horizon B to the limit of investigation) is characterized by disrupted parallel to subparallel strata intermixed with abundant chaotic reflectors. Faults and seismic amplitude anomalies were also mapped from the seismic data.

**W&T Offshore. Inc**  
**Proposed Well 'C' OCS-G 13081**  
**Block 954, Ewing Bank Area**  
**Shallow Hazards and Archaeological Assessment**  
**Page 3**

Three seismic amplitude anomalies are noted within 2,000 ft of the proposed wellbore. The nearest is 1,350 feet southwest of the proposed location at a two way travel time of 681 milliseconds BSL. The two remaining seismic amplitude anomalies are 1,805 feet east and 1,921 feet east-southeast of the proposed location at two way travel times of 1,386 and 1,275 milliseconds BSL, respectively.

The proposed wellbore does not intersect any faults noted on the subbottom profiler or high-resolution 2D seismic data.

### **Conclusions**

The operator has identified the primary hazards to rig movements, ancillary anchor and/or mooring deployments, and drilling. The proposed surface location will be marked with DGPS during rig moves and drilling to comply with the **BOEM On-Site Requirements** specified in **NTL No. 2008-G05, Section VI, Item B-2(a)**. No offset well information was provided for this report. If available, information from the two EW953 No. 1 wells (OCS-G-06919 and OCS-G-16581) and the EW998 No. 1 well (OCS-G-27988) should be reviewed for evidence of difficulties encountered during drilling. Specific attention should be paid to any indications of shallow water flow, shallow gas accumulations, or lost time incidents during the drilling of the top-hole section.

No man-made objects that would pose a constraint to drilling operations are noted in the immediate vicinity of the proposed wellbore. The locations of the Walter and Manta Ray pipelines and side scan sonar contact No. 22 should be noted and they should be avoided during construction activities. Temperature and pressure conditions are not favorable for the presence of gas hydrates within the study area. No seismic amplitude anomalies mapped from high-resolution 2D seismic data will be intersected by the proposed wellbore. The risk of encountering shallow gas is considered to be negligible.


While the area addressed in this letter lies north of the GC Red Shallow Water Flow (SWF) unit, shallow water flow assessments typically are not performed using medium-penetration 2D seismic data. Shallow water flow assessments normally require the use of geographically extensive 3D seismic datasets that intersect wells where documentation on the presence or absence of shallow water flow is available.


No sonar targets or other features on the geophysical data were recorded which were interpreted as possible shipwrecks, or possible high probability areas for prehistoric habitation within 2,000 feet of the proposed well location. Pursuant to 30 CFR 550.194 (c), 30 CFR 550.101 (c), and **NTL No. 2005-G07**, if any archaeological or potentially historically significant materials are observed during lease development, operations will immediately cease in that area and appropriate BOEM/BSEE personnel will be notified within 48 hours of discovery.

**W&T Offshore. Inc**  
**Proposed Well 'C' OCS-G 13081**  
**Block 954, Ewing Bank Area**  
**Shallow Hazards and Archaeological Assessment**  
**Page 4**

The operator and subcontractors will apply the safest and best available technologies during rig moves and drilling operations.

Sincerely,

  
Mike Taylor, PG  
Marine Geologist

  
Matt Keith, RPA  
Geoscience Manager

  
Bruce Samuel, PG  
Geologist

## **APPENDIX D: HYDROGEN SULFIDE INFORMATION**

### **D.1 Concentration**

W&T does not anticipate encountering any H<sub>2</sub>S during the proposed operations.

### **D.2 Classification**

In accordance with Title 30 CFR 250.490(c), W&T requests that the area of proposed activities be classified by the BOEM as H<sub>2</sub>S absent.

## **APPENDIX E: BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION**

### **E.1 High-Density Deepwater Benthic Communities**

Activities proposed at the surface location of Well Location C in this DOCD could disturb seafloor areas in water depths greater than 300 meters (984 feet); therefore, information as outlined in Attachment A of NTL No. 2009-G40, "Deepwater Benthic Communities", is provided below:

#### **MAPS**

Submitted as **Attachment E-1** and **E-2** are maps prepared using high-resolution seismic information depicting seafloor and shallow geological features and areas, the surface location of the proposed Well Location C with a 2,000-foot radius circle around each location, and a maximum anchor radius around those same surface locations (which includes a 1,000-foot buffer zone).

#### **ANALYSIS**

Although our seafloor disturbing activities as outlined in this document will take place in water depths 300 meters (984 feet) or greater, there are no seafloor features or high-density deepwater benthic communities located within 500 feet of any proposed well/platform surface location, seafloor template installation, or pipeline construction. The placement of anchors, anchor chains, wire ropes, including the setting and retrieval of same, will not disturb any seafloor feature or high-density deepwater benthic communities within 500 feet of any of these seafloor-disturbing areas

### **E.2 Topographic Features (Banks)**

Activities proposed in this EP do not fall within 305 meters (1000 feet) of any designated "no activity zone"; therefore, no map is required.

### **E.3 Topographic Features Statement (Shunting)**

Drilling activities proposed in this EP do not fall within a "3-Mile Zone" of any topographic feature; therefore, no shunting of drilling fluids is being proposed under this plan.

### **E.4 Live Bottoms (Pinnacle Trend) Map**

The surface locations proposed in Ewing Bank Block 954 are not located within 61 meters (200 feet) of any pinnacle trend feature; therefore, a separate bathymetric map is not required.

### **E.5 Live Bottoms (Low Relief) Stipulation**

The surface locations in Ewing Bank Block 954 are not located within 100 feet of any pinnacle trend feature with vertical relief equal to or greater than 8 feet; therefore, live bottom (low relief) maps are not required.

### **E.6 Potentially Sensitive Biological Features**

The surface locations proposed in Ewing Bank Block 954 are not located within 30 meters (100 feet) of potentially sensitive biological features; therefore, biologically sensitive area maps are not required.

### **E.7 Threatened & Endangered Species, Critical Habitat, and Marine Mammal Information**

Under Section 7 of the Endangered Species Act (ESA) all federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its designated critical habitat.

In accordance with the 30 CFR 250, Subpart B, effective May 14, 2007, and further outlined in Notice to Lessees (NTL) 2008-G04, lessees/operators are required to address site-specific information on the presence of federally listed threatened or endangered species and critical habitat designated under the ESA and marine mammals protected under the Marine Mammal Protection Act (MMPA) in the area of proposed activities under this plan.

NOAA Fisheries currently lists the Sperm Whale, Leatherback Turtle, Green Turtle, Hawksbill Turtle, and the Kemp's Ridley Turtle as endangered and the Loggerhead Turtle and Gulf Sturgeon as threatened. Currently there are no designated critical habitats for the listed species in the Gulf of Mexico Outer Continental Shelf, however, it is possible that one or more of these species could be seen in the area of our operations.

#### **E.8 Archaeological Report**

Ewing Bank Block 954 has been determined as potentially containing prehistoric archaeological properties, therefore, an Archaeological Survey Report was prepared in accordance with applicable regulations by Tesla Offshore, LLC, and was included in the Geophysical Survey previously submitted under Walter's Initial Exploration Plan (Control No. N-9936) approved March 30, 2016.

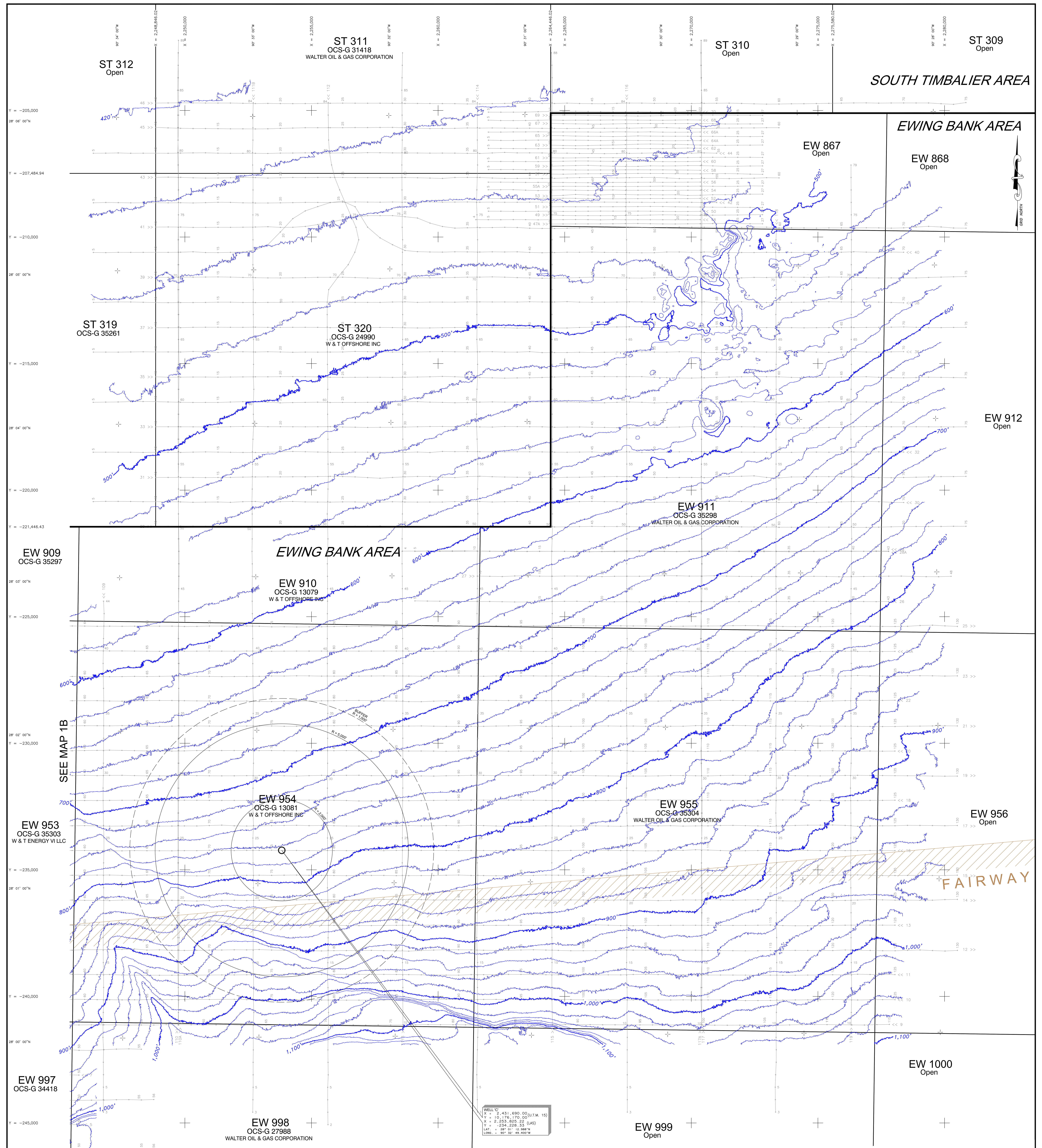
Review of the data obtained during the shallow hazard study shows no presence of any historic period shipwrecks in Ewing Bank Block 954.

#### **E.9 Air and Water Quality Information**

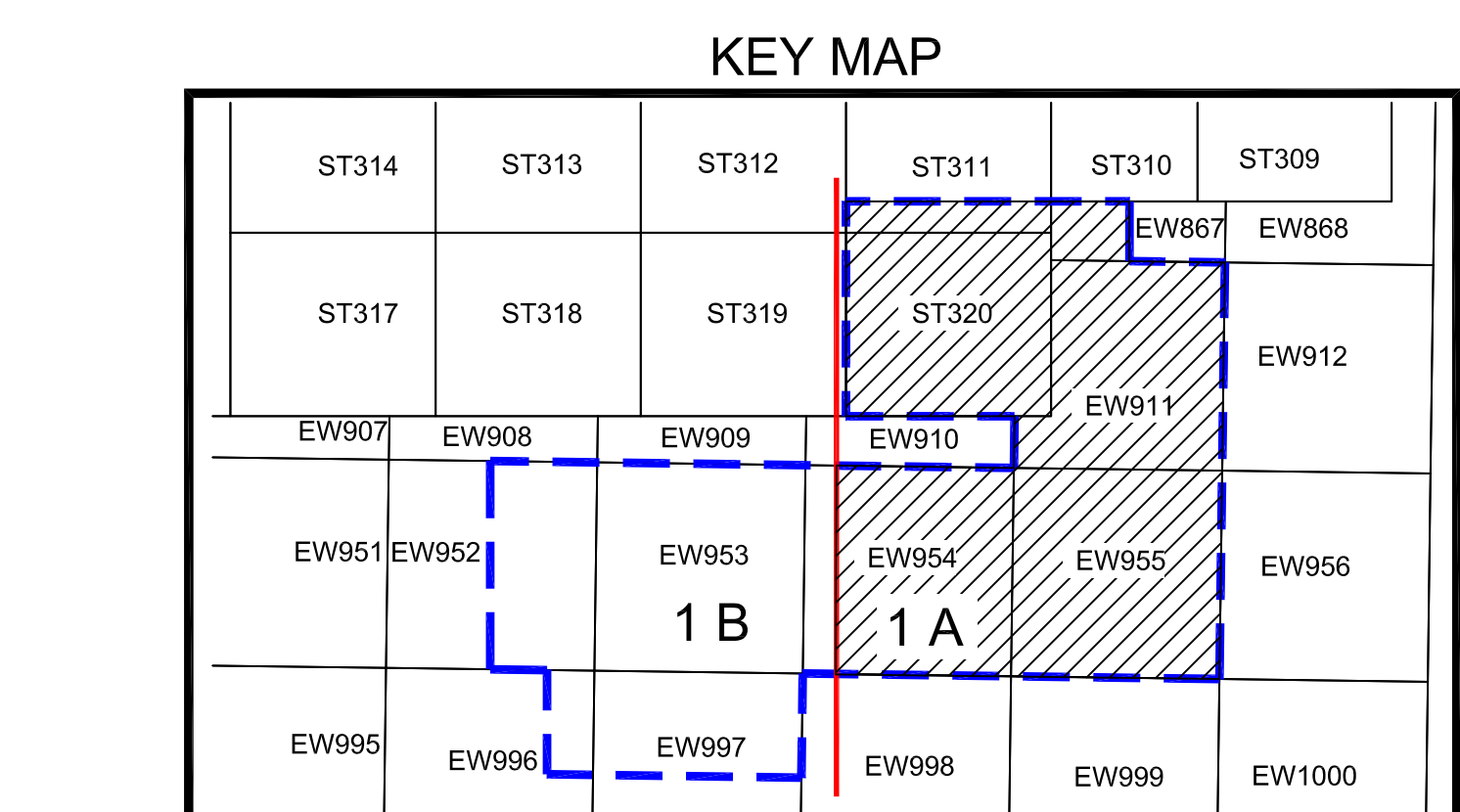
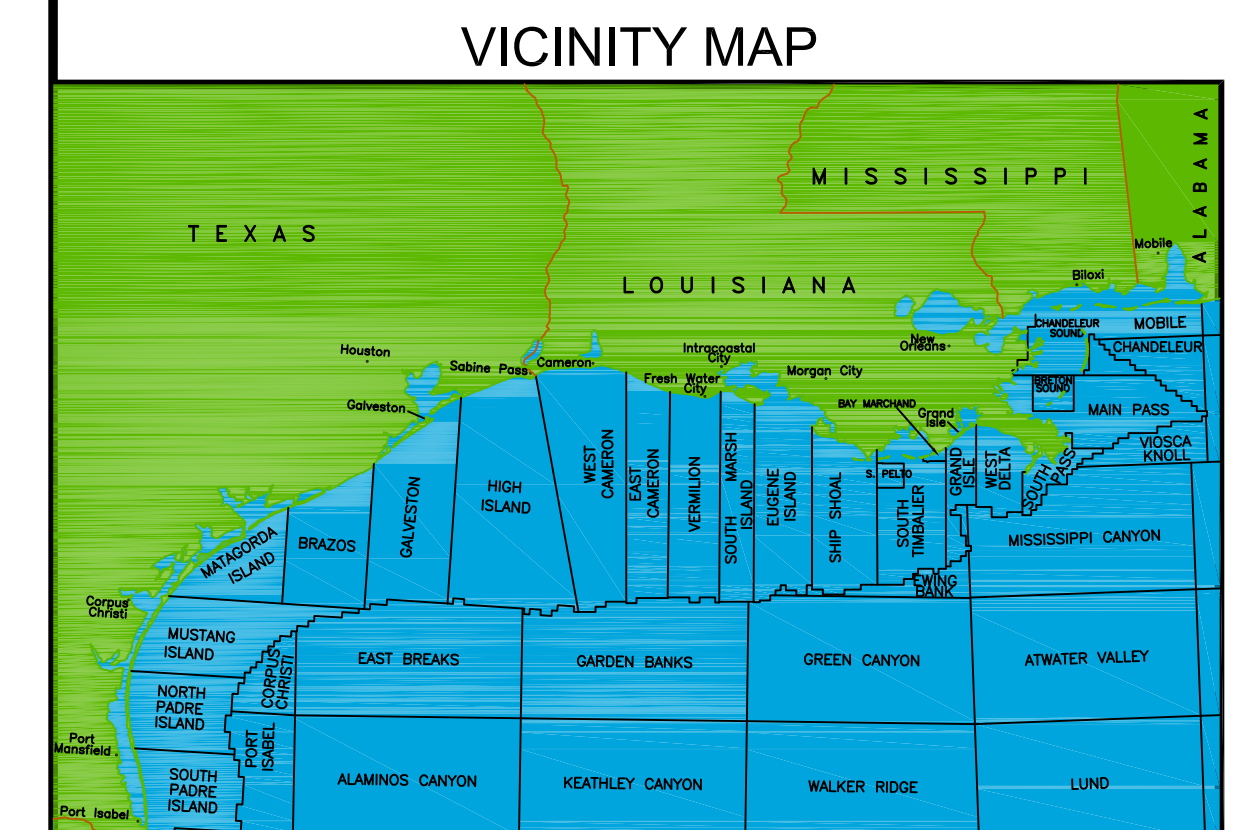
The activities as proposed under this plan do not affect the State of Florida; therefore, this information is not being submitted.

#### **E.10 Socioeconomic Information**

The activities as proposed in this plan do not affect the State of Florida; therefore, this information is not being submitted.

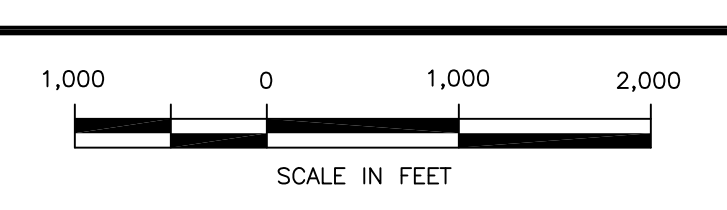


**ATTENTION:**  
Map features were derived from separate databases, public records, and from the geographical data described in the accompanying report. Tesla Offshore assumes no responsibility for the accuracy of the public data.



**LEGEND**  
 << 102 SURVEY DIRECTION AND LINE NO.  
 SURVEY TRACK AND POSITION FIX BASED ON R/V NIKOLA GPS POSITION  
 700' BATHYMETRIC CONTOURS IN 20' INTERVALS

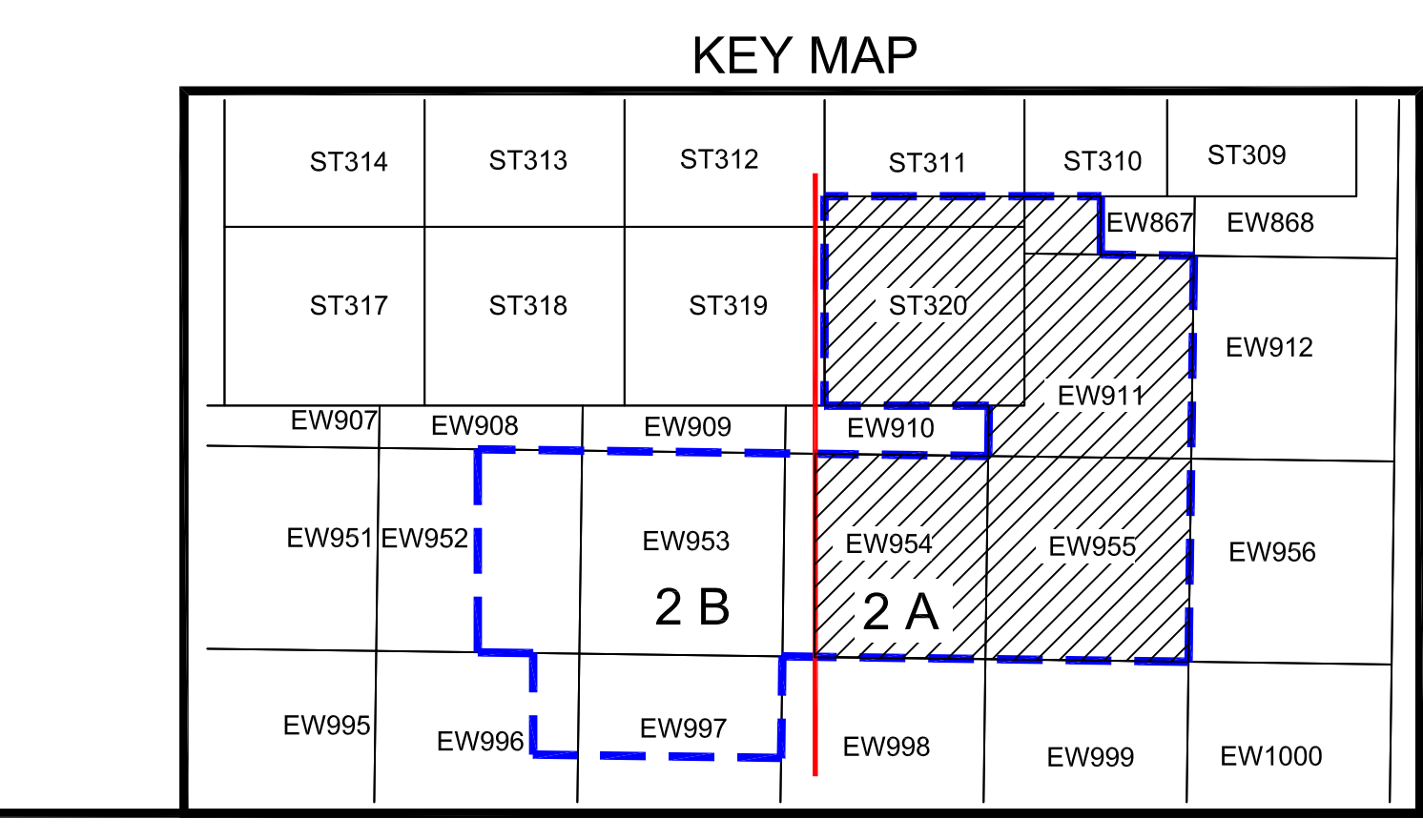
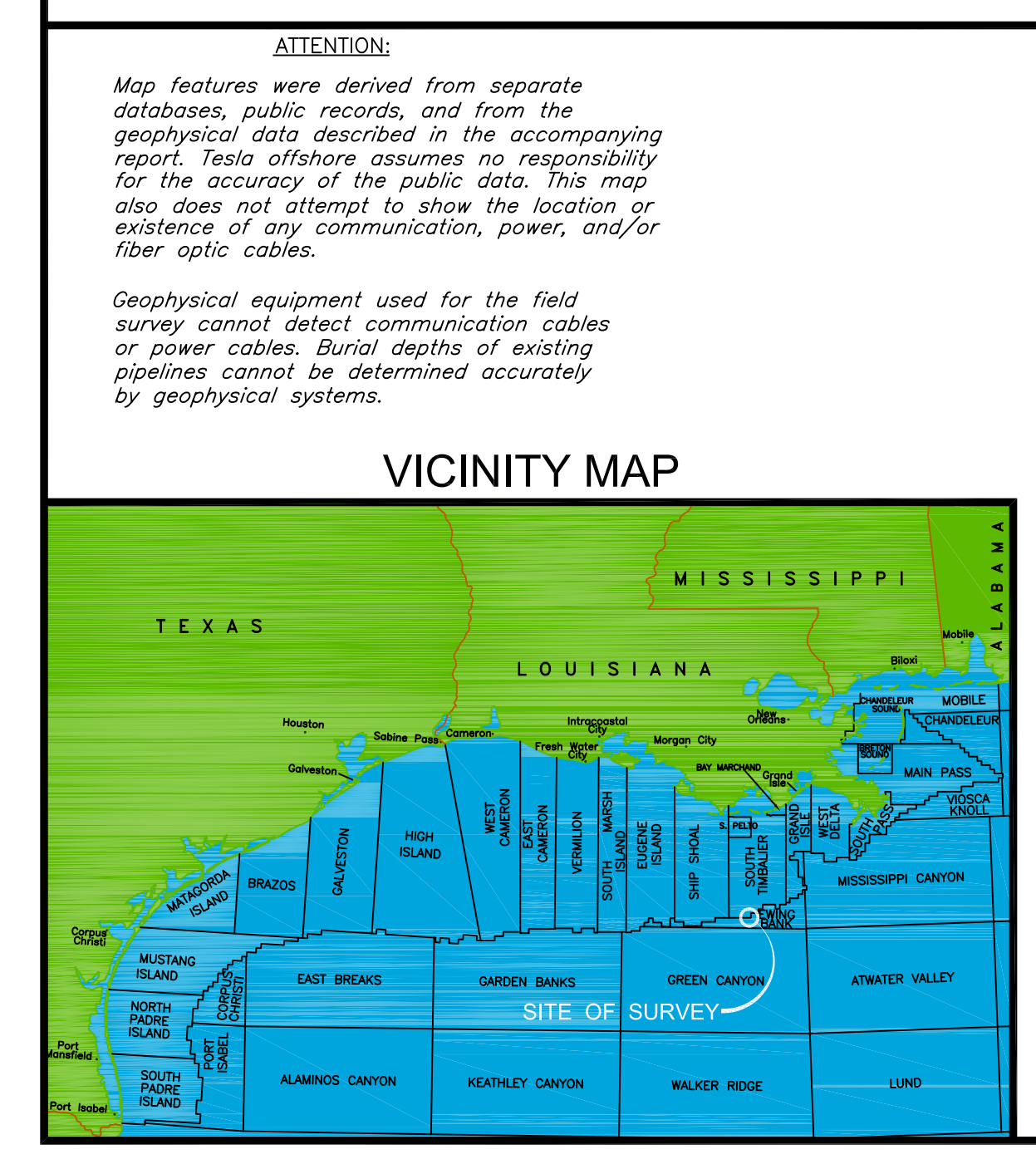
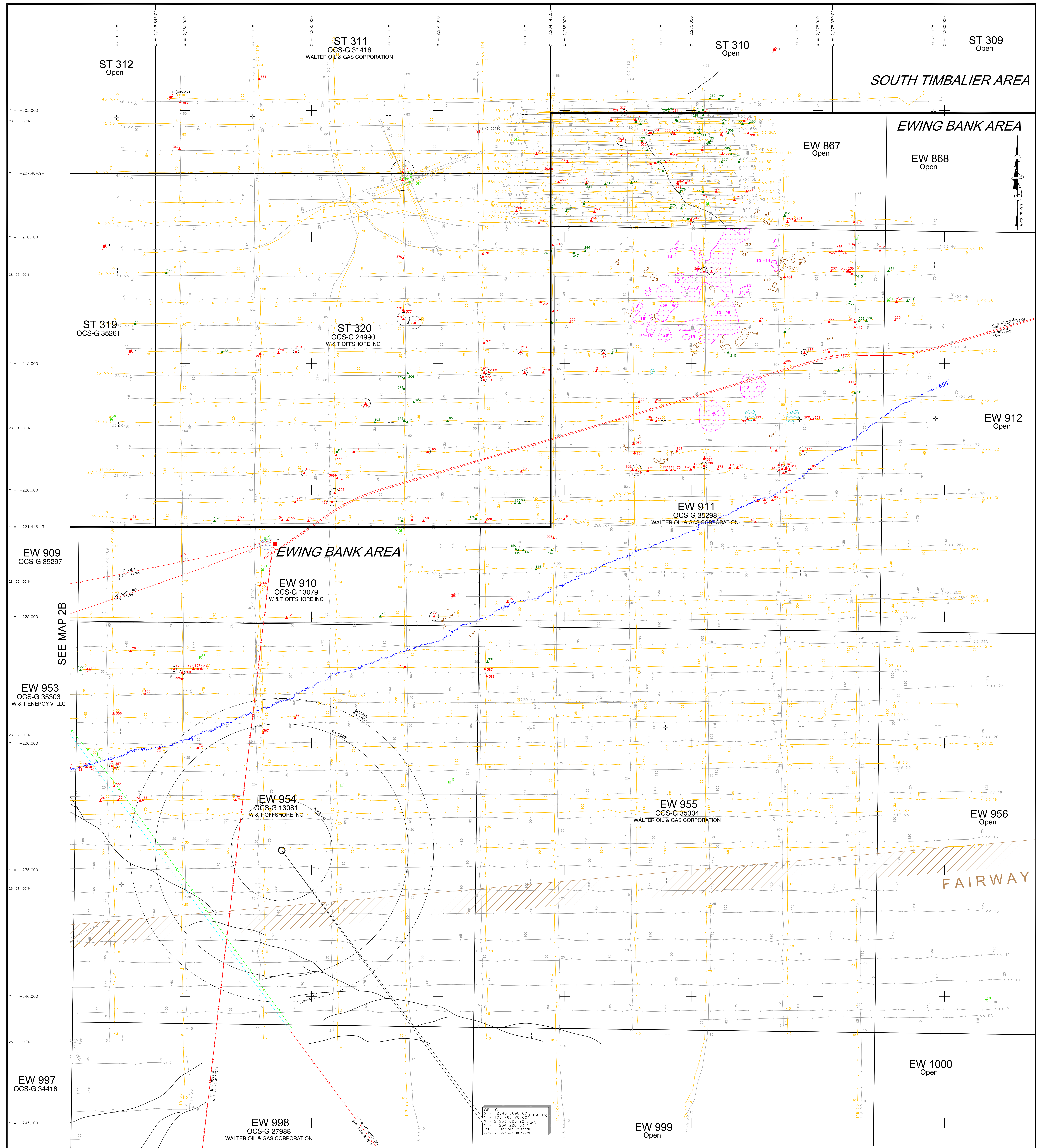
**WELL 'C'**  
 X = 2,431,690.00 (UTM, 15)  
 Y = 10,176,170.00 (UTM, 15)  
 X = 2,253,820.32 (LAS)  
 Y = -234,229.33 (LAS)  
 LAT = 28° 01' 45.988" N  
 LONG = 90° 32' 42.925" W



**WELL ASSESSMENT**  
**BATHYMETRY**  
**EASTERN HALF**  
 BLOCKS 311 & 320  
 SOUTH TIMBALIER AREA, SOUTH ADDITION  
 AND BLOCKS 867, 911, 952, 953, 954, 955, 996, & 997  
 EWING BANK AREA  
 GULF OF MEXICO

<b>Echo</b> OFFSHORE		36499 Perkins Road Prairieville, Louisiana 70769 Tel: 225-673-2163	
DATUM:	NAD 27	CENTRAL MERIDIAN:	91° 20' WEST
SPHEROID:	CLARKE 1866	X ORIGIN:	+2,050,000 AT CENTRAL MERIDIAN
PROJECTION:	LAMBERT	Y ORIGIN:	+0 AT 28° 40' NORTH
ZONE:	LOUISIANA SOUTH	GRID UNITS:	US FEET
ISSUE DATE:	11/10/2017	DESCRIPTION:	WELL ASSESSMENT
DRWN:	RUN	INTERP:	JEA
CHKD:	JPL	APPROVED:	MEK
Map File Name:	17-007-Maps_0461-C		MAP 1 OF 6

SURVEY PERFORMED BY TESLA OFFSHORE, LLC IN MARCH & APRIL, 2015  
 TESLA JOB#14-159-11



**ATTENTION:**  
 Map features were derived from separate geobases, public records, and from the geophysical data described in the accompanying reports. W&T Offshore assumes no responsibility for the accuracy of the public data. This map also does not attempt to show the location or existence of any communication, power, and/or fiber optic cables.

Geophysical equipment used for the field survey cannot detect communication cables or power cables. Burial depths of existing pipelines cannot be determined accurately by geophysical systems.

**LEGEND**

- << 102 SURVEY DIRECTION AND LINE NO.
- SURVEY TRACK AND POSITION FIX USING TRACKED MAGNETOMETER POSITION
- << 102 SURVEY DIRECTION AND LINE NO.
- SURVEY TRACK AND POSITION FIX USING TRACKED SIDE SCAN SONAR POSITION
- PLATFORM (EXISTING)
- ★ WELL (P&A)
- PIPELINE (EXISTING)
- PIPELINE (AS-FOUND)
- PIPELINE (UNVERIFIED)
- 656 Bathymetric contour indicating depth where magnetometer is not required
- Side scan sonar target with avoidance (see table in report appendix D)
- Ferruginous anomaly with avoidance (see table in report appendix D)
- Geologic magnetic anomaly (see table in report appendix D)
- Pinnacle area less than 8' (heights in feet)
- Pinnacle area greater than 8' (heights in feet)
- Seafloor scarp
- Expulsion feature
- Debris field

SCALE IN FEET: 0, 1,000, 2,000

ATTACHMENT E-2

**W&T OFFSHORE**

**WELL ASSESSMENT**

**SEAFLOOR FEATURES EASTERN HALF**

BLOCKS 311 & 320  
 SOUTH TIMBALIER AREA, SOUTH ADDITION  
 AND BLOCKS 867, 911, 952, 953, 954, 955, 996, & 997  
 EWING BANK AREA  
 GULF OF MEXICO

**Echo OFFSHORE**

36499 Perkins Road  
 Prairieville, Louisiana 70769  
 Tel: 225-873-2163

DATUM:	NAD 27	CENTRAL MERIDIAN: 91° 20' WEST
SPHEROID:	CLARKE 1866	X ORIGIN = 2,050,000 AT CENTRAL MERIDIAN
PROJECTION:	LAMBERT	Y ORIGIN = 0 AT 28° 40' NORTH
ZONE:	LOUISIANA SOUTH	GRID UNITS: US FEET

ISSUE DATE	DESCRIPTION	DRWN	INTRP	CHKD	APPROVD
11/10/2017	WELL ASSESSMENT	RUN	JEA	JFL	MEK

Map File Name: 17\_007\_Maps\_001.C

MAP 2 OF 6

## **APPENDIX F: WASTES AND DISCHARGES INFORMATION**

### **F.1 Wastes to be Discharge Overboard**

Projected generated wastes as a result of the activities proposed in this EP that will be discharged overboard in accordance with the EPA's general permit are detailed in **Attachment F-1** included in this document.

### **F.2 Wastes to be Transported to Onshore for Disposal**

Projected generated wastes as a result of the activities proposed in this EP that will be transported to an onshore facility for disposal are detailed in **Attachment F-2** included in this document.

**TABLE 1: WASTES TO BE GENERATED, TREATED AND DOWNHOLE DISPOSED OF OR DISCHARGED TO THE GOM**

Please specify if the amount reported is a total or per well amount

Projected generated waste			Projected ocean discharges		Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge Rate	Discharge Method	Answer yes or no
<b>Will drilling occur? If yes, you should list muds and cuttings</b>					
Water-based drilling fluid	Water base mud	6000 bbls	6000 bbls Total	Discharge overboard	No
Cuttings wetted with water-based fluid	Cuttings while using WBM	980 bbls	980 bbls Total	Discharge overboard	No
Cuttings wetted with synthetic-based fluid	Cuttings while using SBM	710 bbls	±150 bbls/day/well	Washed then discharged overboard	No
<b>Will humans be there? If yes, expect conventional waste</b>					
Domestic waste	Gray water	2200 bbls Total	30gal/person/day	Treat and discharge overboard	No
Sanitary waste	Sewage waste	1500 bbls Total	20gal/person/day	Treat and discharge overboard	No
<b>Is there a deck? If yes, there will be deck drainage</b>					
Deck Drainage	Rain Water	0 – 2500 bbls	N/A	Discharge overboard	No
<b>Will you conduct well treatment, completion, or workover?</b>					
Well treatment fluids	N/A	N/A	N/A	N/A	No
Well completion fluids	N/A	N/A	N/A	N/A	No
Workover fluids	N/A	N/A	N/A	N/A	No
<b>Miscellaneous discharges? If yes, only fill in those associated with your activity</b>					
Desalinization unit discharge	Sea water	Dependent on well duration	±150 Bbls/day	Discharge overboard via flume line	No
Blowout preventer fluid	Fresh water / Erifon (4%) mixture	Dependent on well duration	20 Bbls/Week	Vented during BOP Stack functions	No
Ballast water	Sea water	Dependent on well duration	Varies Daily	Discharge via ballast overboard line	No
Bilge water	Sea water (per OWS monitor)	Dependent on well duration	60 Bbls/Week	Discharge via bilge overboard line	No
Excess cement	12 ppg cement circ. to surface	200 bbls	4 bpm when cmtg 20" and 16" casing	Discharge overboard	No
Fire water	Sea water	Dependent on well duration	190 Bbls/Week	Discharged via fire monitors (Testing)	No
Cooling water	Sea water	Dependent on well duration	100,000 Bbls/Day	Discharged via flume lines	No
<b>Will you produce hydrocarbons? If yes, fill in for produced water</b>					
Produced water	Production runs full-well stream to Medusa Platform in MC582	N/A	N/A	N/A	No
<b>Please enter individual or general to indicate which type of NPDES permit you will be covered by</b>					

**TABLE 2. WASTES THAT WILL BE TRANSPORTED AND DISPOSED OF ONSHORE**

Please specify whether the amount reported is a total or per well

Projected generated wastes		Solid and Liquid Wastes transportation	Waste Disposal		
Type of Waste	Composition	Transportation Method	Name/location of facility	Amount	Disposal method
<b>Will drilling occur? If yes, fill in the muds and cuttings</b>					
Oil-based drilling fluid or mud	NA	NA	NA	NA	NA
Synthetic-based drill fluid or mud	SBM	Below deck storage tanks on offshore support vessels	NA	3000 bbls/well	Back to vendor for credit
Cuttings wetted with Water-based fluid	NA	NA	NA	NA	NA
Cuttings wetted with oil-based fluids	NA	NA	NA	NA	NA
Completion fluids	CaCl <sub>2</sub> , CaBr <sub>2</sub> , ZnBr <sub>2</sub>	Store in below deck storage tanks and sent in on supply or crew boat	Newpark, Fourchon, LA	100 bbls/well	Disposed
<b>Will you produce hydrocarbons? If yes, then fill in for produced sand.</b>					
Produced sand	NA	NA	NA	NA	NA
<b>Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.</b>					
Trash and debris	Paper and plastic	Garbage bags on supply/crew boat	Galiano Waste, Galiano, LA	121 bags @ 40cu ft/bag/well	Landfill
Used oil	Oily rags/absorbent pads, used oil filters	DOT drums on supply boat	Omega Waste Management, Patterson, LA	22 Drums/per well	Incineration
Wash water	NA	NA	NA	NA	NA
Chemical product wastes	Paint, solvents, light bulbs	DOT drums on supply or crew boat	Hidco, Abbeville, LA	300 lbs/well	Hazardous Waste
Used oil	Used Engine Oil	550 gal Portable totes on board supply or crew boat	Newpark, Fourchon, La.	10 totes/well	Recycled
Cooking oil	Used cooking oil	5 gal jugs on board supply or crew boat	GJ Land & Marine, Morgan City, LA	(9) 5 gal jugs/wel	Recycled
	Batteries	5 gal drum on board supply or crew boat	ESSI or NOV, Broussard, LA	As needed	Recycled
Note: If you will not have a type of waste, enter NA in the row.					

## APPENDIX G: AIR EMISSIONS INFORMATION

### G.1 Screening Questions

Screen Procedures for EP's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed development activities more than 90% of the amounts calculated using the following formulas: $CT = 3400D^{2/3}$ for CO, and $CT = 33.3D$ for the other air pollutants (where D = distance to shore in miles)?		X
Do your emission calculations include any emission reduction measures or modified emission factors?		X
Does or will the facility complex associated with your proposed development and production activities process production from eight or more wells?		X
Do you expect to encounter H <sub>2</sub> S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas in excess or criteria set for the under 250.1105(a)(2) and (3)?		X
Do you propose to burn produced hydrocarbon liquids?		X
Are your proposed development and production activities located within 25 miles (40 kilometers) from shore?		X
Are your proposed development and production activities located within 124 miles (200 kilometers) of the Breton Wilderness Area?		X

There are no existing facilities or activities co-located with the currently proposed activities, therefore the Complex Total Emissions are the same as the Plan Emissions, which are provided in the table below and in the spreadsheets included as **Attachment G-1**.

Air Pollutant	Plan Emission Amount <sup>1</sup> (tons)	Calculated Exemption Amounts (tons)	Calculated Complex Total Emission Amounts (tons)
Carbon Monoxide (CO)	310.34	58297.66	310.34
Particular matter (PM)	41.38	2364.30	41.38
Sulphur dioxide (SO <sub>2</sub> )	189.83	2364.30	189.83
Nitrogen oxides (NO <sub>x</sub> )	1422.40	2364.30	1422.40
Volatile organic compounds (VOC)	42.67	2364.30	42.67

This information was calculated by: Valerie Land  
 Regulatory Manager  
 713-624-7272  
[vland@wtoffshore.com](mailto:vland@wtoffshore.com)

EXPLORATION PLAN (EP)  
AIR QUALITY SCREENING CHECKLIST

COMPANY	W&T Offshore, Inc.
AREA	Ewing Bank
BLOCK	954
LEASE	13081
PLATFORM	NA
WELL	A, B, & C
COMPANY CONTACT	Valerie Land
TELEPHONE NO.	713-624-7272
REMARKS	Drill and complete 3 new wells

**EMISSIONS CALCULATIONS 1ST YEAR**

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS								
W&T Offshore, Inc.	Ewing Bank	954	13081	NA	A, B, & C		Valerie Land	713-624-7272									
OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS					
	Diesel Engines	HP	GAL/HR	GAL/D													
	Nat. Gas Engines	HP	SCF/HR	SCF/D													
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	DAYS	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO	
DRILLING	PRIME MOVER>600hp diesel	26,400	1275.12	30602.88	24	180	18.61	85.36	639.65	19.19	139.56	40.19	184.39	1381.64	41.45	301.45	
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	2064	99.6912	2392.59	6	77	1.45	6.67	50.01	1.50	10.91	0.34	1.54	11.55	0.35	2.52	
	VESSELS>600hp diesel(tugs)	8400	405.72	9737.28	10	6	5.92	27.16	203.52	6.11	44.41	0.18	0.81	6.11	0.18	1.33	
FACILITY INSTALLATION	DERRICK BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	MISC.	BPD	SCF/HR	COUNT													
	TANK-	0			0	0				0.00					0.00		
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
<b>2018 YEAR TOTAL</b>							<b>27.44</b>	<b>125.87</b>	<b>943.19</b>	<b>28.30</b>	<b>205.79</b>	<b>41.38</b>	<b>189.83</b>	<b>1422.40</b>	<b>42.67</b>	<b>310.34</b>	
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											2364.30	2364.30	2364.30	2364.30	58297.66	
	71.0																

**ATTACHMENT G-1 (cont'd)**

SUMMARY

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
W&T Offshore,	Ewing Bank	954	13081	NA	A, B, & C
Year	Emitted		Substance		
	PM	SO <sub>x</sub>	NO <sub>x</sub>	VOC	CO
2018	41.38	189.83	1422.40	42.67	310.34
Allowable	2364.30	2364.30	2364.30	2364.30	58297.66

ATTACHMENT G-1 (cont'd)

## APPENDIX H: OIL SPILLS INFORMATION

### H.1 Oil Spill Response Planning

W&T Offshore, Inc.'s (GOM Number 01284) Regional Oil Spill Response Plan (OSRP) was approved on August 19, 2014, and was found to be in compliance on October 20, 2015. More recently our renewal of the Regional OSRP submitted on September 29, 2017, was deemed to be in compliance on October 2, 2017. Activities proposed in this DOCD will be covered by the Regional OSRP in accordance with 30 CFR 254.

- **Spill Response Sites**

<i>Primary Response Equipment Location</i>	<i>Preplanned Staging Location</i>
Houma, LA	Houma, LA
Harvey, LA	Harvey, LA
Leeville, LA	Venice, LA
	Leeville, LA

- **OSRO Information**

W&T's primary equipment provider is Clean Gulf Associates (CGA). The Marine Spill Response Corporation's (MSRC) STARS network will provide closest available personnel, as well as an MSRC supervisor to operate the equipment.

### H.2 Worst Case Discharge Determination

<i>Category</i>	<i>Regional OSRP WCD</i>	<i>EP WCD</i>
Type of Activity	Drilling	Drilling
Facility Location (Area/Block)	EW910	EW954
Facility Designation	A-8	A
Distance to Nearest Shoreline (miles)	69	71
Volume		
Storage tanks (total)	171,412 bbls	64,883 bbls
Uncontrolled blowout		
Total Volume	<b>171,412 bbls</b>	<b>64,883 bbls</b>
Type of Oil(s) (crude, condensate, diesel)	Crude	Crude
API Gravity	25°	32°

W&T has determined that the worst-case scenario from the activities proposed in this EP does not supersede the worst-case scenario from our approved regional OSRP for drilling >10 miles from shore.

Since W&T has the capability to respond to the worst-case spill scenario included in our regional OSRP approved on August 19, 2014, and since the worst-case scenario determined for our EP does not replace the worst-case scenario in our regional OSRP, I hereby certify that W&T has the capability to respond, to the maximum extent practicable, to a worst-case discharge, or a substantial threat of such a discharge, resulting from the activities proposed in our EP.

**H.3 Oil Spill Response Discussion**

Included as **Attachment H-1** is the Oil Spill Response Discussion prepared for W&T Offshore, Inc. by ForeFront Emergency Management.

<b>FACILITY INFORMATION</b>	
<b>TYPE OF OPERATION</b>	Drilling
<b>FACILITY DESIGNATION</b>	OCS-G 13081 / 35303
<b>FACILITY LOCATION</b>	Ewing Bank 954 / 953
<b>DISTANCE TO NEAREST SHORELINE</b>	71 miles
<b>TOTAL VOLUME</b> Uncontrolled Blowout (Volume Per Day)	<b>64,883 bbls</b>
<b>TYPE OF OIL(S) – (CRUDE OIL, CONDENSATE, DIESEL)</b>	Crude
<b>API GRAVITY</b>	32°
The location chosen for this discussion is Ewing Bank Block 953 Well A.	

## FACILITY, TANKS, AND PRODUCTION FACILITIES

There are no production vessels associated with the activities in this Exploration Plan (EP); however, there will be a moored semi-submersible drilling unit. All facility storage tanks are as follows:

Type of Fuel	Type of Facility	Total Capacity (bbls)	Fluid Gravity (API)
Marine Diesel	Semi-Submersible	70,000	38°

## OIL SPILL RESPONSE DISCUSSION

In the event of a spill at Ewing Bank Blocks 954/ 953 Wells A, B, and C, our primary response would be to utilize the Oil Spill Response Vessels (OSRV) and Oil Spill Response Barge (OSRB) from Clean Gulf Associates (CGA). The initial response would likely be a 95' Fast Response Vessel (FRV) located in Leeville, Louisiana and the HOSS Barge located in Harvey, Louisiana. The 95' FRV has a derated recovery capacity of 22,885 barrels/day and a storage capacity of 249 barrels. With a maximum prep time of 2.0 hours, a maximum planning run time of 5.0 hours, and a deployment time of 1.0 hour, the response vessel would be on site in approximately 8.0 hours. The HOSS Barge has a derated recovery capacity of 76,285 barrels/day and a storage capacity of 4,000 barrels. With a maximum prep time of 6.0 hours, a maximum load out time of 1.0 hours, a maximum planning run time of 20.0 hours, and a deployment time of 1.0 hour, the response barge would be on site in approximately 28.0 hours.

Actual response times are generally quicker than planning times, since the vessel could be mobilized within one hour, weather permitting. As with any spill, additional "cascading" response equipment would be mobilized to the site from various CGA bases such as, Leeville, Venice, and Harvey, LA. For spills larger than 100 barrels, dispersants may be mobilized by plane from Airborne Support, Inc. in Houma, LA, pending approval from the U.S.C.G. FOSC and RRT-6.

For planning purposes, based on the worst-case discharge volume coupled with the distance from shore and guidance from Clean Gulf Associates, it is estimated that personnel can be on-scene within 5-24 hours. It is estimated that the spill could be contained within 2 days and recovered within 5 to 7 days.

## LAND SEGMENT IDENTIFICATION

According to the risk assessment analysis conducted by the Bureau of Safety and Environmental Enforcement as part of their OSRAM project, spills originating in Ewing Bank Blocks 954/ 953 Wells A, B, and C launching Area C042, have the potential for impacting land segments from Calhoun, Texas to Plaquemines, Louisiana within 30 days of oil persisting on the water. The probability of the impacts are summarized below:

### PROBABILITY OF LAND IMPACT FROM EWING BANK BLOCKS 954 / 953 WELLS A, B, C (% CHANCE)

LAND AREA	3 DAYS	10 DAYS	30 DAYS
Calhoun, TX	-	-	-
Matagorda, TX	-	-	1
Brazoria, TX	-	-	-
Galveston, TX	-	-	2
Jefferson, TX	-	-	2
Cameron, LA	-	1	7
Vermilion, LA	-	-	3
Iberia, LA	-	-	1
St. Mary, LA	-	-	-
Terrebonne, LA	-	1	3
Lafourche, LA	-	1	2
Jefferson, LA	-	-	1
Plaquemines, LA	-	2	5

Note "-" = less than 0.5%.

## RESOURCE IDENTIFICATION

The land segment with the highest probability of being impacted by a spill originating at Ewing Bank Blocks 954/ 953 Wells A, B, and C is Plaquemines Parish, Louisiana. According to the BSEE OSRAM program, there is less than 0.5% chance of the spill impacting Plaquemines Parish, Louisiana within 3 days of the incident. Furthermore, the OSRAM predicts a 2% chance of an oil slick that persists for 10 days and a 5% chance of an oil slick that persists for 30 days impacting Plaquemines Parish, Louisiana.

Economically, the potentially impacted area in Plaquemines Parish, Louisiana is considered the operational center for the offshore oil & gas industry. The Plaquemines Parish, Louisiana area is also economically sensitive due to the commercial fishing and seafood industries. Special emphasis will be made on deployment of containment boom in order to attempt to keep any oil slicks from impacting this waterway.

Environmentally, the Plaquemines Parish, Louisiana area has several shoreline types that could potentially be impacted. These include exposed solid manmade structures, salt and brackish water marshes, sheltered rocky shores and sheltered scarps in mud or clay, fine to medium grained sand beaches, sheltered tidal flats, riprap, freshwater marshes, gravel beaches, and exposed tidal flats. The locations of these areas are on maps **LA-79 to LA-102** of the Environmental Sensitivity Index guide maps. The index pages of these maps are included on the following pages as a guide to the species that could be potentially impacted should a spill of significance occur in the area.

## RESPONSE

W&T Offshore, Inc. has ensured by means of contract, an experienced Incident Management Team as well as an extensive response resource contractor team in order to ensure it is well prepared to address the issues involved with a Worst Case Discharge from Ewing Bank Blocks 954/ 953 Wells A, B, and C. These contracts include agreements with Clean Gulf Associates, Witt O'Briens, LLC, HWCG LLC, AMPOL, and OMI Environmental Solutions.

Once identification and assessment of the spill has occurred, W&T Offshore, Inc. would activate mobilization of the contracted resources. The resources involved would involve mechanical recovery, storage, aerial surveillance, dispersants, subsea containment and subsea dispersant, *in-situ* burning, shoreline protection, and wildlife rehabilitation and support. These tactics are discussed below:

### Mechanical Recovery

Mechanical recovery would involve the use of skimmers, oil spill response vessels, and fast response units to recover floating oil in open water. The resources for these operations are available from the contracted OSRO Clean Gulf Associates. A list of offshore skimming equipment, along with recovery rates, and estimated response times is available on the Offshore On-Water Recovery Activation List.

### Oil Storage

In order to properly support the off-shore skimming vessels to be involved in the Worst Case Discharge Scenario, it is likely that additional temporary storage equipment will be necessary to store the recovered product for disposal. If this proves to be the case, the required storage tanks and/or barges will be secured at the time of the incident from contracts maintained with Clean Gulf Associates. A list of barges is available on the Oil Storage Table.

### Aerial Surveillance

In order to ensure accurate location, estimation, and tracking of any spill, it is the policy of W&T Offshore, Inc. to utilize aircraft over flights, as warranted, to continually track the spill by obtaining GPS coordinates of the leading edge, center, and trailing edge of the slick. Personnel trained in spill spotter detection will obtain the visual and GPS data during each over flight. This up-to-the-minute information is vital in developing the necessary trajectories needed for an appropriate spill response. The Aerial Surveillance Table lists the resources available for this response capability.

### Offshore Aerial Dispersants and Offshore Boat Spray Dispersants

Three types of dispersants are presently approved and available in the Gulf Coast area. These are COREXIT 9527, COREXIT 9500, and Accell Clean ® DWD. The most rapid way of acquiring dispersants in the event of an incident is through W&T Offshore, Inc.'s contract with Clean Gulf Associates. The three types of dispersants can be applied using either aerial or vessel based equipment. For vessel-based applications, the dispersant will be applied directly to the slick from the deck of a vessel using fire monitor equipment. The primary resource for this will be Clean Gulf Associates. Aerial dispersant application is available through Clean Gulf Associate's agreement with Airborne Support, Inc. located in Houma, Louisiana. The equipment available for both vessel dispersant and aerial dispersant is listed on the Offshore Boat Spray Dispersant Table and the Offshore Aerial Dispersant Table.

## RESPONSE

### Subsea Containment

In the event of a subsea sources control issue emanating from a blowout well, W&T Offshore, Inc. has entered into a contract with HWCG LLC to obtain the resources of the Helix Fast Response System (HFRS). The Helix Fast Response System is composed of the Q4000 Intervention Vessel, Helix Producer I Processing Vessel, Containment System, Tanker Unloading System, Subsea Capping Stacks, Top Hat, and Risers and Umbilicals. W&T Offshore, Inc. has additional contracts in place for the deployment of containment equipment as well as subsea dispersant application and monitoring.

### In-Situ Burning

Conditions permitting, *in-situ* burning is another response operation to be considered. The primary type of equipment necessary for *in-situ* burning is "Fire Boom". This type of containment boom is capable of retaining burning oil with risks of significant damage to the boom. After a thorough consideration of all aspects involved with *in-situ* burning between W&T Offshore, Inc. and the Federal On-Scene Commander, the following procedures and considerations should be taken into account. :

- Before ignition, ensure that the wind direction will not carry the smoke from any potential fire in the direction of a community or other sensitive resources.
- At the time of ignition, special care must be taken to ensure that the ignition source is located at a safe distance from the concentration of oil.
- The safest burn system at this point is to release burning gelled fuel from a heli-torch from heights of several hundred feet above the spill. If necessary, hand-held igniters can be released from vessels several hundred feet away.

### Shoreline Protection

Should an oil slick persist and threaten shorelines, response strategies would be put into effect. The resources available for nearshore and shoreline response are given on the Shoreline Protection and Nearshore Skimming Equipment Table.

### Wildlife Rehabilitation and Support

In the event that wildlife is impacted by a spill, the decision to capture and attempt to clean and rehabilitate any oiled wildlife will be made by the trustee agency in given area impacted. No handling or capture of any animals will be conducted without consultation and approval by the agency trustee's representative at the scene. Once the decision has been made that wildlife in the area have been sufficiently impacted to warrant a rehabilitation project, the spill management team will mobilize technical specialist to conduct the rehabilitation project. The equipment utilized to conduct the rehabilitation project will depend heavily on the species impacted. In general, the wildlife trailer maintained by Clean Gulf Associates will be mobilized to the scene to provide generalized equipment. More specific equipment will be obtained as needed when determined necessary by the technical specialist and/or agency representatives. The preferred organizations are given on The Wildlife Protection Response and Equipment Tables.

## 120-DAY UNCONTROLLED WELL BLOW OUT CONSIDERATIONS

Beyond the equipment required for the initial phase of a Worst Case Discharge at this location, additional equipment may be necessary for a sustained response to an uncontrolled well blow out for a duration of 120 days. Some additional support that may be necessary will include:

- Ocean-going, as well as, inland-going temporary storage barges to store and transport recovered product from the skimming operations.
- A rotation of personnel to relieve the operators of all skimming vessels as well as the shoreline protection crews. Spills of duration will double the required personnel.
- Additional field safety personnel.
- Aircraft for continual monitoring of the incident.
- Infrared spill tracking, such as X-Band Radar, for night time spill tracking and response.
- Full logistical capabilities to maintain the response equipment as well as personnel.
- Sufficient communications equipment.
- Sufficient decontamination equipment and protocols.
- Long term supply of dispersants and fireproof boom in instance of an uncontrolled long-term blowout event.
- A decontamination plan.
- A waste disposal plan.
- A demobilization plan.
- Aircraft for dispersant application.
- Well containment equipment, personnel, and deployment capability for capturing and separating fluids at the source.

**OFFSHORE ON-WATER RECOVERY ACTIVATION LIST**

Type	Quantity	Recovery Rate (EDRR)	Storage (Recovered Oil)	Equipment	Manpower Required	Operating Limitations	LOCATION	Response Times (Hours)					
								Prep (At Site)	Transport (OTR)	Loadout (Staging)	Transit	Deployment	Total ETA*
CGA-200 Hoss Barge	1	76,285 Bbls derated capacity	4,000 Bbls	(4) 5-Brush Lamor Skimmers	12	7 Foot Seas	CGA/Harvey, LA	6	-	1	20	1	28
				2,640' of 67" Sea Sentry Boom									
				(2) Tugs - 1,200 HP									
				(1) Tug - 1,800 HP									
95' Fast Response Vessel (Breton Isl.)	1	22,885 Bbls derated capacity	249 Bbls	(2) 3-Brush Lamor Skimmers	12	5 Foot Seas	CGA/Venice, LA	2	-	-	6	1	9
				(2) 32' of 36" Air Inflatable Boom									
				95' Vessel									
95' Fast Response Vessel (J.L. O'Brien)	1	22,885 Bbls derated capacity	249 Bbls	(2) 3-Brush Lamor Skimmers	12	5 Foot Seas	CGA/Leevile, LA	2	-	-	5	1	8
				(2) 32' of 36" Air Inflatable Boom									
				95' Vessel									
FRU Unit (Weir Skimmer System)	2	4,251 Bbls derated capacity (each)	200 Bbls	75' of 53" Air Inflatable Boom	4	4 Foot Seas	CGA/Venice, LA	2	Miles/35 MPH	1	10	1	14
				100' to 165' Offshore Supply Vessel									
FRU Unit (Weir Skimmer System)	2	4,251 Bbls derated capacity (each)	100 Bbls	75' of 53" Air Inflatable Boom	4	4 Foot Seas	CGA/Leevile, LA	2	Miles/35 MPH	1	8	1	12
				100' to 165' Offshore Supply Vessel									
Koseq Arms (set)	6 sets	118,422 bbls derated capacity	-	(1) - >200' Supply Vessel	6-8	6 Foot Seas	T&T Marine / Harvey, LA	4	Miles/35 MPH	24	11	1	40
				(1-2) Crew/Support Boat									

**OIL STORAGE FOR RECOVERY OPERATIONS**

Barge	Supplier & Phone	Operating Area	Storage (Barrels)
DBL 101	K-Sea Operating Partnership LP	Gulf Coast, USA	107,285
	One Tower Center Boulevard, 17th		
	East Brunswick, NJ		
	(718) 303-7353		

\*These resources are available through an agreement with Clean Gulf Associates. All equipment will be provided on an as-available basis, subject to the terms at the time requested by Clean Gulf Associates or its Member.

OFFSHORE BOOMING EQUIPMENT (OSRO SUPPLIED)												
Type	Quantity	Operational Requirements	Boom Dimensions	Description	Manpower Required	Owner/Location	Response Times (Hours)					
							Prep (At Site)	Transport (OTR)	Loadout (Staging)	Transit	Deployment	Total ETA*
Oceangoing Boom Barge - CGA 300	(1) Boom barge with 25,000' of 43" boom	(1) Tug (1,200 hp minimum), (2) VOO per 1,000' of boom deployed, and (1) support crew boat (supply)	500' of 43"	Single point inflating containment boom, it can be deployed and retrieved rapidly. In the collapsed state, it is buoyant and can be flown to an oil spill and placed in the water, then deployed by awaiting boats.	(2) OSRO and (2) Vessel Crew	CGA/Leeville	3	-	1	13	1	18

\*Response time dependent upon vessel procurement.

**SHORELINE PROTECTION AND NEARSHORE SKIMMING EQUIPMENT (OSRO SUPPLIED)**

TYPE	RECOVERY RATE (EDRC)	QUANTITY	CAPABILITIES/LIMITATIONS	OWNER/LOCATION	RESPONSE TIMES			
					CALLOUT	TRAVEL	LOADOUT	DEPLOYMENT
42" Containment Boom	-	5,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
36" Containment Boom	-	5,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	6,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Belle Chasse, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	2,700 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Galliano, LA	1.0 Hour	1.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	1,800 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Gonzales, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	10,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	1,300 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Houma, LA	1.0 Hour	1.0 Hour	1.0 Hour	1-2 Hours
18" Containment Boom	-	2,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Morgan City, LA	1.0 Hour	1.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	12,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ New Iberia, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	12,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Port Allen, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	2,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Shreveport, LA	1.0 Hour	6.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	11,500 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Venice, LA	1.0 Hour	3.0 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	500 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Belle Chasse, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	500 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Gonzales, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	5,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	300 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Houma, LA	1.0 Hour	1.0 Hour	1.0 Hour	1-2 Hours
10" Containment Boom	-	200 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Morgan City, LA	1.0 Hour	1.5 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	500 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ New Iberia, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	500 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	OMI/ Port Allen, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
5" Absorbent Boom	-	12,000 ft.	Effective in seas less than 5 feet and shallow marsh areas, requires significant manpower to deploy.	OMI/ Belle Chasse, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
5" Absorbent Boom	-	72,000 ft.	Effective in seas less than 5 feet and shallow marsh areas, requires significant manpower to deploy.	OMI/ Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
5" Absorbent Boom	-	8,000 ft.	Effective in seas less than 5 feet and shallow marsh areas, requires significant manpower to deploy.	OMI/ New Iberia, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours

**SHORELINE PROTECTION AND NEARSHORE SKIMMING EQUIPMENT (OSRO SUPPLIED)**

TYPE	RECOVERY RATE (EDRC)	QUANTITY	CAPABILITIES/LIMITATIONS	OWNER/LOCATION	RESPONSE TIMES			
					CALLOUT	TRAVEL	LOADOUT	DEPLOYMENT
18" Containment Boom	-	11,800 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ New Iberia, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	15,700 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ New Iberia, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	5,650 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ New Iberia, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	4,150 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ New Iberia, LA	1.0 Hour	2.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	10,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ Chalmette, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	2,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ Chalmette, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	14,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ Port Arthur, TX	1.0 Hour	4.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	2,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ Port Arthur, TX	1.0 Hour	4.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	900 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ Morgan City, LA	1.0 Hour	1.5 Hours	1.0 Hour	1-2 Hours
18" Containment Boom	-	30,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ Harvey LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
10" Containment Boom	-	5,000 ft.	Effective in seas less than 5 feet and requires significant manpower to deploy.	AMPOL/ Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hour	1-2 Hours
Nearshore Marco Skimmers	3,588	3	Very effective in shallow waters. Internal Storage of 34 barrels and recovery capacity of 3,588 bbls/day or more.	CGA/LA & TX	1.0 Hour	1.0 - 8.0 Hours	1.0 Hour	-

**DISPERSANT STOCKPILES**

<b>DISPERSANT STOCKPILES BY LOCATION (UPDATED 2017)</b>			
<b>Supplier and Phone</b>	<b>Location of Dispersants</b>	<b>Type</b>	<b>Quantity in Gallons</b>
Airborne Support Inc. (ASI) 985-851-6391	Houma, LA	Corexit 9500A	31,961
Clean Gulf Associates (CGA) 888-CGA-2007	Houma, LA	Corexit 9500A	28,000
Clean Gulf Associates (CGA) 888-CGA-2007	Harvey, LA	Corexit 9500A	83,750
Clean Gulf Associates (CGA) 888-CGA-2007	Houma, LA	Accell Clean ® DWD	5,000
Clean Gulf Associates (CGA) 888-CGA-2007	Venice, LA	Corexit 9527	330
Clean Gulf Associates (CGA) 888-CGA-2007	Morgan City, LA	Corexit 9527	330
Clean Gulf Associates (CGA) 888-CGA-2007	Aransas Pass, TX	Corexit 9527	330
Clean Gulf Associates (CGA) 888-CGA-2007	Lake Charles, LA	Corexit 9527	330
Clean Caribbean & Americas (CCA) and Oil Spill Response, Limited (OSRL) 954-983-9880	Ft. Lauderdale, FL	Corexit 9500A	30,000
<b>Total</b>			<b>180,031</b>

## OFFSHORE AERIAL DISPERSANT ACTIVATION LIST

Aerial Dispersant System	Supplier & Phone	Warehouse	Aerial Dispersant Package	Quantity	Staging Area	Response Times (Hours)				
						Prep at Site	Loadout Time	Transit	Deployment Time	Total ETA
DC-3 Aircraft (N64766) Spray Aircraft	Airborne Support (ASI) 985-851-6391	Houma, LA	Dispersant	1,200 Gallons	Houma, LA	2	2	0.5	0.2	4.7
			Spotter Aircraft	1						
			Wildlife Observer	1						
			Ground Personnel	6						
			Crew - Pilots	2						
DC-3 Aircraft (N64767) Spray Aircraft	Airborne Support (ASI) 985-851-6391	Houma, LA	Dispersant	1,200 Gallons	Houma, LA	2	2	0.5	0.2	4.7
			Spotter Aircraft	1						
			Wildlife Observer	1						
			Ground Personnel	6						
			Crew - Pilots	2						
BT-67 (N932H) Spray Aircraft	Airborne Support (ASI) 985-851-6391	Houma, LA	Dispersant	2,000 Gallons	Houma, LA	2	2	0.5	0.2	4.7
			Spotter Aircraft	1						
			Wildlife Observer	1						
			Ground Personnel	6						
			Crew - Pilots	2						
USCG SMART Team	USCG	Mobile, AL	Personnel - Flourometer	4	Transport to Fourchon, LA	4.5	1	5	0.5	11
			Crew Boat	1						

## OVER FLIGHT RESPONSE

AIR TRANSPORTATION COMPANY	LOCATION	CAPABILITIES
Southern Seaplane, Inc.	#1 Coquille Drive Belle Chasse, LA 70037 Phone: 504-394-5633	Southern Seaplane, Inc. has the ability for an aircraft to be ready for takeoff within (2) hours of notifying the Qualified Individual of a spill.

**AERIAL SURVEILLANCE**

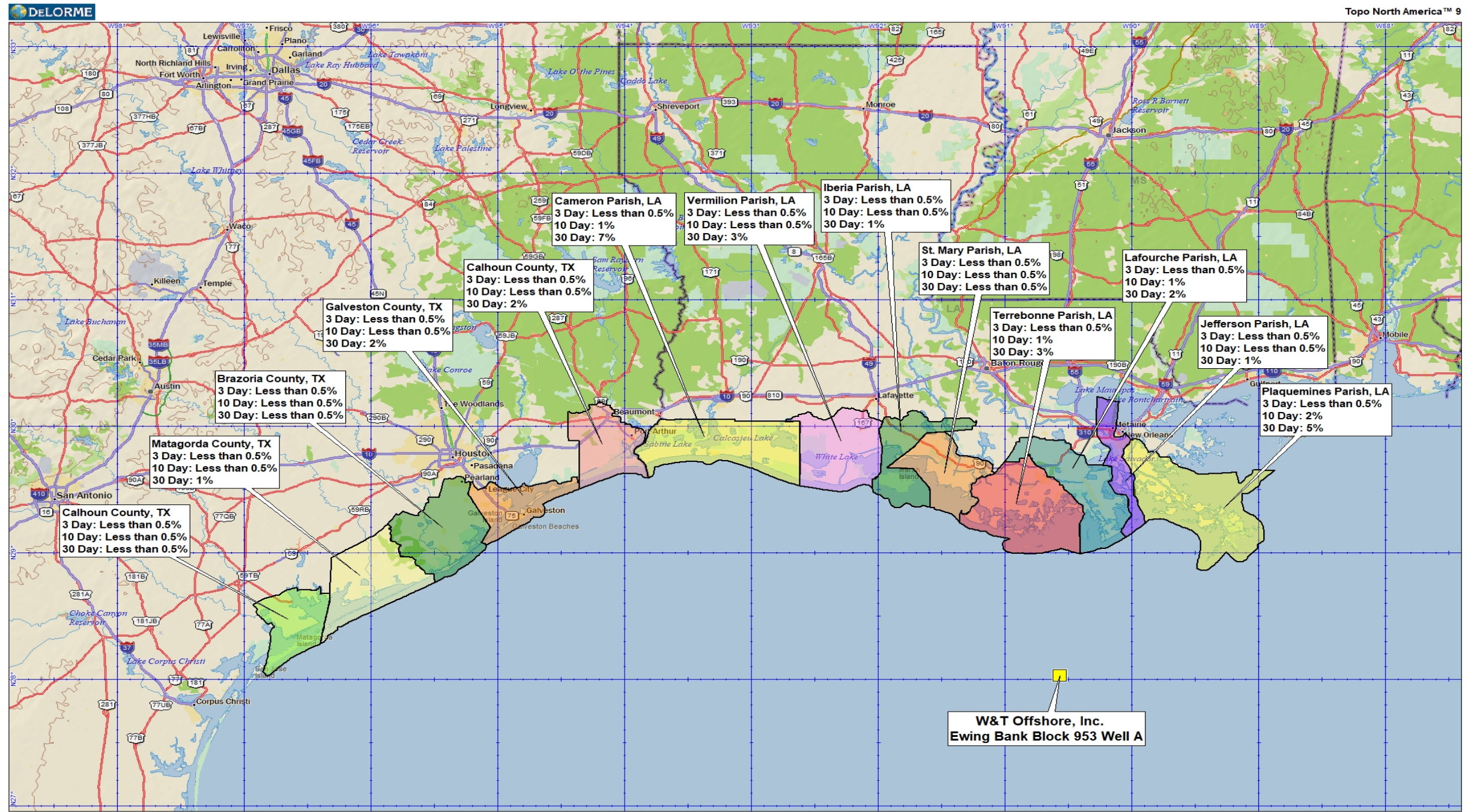
<b>AIR TRANSPORTATION COMPANY</b>	<b>LOCATION</b>	<b>CAPABILITIES</b>
Southern Seaplane, Inc.	#1 Coquille Drive Belle Chasse, LA 70037 Phone: 504-394-5633	Southern Seaplane, Inc. has the ability for an aircraft to be ready for takeoff within (2) hours of notifying the Qualified Individual of a spill.
Spotter Plane	Airborne Support Inc. 3626 Thunderbird Road Houma, LA 70363-5478 Phone: 985-851-6391	Used in conjunction with spray aircraft.
Spotter Personnel	Airborne Support Inc. 3626 Thunderbird Road Houma, LA 70363-5478 Phone: 985-851-6391	20 Minute ETA to Airborne Support Inc. in Houma, LA. Trained by NOAA and U.S.C.G.

## WILDLIFE PROTECTION RESPONSE

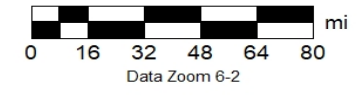
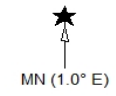
WILDLIFE REHABILITATION ORGANIZATION	LOCATION	RESPONSE TIMES			
		CALLOUT	TRAVEL	LOADOUT	DEPLOYMENT
Wildlife Center of Texas	7007 Katy Road Houston, TX 77024 Phone: 713-861-9453	1.5 Hours	6.0 Hours	0.5 Hours	1.0 Hour
Wildlife Response Services, LLC	P.O. Box 842 Seabrook, TX 77586 Phone: 713-705-5897	1.5 Hours	6.0 Hours	0.5 Hours	1.0 Hour
Tri-State Bird Rescue & Research	110 Possum Hallow Road Newark, DE 19711-3910 Phone: 302-737-9543	1.5 Hours	19.0 Hours	0.5 Hours	1.0 Hour
International Bird Rescue Research Center	4369 Cordelia Road Fairfield, CA 94534 Phone: 707-207-0380	1.5 Hours	34.0 Hours	0.5 Hours	1.0 Hour
Texas Marine Mammal Stranding Network	4700 Avenue U Galveston, TX 7751 Phone: 1-800-9-Mammal	1.5 Hours	6.5 Hours	0.5 Hours	1.0 Hour
Louisiana Marine Mammal and Sea Turtle Rescue Program	6500 Magazine St. New Orleans, LA 70118 Phone: 504-235-3005	1.5 Hours	1.5 Hours	0.5 Hours	1.0 Hour

## WILDLIFE PROTECTION EQUIPMENT (OSRO SUPPLIED)

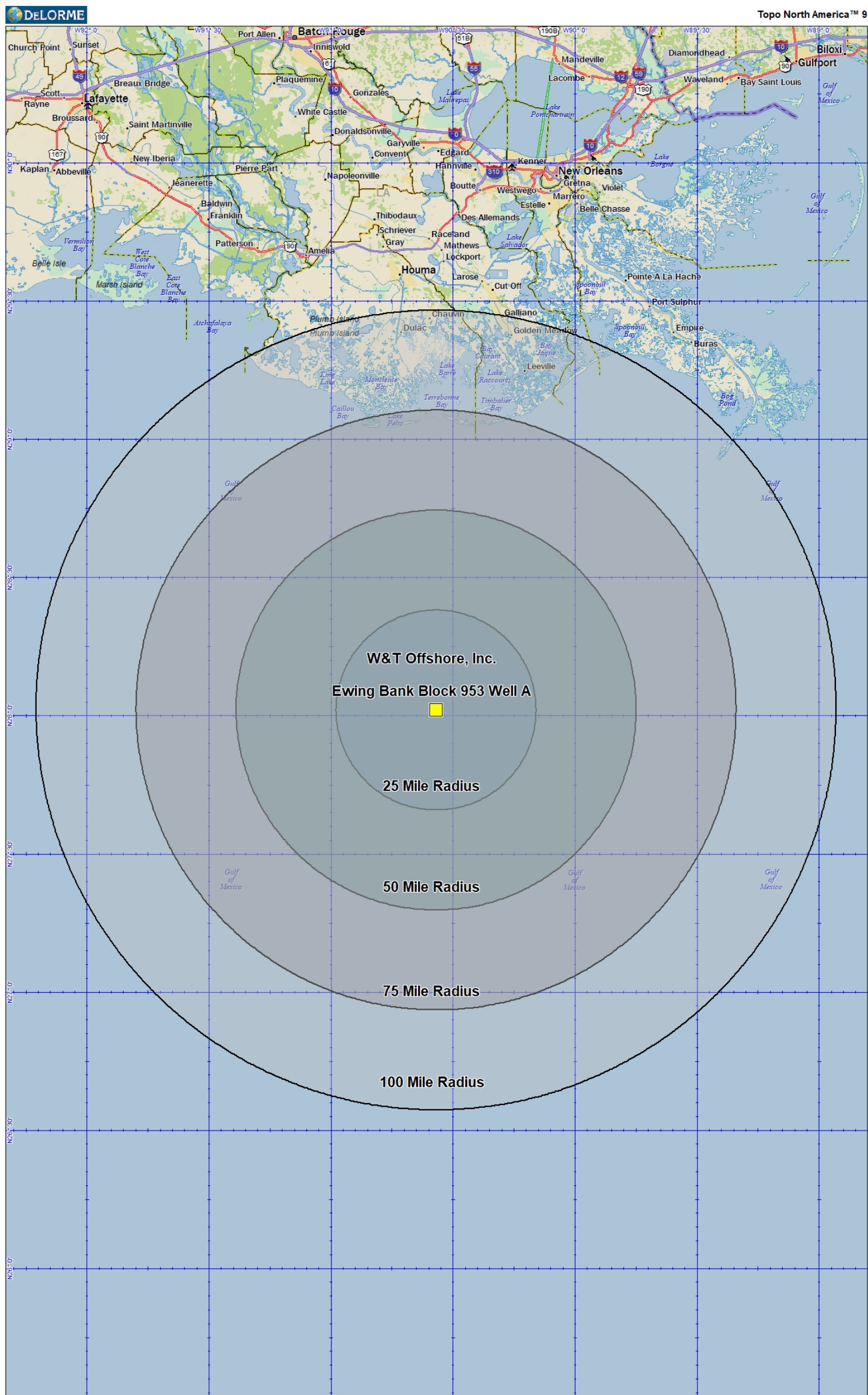
TYPE	QUANTITY	CAPABILITIES/LIMITATIONS	OWNER/LOCATION	RESPONSE TIMES			
				CALLOUT	TRAVEL	LOADOUT	DEPLOYMENT
<b>Bird Scare Guns (Set of 12)</b>	4	Wildlife hazing cannon powered by 20lb propane bottle.	CGA/Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hours	1.0 Hours
<b>Bird Scare Guns (Set of 12)</b>	2	Wildlife hazing cannon powered by 20lb propane bottle.	CGA/Leeville, LA	1.0 Hour	1.0 Hours	1.0 Hours	1.0 Hours
<b>Bird Scare Guns (Set of 12)</b>	2	Wildlife hazing cannon powered by 20lb propane bottle.	CGA/Lake Charles, LA	1.0 Hour	4.0 Hours	1.0 Hours	1.0 Hours
<b>Bird Scare Guns (Set of 12)</b>	1	Wildlife hazing cannon powered by 20lb propane bottle.	CGA/Galveston, TX	1.0 Hour	6.5 Hours	1.0 Hours	1.0 Hours
<b>Bird Scare Guns (Set of 12)</b>	1	Wildlife hazing cannon powered by 20lb propane bottle.	CGA/Aransas Pass, TX	1.0 Hour	9.0 Hours	1.0 Hours	1.0 Hours
<b>Wildlife Rehabilitation Trailers</b>	1	Rehabilitation, care and cleanup of contaminated wildlife. Contains (2) water heaters, (4) wash stations, and (4) rinse stations.	CGA/ Harvey, LA	0.5 Hours	2.0 Hours	0.5 Hours	0.5 Hours
<b>Wildlife Supply Trailer</b>	1	Temporary storage for oiled birds or other wildlife in a climate controlled atmosphere. Small to medium sized birds can be stored or transported in cages set on shelves. Large birds can be stored in open-topped plywood pens. Trailer can be used to transport wildlife from a spill site to the rehabilitation station, or as a place where wildlife can be held until their body conditions become stable.	CGA/Harvey, LA	1.0 Hour	2.0 Hours	1.0 Hours	1.0 Hours



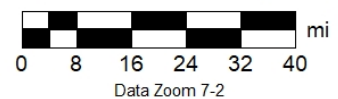
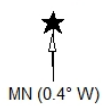
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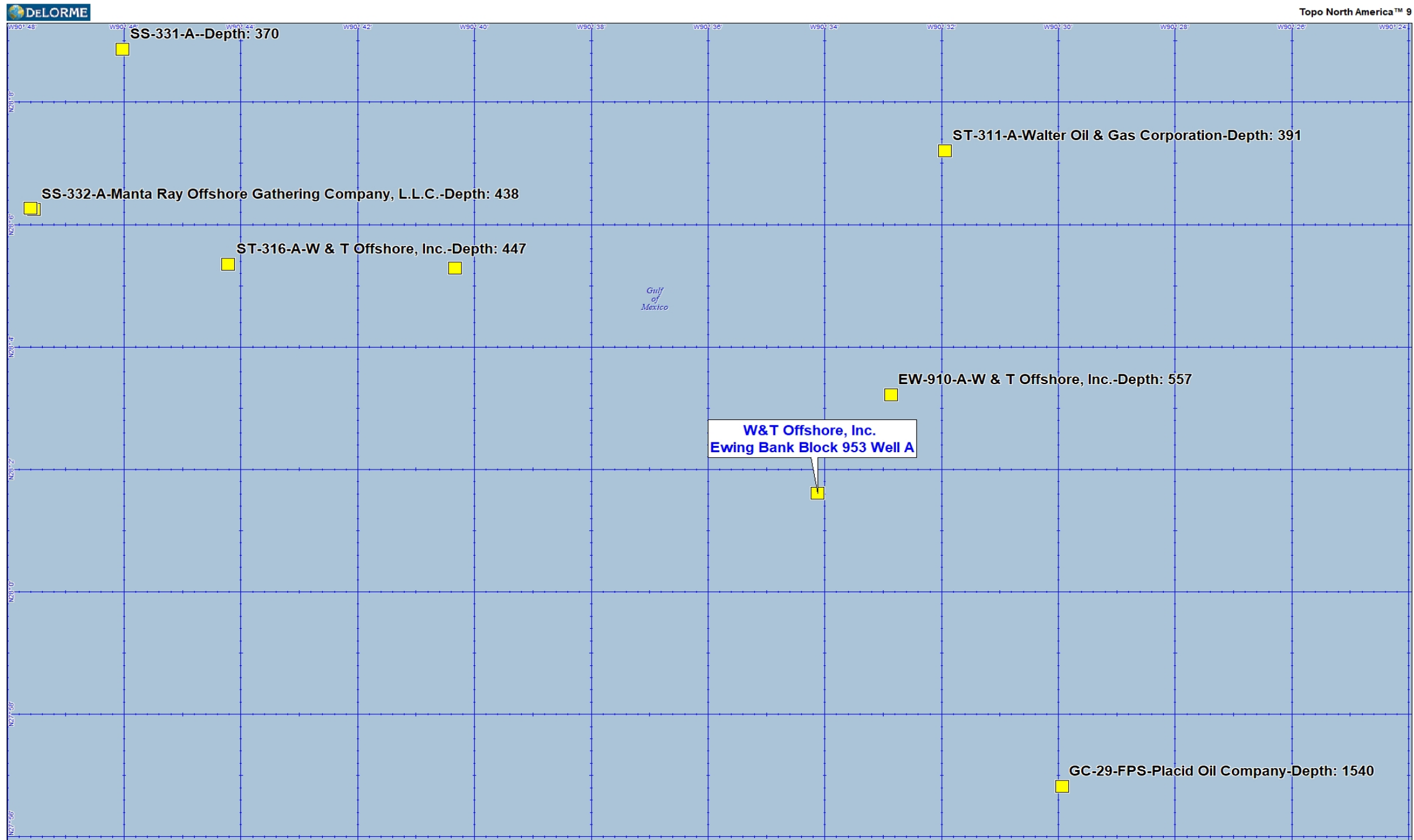
W&T Offshore, Inc.  
 Ewing Bank Block 953 Well A  
 Impact Probability Map



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W&T Offshore, Inc.  
Ewing Bank Block 953 Well A  
Impact Radius Map

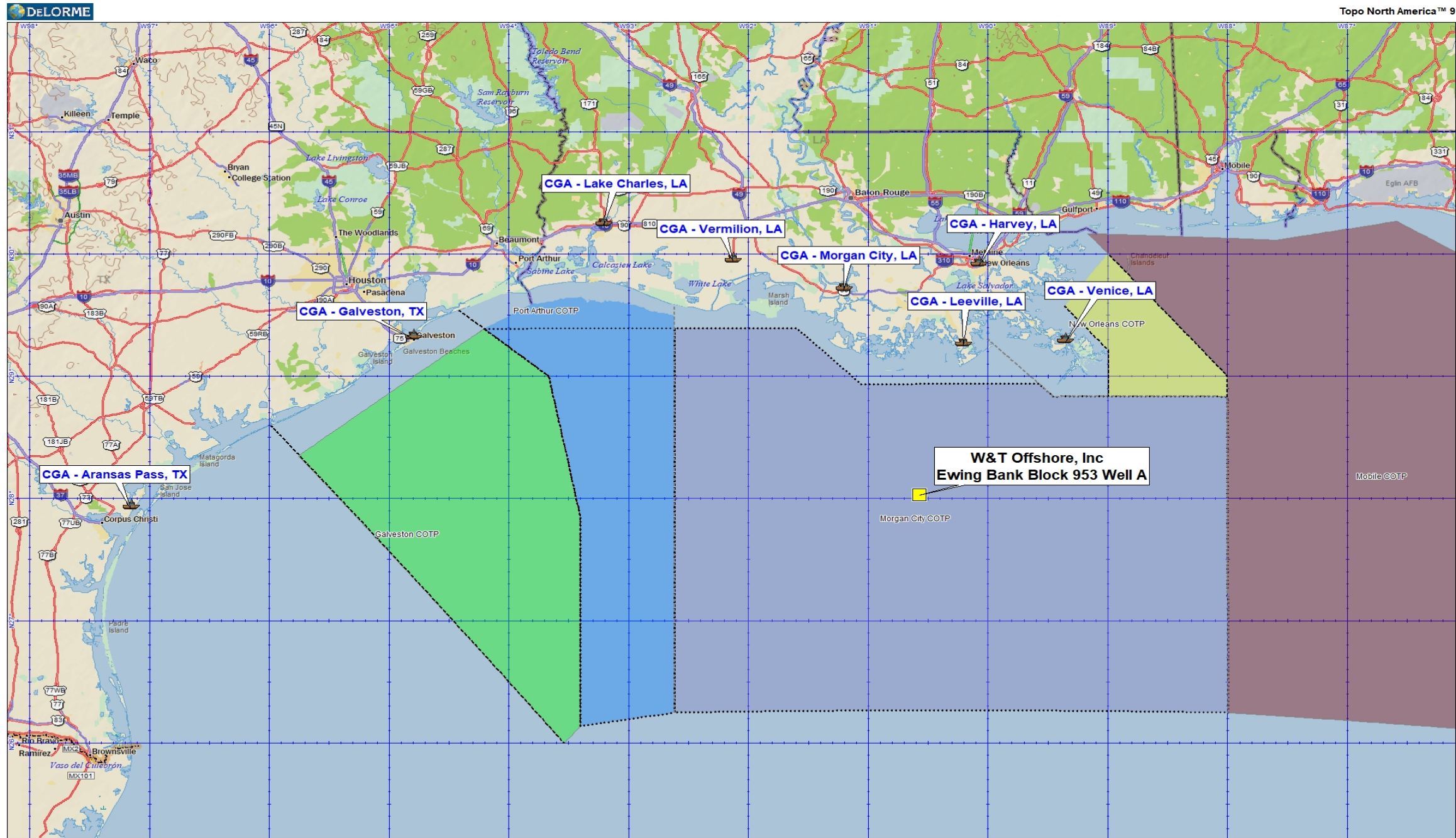


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W&T Offshore, Inc.  
Ewing Bank Block 953 Well A  
Offset Operators Map



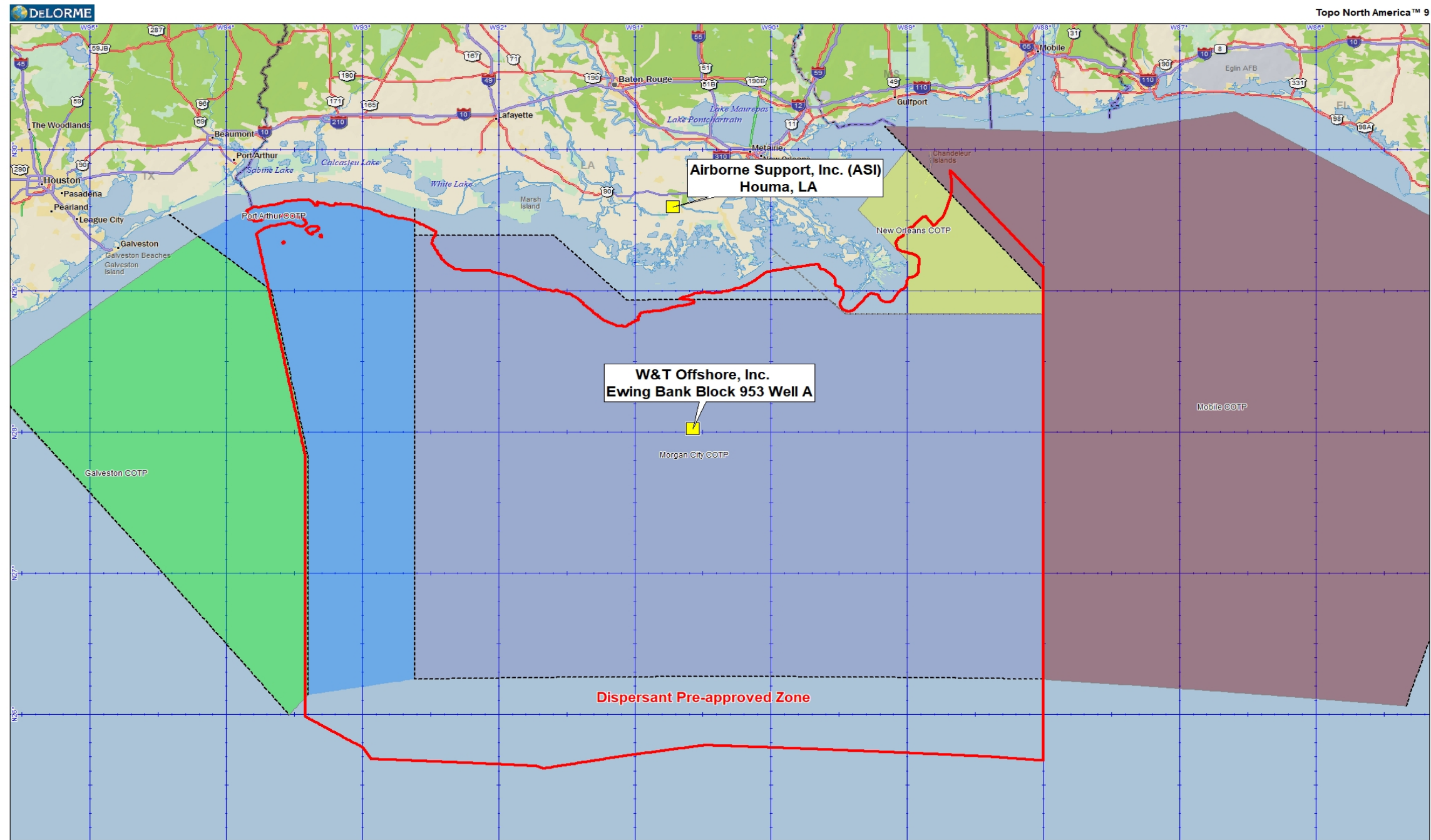
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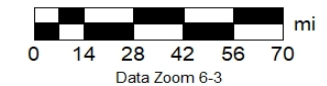
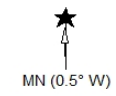
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W&T Offshore, Inc.  
 Ewing Bank Block 953 Well A  
 Clean Gulf Associates (CGA) Warehouse Locations Map



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W&T Offshore, Inc.  
 Ewing Bank Block 953 Well A  
 Dispersant Application Map

## **APPENDIX I: ENVIRONMENTAL MONITORING INFORMATION**

### **I.1 Monitoring Systems**

There are no environmental monitoring systems currently in place or planned for the proposed activities.

### **I.2 Incidental Takes**

There is no reason to believe that any of the endangered species or marine mammals as listed in the ESA will be “taken” as a result of the operations proposed under this plan.

To date, it has been documented that the use of explosives and/or seismic devices can affect marine life. Operations proposed in this plan will not be utilizing either of these devices.

### **I.3 Flower Garden Banks National Marine Sanctuary**

The surface locations in Ewing Bank Block 954 are not located in the Flower Garden Banks National Marine Sanctuary; therefore, the requested information is not required in this EP.

## **APPENDIX J: LEASE STIPULATIONS INFORMATION**

Development activities are subject to the following stipulations attached to each lease.

### **J.1 Lease Stipulation No. 1 – Protection of Archeological Resources**

Lease OCS-G 13081 was issued with the Protection of Archaeological Resources stipulation attached to the oil and gas lease. See Appendix C for further information.

### **J.2 Lease Stipulation No. 4 – Military Warning Area**

Lease OCS-G 13081 was issued with the Military Warning Area stipulation. W&T's proposed activities are located within the designated MWA-W92. The Fleet Area Control and Surveillance Facility located in Jacksonville, Florida, will be contacted in order to coordinate and control the electromagnetic emissions during the proposed operations.

### **J.3 Lease Stipulation No. 3 - Military Warning Area**

Lease OCS-G 35303 was issued with the Military Warning Area stipulation. W&T's proposed activities are located within the designated MWA-W92. The Fleet Area Control and Surveillance Facility located in Jacksonville, Florida, will be contacted in order to coordinate and control the electromagnetic emissions during the proposed operations.

### **J. 4 Lease Stipulation No. 8 – Protected Species**

Lease OCS-G 35303 was issued with the Protected Species stipulation. This stipulation is meant to reduce the potential taking of marine protected species. W&T will operate in accordance with NTL 2016-G01, to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species, and the prevention of intentional and/or accidental introduction of debris into the marine environment.

## **APPENDIX K: ENVIRONMENTAL MITIGATION MEASURES INFORMATION**

### **K.1 Mitigation Measures Taken to Minimize Impact to Marine and Coastal Environment**

The activities proposed in this EP do not affect the State of Florida; therefore, this information is not being provided.

### **K.2 Incidental Takes**

W&T will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the ESA from the operations conducted herein:

- NTL 2016-G01 (BOEM), "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting"
- NTL 2015-G03 (BSEE), "Marine Trash and Debris Awareness and Elimination"
- NTL 2016-G02 (BOEM), "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"

## APPENDIX L: SUPPORT VESSELS AND AIRCRAFT INFORMATION

### L.1 General

Information regarding the vessels and aircraft to be used to support the Proposed activities are detailed in the table below:

<i>Type</i>	<i>Maximum Fuel Tank Capacity</i>	<i>Maximum Number in Area at Any Time</i>	<i>Trip Frequency or Duration</i>
Tug Boats	3000 bbls	3	6 days
Anchor Handling Boat	1500 bbls	2	6 days
Crew Boat	500 bbls	1	Three times per week
Supply Boat	500 bbls	1	Three times per week
Helicopter	383 gallons	1	As needed

The most practical, direct route from the shorebase as permitted by weather and traffic conditions will be utilized.

### L.2 Diesel Oil Supply Vessels

Additional information regarding the diesel supply vessel being used during our proposed operations is detailed in the table below:

<i>Size of Fuel Supply Vessel</i>	<i>Capacity of Fuel Supply Vessel</i>	<i>Frequency of Transfers</i>	<i>Route Fuel Supply Vessel Will Take</i>
180 ft. vessel	2500 bbls	1/wk	Most direct route from the Fourchon, La. to the rig

### L.3 Drilling Fluid Transportation

The activities proposed under this EP do not affect the State of Florida; therefore, this information is not being submitted.

### L.4 Solid and Liquid Waste Transportation

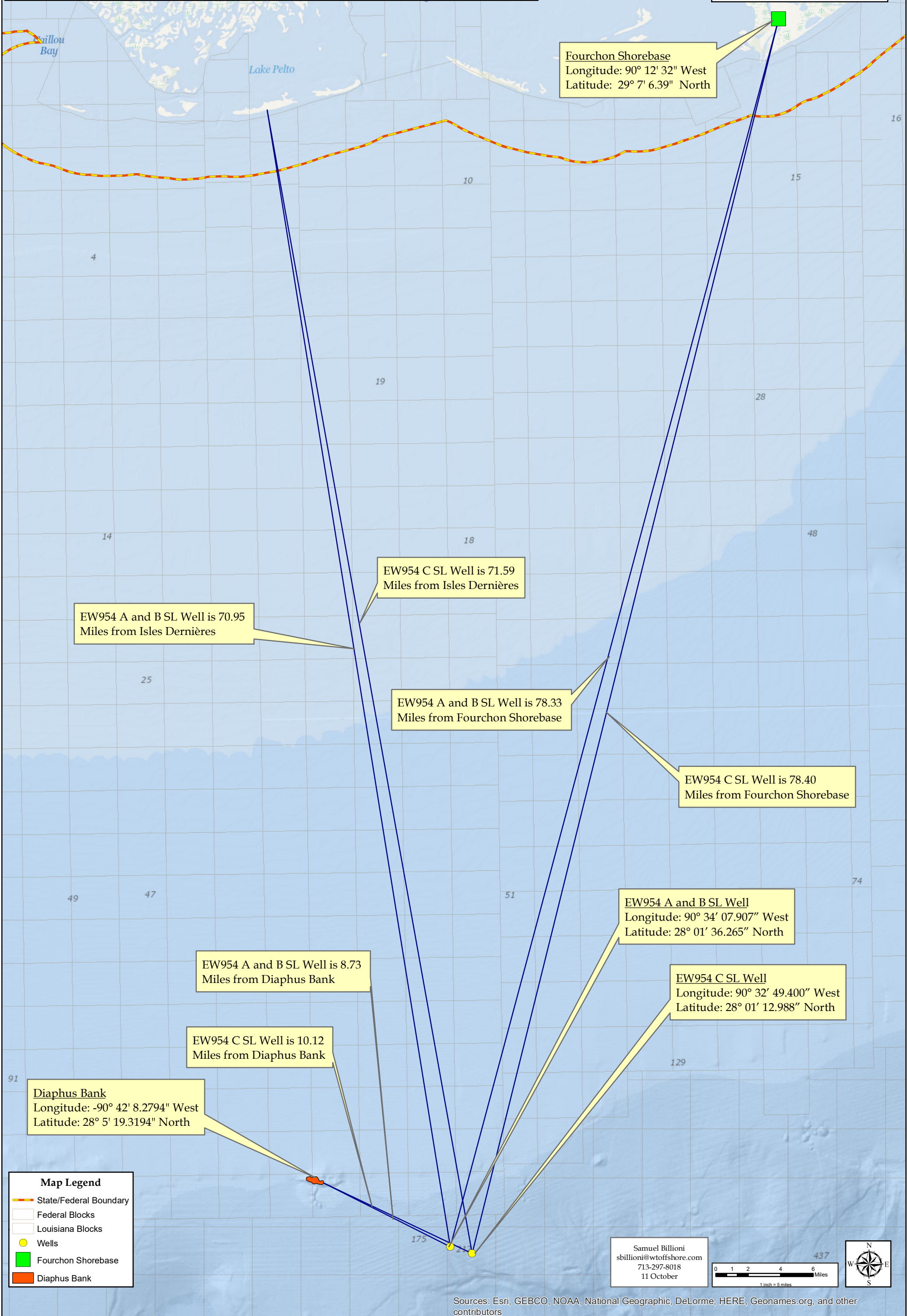
Information regarding the solid and liquid wastes to be used for our proposed operations are included in **Attachments G-1 and G-2** located in Appendix G of this document.

### L.5 Vicinity Map

Enclosed as **Attachment L-1** is a vicinity map showing the location of the activities proposed herein relative to the shoreline with the distance of the proposed activities from the shoreline and the primary route(s) of the support vessels and aircraft that will be used when traveling between the onshore support facilities and the drilling unit.

# EW954 A, B and C SL Wells Vicinity Map

Timbalier Bay



Sources: Esri, GEBCO, NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors

## **APPENDIX M: ONSHORE SUPPORT FACILITIES INFORMATION**

### **M.1 General**

Listed in the table below is information on the onshore facility supporting the operations as outlined in this EP.

<b><i>Name</i></b>	<b><i>Location</i></b>	<b><i>Existing/New/Modified</i></b>
Fourchon Service Base	Port Fourchon, LA	Existing

### **M.2 Support Base Construction or Expansion**

There will be no new construction of an onshore support base, nor will we expand the existing shorebase as a result of the operations proposed in this EP.

## **APPENDIX N: COASTAL ZONE MANAGEMENT (CZMA) INFORMATION**

Relevant enforceable policies were considered in certifying consistency for Louisiana. A certificate of Coastal Zone Management Consistency for the state of Louisiana is enclosed as ***Attachment N-1***.

**LOUISIANA**  
**COASTAL ZONE MANAGEMENT**  
**CONSISTENCY CERTIFICATION**

**JOINT INITIAL  
EXPLORATION PLAN**

**LEASES OCS-G 35303 & 13081  
EWING BANK BLOCKS 953 & 954**

The proposed activities described in detail in this OCS Plan comply with Louisiana's approved Coastal Management Program and will be conducted in a manner consistent with such Program.

W&T Offshore, Inc  
\_\_\_\_\_  
Lessee or Operator

*Valerie Land*  
\_\_\_\_\_  
Certifying Official

*10/18/2017*  
\_\_\_\_\_  
Date

ATTACHMENT N-1

## APPENDIX O: ENVIRONMENTAL IMPACT ANALYSIS (EIA)

Environmental Resources	Impact Producing Factors (IPFs)					
	Emissions (air, noise, light, etc.)	Effluents (muds, cuttings, other discharges to the water column or seafloor)	Physical Disturbances To the seafloor (rig or anchor placement, etc.)	Wastes Sent to Shore for Treatment Or disposal	Accidents (e.g. oil spills, Chemical spills, I-12S releases)	Discarded Trash & Debris
<b>Site Specific at Offshore Location</b>						
Designated Topographic Feature		(1)	(1)		(1)	
Pinnacle Trend Area; Live Bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Chemosynthetic communities			(4)			
Water quality		X	X		X	
Fisheries		X	X		X	
Marine mammals	X(8)	X			X(8)	X
Sea turtles	X(8)	X			X(8)	X
Air quality	X(9)					
Shipwreck sites (known or potential)			X(7)			
Prehistoric archaeological sites			X (7)			
<b>Vicinity of Offshore Location</b>						
Essential fish habitat		X	X		X(6)	
Marine and pelagic birds	X				X	X
Public health and safety					(5)	
<b>Coastal and Onshore</b>						
Beaches					X(6)	
Wetlands					X(6)	
Shorebirds and coastal nesting birds					X(6)	
Coastal wildlife refuges					X	
Wilderness areas					X	
<b>Other Resources</b>						

## Footnotes for Environmental Impact Analysis Matrix

1. Activities that may affect a marine sanctuary or topographic feature. Specifically, if the well or platform site or any anchors will be on the seafloor within the:
  - a. 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank;
  - b. 1000-m, 1 mile, or 1000-m, 1 mile or 3-mile zone of any topographic feature (submarine bank) protected by the Topographic Features Stipulation attached to an OCS lease;
  - c. Essential Fish Habitat (EFH) criteria of 500 ft. from any no-activity zone; or
  - d. Proximity of any submarine bank (500 ft. buffer zone) with relief greater than 2 meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
2. Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
3. Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low-Relief) Stipulation attached to an OCS lease.
4. Activities on blocks designated by the BOEM as being in water depths 400 meters or greater.
5. Exploration or production activities where H<sub>2</sub>S concentrations greater than 500 ppm might be encountered.
6. All activities that could result in an accidental spill of produced liquid hydrocarbons or diesel fuel that you determine would impact these environmental resources. If the proposed action is located a sufficient distance from a resource that no impact would occur, the EIA can note that in a sentence or two.
7. All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the BOEM as having high-probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed activities are located a sufficient distance from a shipwreck or a prehistoric site that no impact would occur, the EIA can note that in a sentence or two.
8. All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.
9. Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.

### **O.1 Site Specific at Offshore Location**

Activities proposed under this plan include drilling and completing Well Location A, B, and C from surface locations in Ewing Bank Block 954.

#### ***Designated Topographic Features***

The nearest topographic feature is the Diaphus Bank in the South Timbalier Area, South Addition, Blocks 315, 314, 316, and 317. Our proposed surface locations in Ewing Bank Block 954 are between 8 – 10 miles from this feature. As such, there will be no impacts on this feature from our operations under this plan.

#### ***Pinnacle Trend Area Live Bottoms***

The surface locations proposed in Ewing Bank Block 954 are not located in an area known to contain live bottoms. The shallow hazard survey conducted in this lease block confirmed no live bottom pinnacle trend features within 500 feet of our operations in Ewing Bank Block 954; and, as such, no impacts to live bottoms are expected as a result of our operations under this plan.

#### ***Eastern Gulf Live Bottoms***

Activities in this plan do not affect the Eastern portion of the Gulf of Mexico; therefore, no impacts to Eastern Gulf Live Bottoms are expected as a result of our operations proposed under this plan.

#### ***Chemosynthetic Communities***

Activities proposed in this plan are located in water depths of 683 – 766 feet. High-density chemosynthetic communities are only found in water depths greater than 1,312 feet (400 meters) or greater; therefore, our proposed operations in Ewing Bank Block 954 would not cause impacts to chemosynthetic communities.

#### ***Water Quality***

IPFs that could result in water quality degradation from the proposed operations in Ewing Bank Block 954 include disturbances to the seafloor, effluents and accidents.

- *Physical disturbances to the seafloor:* Bottom area disturbances resulting from the emplacement of drilling rigs and associated anchors, the drilling of wells and the installation of platforms and pipelines would increase water-column turbidity and re-suspension of any accumulated pollutants, such as trace metals and excess nutrients. This would cause short-lived impacts on water quality conditions in the immediate vicinity of the emplacement operations.
- *Effluents:* The EPA NPDES permit regulates all levels of contaminants in drilling muds, cuttings and produced water discharges, discharge-rate restrictions, monitoring and toxicity testing, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to water quality.
- *Accidents:* Oil spills have the potential to alter offshore water quality; however, it is unlikely that an accidental surface or subsurface spill would occur from the proposed activities. Between 1980 and 2000, OCS operations produced 4.7 billion barrels of oil and spilled only 0.001 percent of this oil, or 1 bbl for every 81,000 bbl produced. The spill risk related to a diesel spill from drilling operations is even less. Between 1976 and 1985, (years for which data were collected), there were 80 reported diesel spills greater than one barrel

associated with drilling activities. Considering that there were 11,944 wells drilled, this is a 0.7 percent probability of an occurrence. If a spill were to occur, the dissolved components and small oil droplets would temporarily affect the water quality of marine waters. Dispersion by currents and microbial degradation would remove the oil from the water column and dilute the constituents to background levels. Historically, changes in offshore water quality from oil spills have only been detected during the life of the spill and up to several months afterwards. Most of the components of oil are insoluble in water and therefore float. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional Oil Spill Response Plan (refer to information submitted in **Appendix H**).

There are no other IPFs (including emissions and wastes sent to shore for disposal) from the proposed activities, which could cause impacts to water quality.

### ***Fisheries***

IPFs resulting from our operations in Ewing Bank Block 954 that could cause impacts to fisheries include physical disturbances to the seafloor, effluents and accidents.

- *Physical disturbances to the seafloor:* The emplacement of a structure or drilling rig in minimal loss of bottom trawling area to commercial fishermen. Pipelines can cause gear conflicts, which result in losses of trawls, and shrimp catch, business downtime and vessel damage. The Fishermen's Contingency Fund (FCF) covers most financial losses from gear conflicts. The emplacement and removal of facilities are not expected to cause significant adverse impacts to fisheries.
- *Effluents:* Effluents such as drilling fluids and cuttings discharges contain components and properties, which are detrimental to fishery resources. Moderate petroleum and metal contamination of sediments and the water column can occur out to several hundred meters down current from the discharge point. Offshore discharges are expected to disperse and dilute to very near background levels in the water column or on the seafloor within 3000 m of the discharge point, and are expected to have negligible on effect on fisheries.
- *Accidents:* An accidental oil spill has the potential to cause some detrimental effects on fisheries; however, it is unlikely that such an event would occur from the proposed activities (refer to "Water Quality"). The effects of oil on mobile adult finfish or shellfish would likely be sublethal and the extent of damage would be reduced to the capacity of adult fish and shellfish to avoid the spill, to metabolize hydrocarbons, and to excrete both metabolites and parent compounds. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).

There are no IPFs from emissions, or wastes sent to shore for disposal from the proposed activities that could cause impacts to fisheries.

### ***Marine Mammals***

GulfCet II studies revealed that cetaceans of the continental shelf and shelf-edge were almost exclusively bottlenose dolphin and Atlantic spotted dolphin. Squid eaters, including dwarf and pygmy killer whale, Risso's dolphin, rough-toothed dolphin, and Cuvier's beaked whale, occurred most frequently along the upper slope in areas outside of anticyclones. IPFs that could cause impacts to marine mammals from the proposed operations in Ewing Bank Block 954 include emissions, effluents, discarded trash and debris, and accidents.

- *Emissions:* Noise from drilling activities, support vessels and helicopters may elicit a startled reaction from marine mammals. This reaction may lead to disruption of a marine mammal's normal activities. Stress may make them more vulnerable to parasites, disease, environmental contaminants, and/or predation (Majors and Myrick, 1990). There is little conclusive evidence for long-term displacements and population trends for marine mammals relative to noise.
- *Effluents:* Drilling fluids and cuttings discharges contain components, which may be detrimental to marine mammals. Most operational discharges are diluted and dispersed upon release. Any potential impact from drilling fluids would be indirect, either from impacts on prey items or possibly through ingestion in the food chain (API, 1989).
- *Discarded trash and debris:* Entanglement in, and ingestion of debris have caused the death or serious injury of marine mammals (Laist, 1997; MMC, 1999). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to harm marine mammals. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

W&T Offshore, Inc. will operate in accordance with the regulations and avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training video annually.

- *Accidents:* Collisions between support vessels and cetaceans would be unusual events, however should one occur, death or injury to marine mammals is possible. Contract vessel operators can avoid marine mammals and reduce potential deaths by maintaining a vigilant watch for marine mammals and maintaining a safe distance when they are sighted. Vessel crews should use a reference guide to help identify the twenty-eight species of whales and dolphins, and the single species of manatee that may be encountered in the Gulf of Mexico OCS. Vessel crews must report sightings of any injured or dead protected marine mammal species immediately, regardless of whether the injury or death is caused by their vessel, to the Marine Mammal and Sea Turtle Stranding Hotline at (800) 799-6637, or the Marine Mammal Stranding Network at (305) 8622850. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEMRE will be notified within 24 hours of the strike by email to [protectedspecies@boem.gov](mailto:protectedspecies@boem.gov). If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

Oil spills have the potential to cause sub-lethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to "Water Quality"). Oil spill response activities may increase vessel traffic in the area, which could add to changes in cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. The acute toxicity of oil dispersant chemicals included in W&T Offshore, Inc.'s OSRP is considered to be low when compared with the constituents and fractions of crude oils and diesel products. The activities proposed in this plan will be covered by the OSRP (refer to information submitted in **Appendix H**).

There are no other IPFs (including physical disturbances to the seafloor) from the proposed activities that could affect marine mammals.

### ***Sea Turtles***

IPFs that could cause impacts to sea turtles from the proposed operations include emissions, effluents, discarded trash and debris, and accidents. GulfCet II studies sighted mostly loggerhead, Kemp's ridley and leatherback sea turtles over shelf waters. Historically these species have been sighted up to the shelf's edge. They appear to be more abundant east of the Mississippi River than west of the river (Fritts et al., 1983b; Lohofener et al., 1990). Deep waters are used by all species as a transitory habitat.

- *Emissions*: Noise from drilling activities, support vessels and helicopters may elicit a startle reaction from sea turtles, but this is a temporary disturbance.
- *Effluents*: Drilling fluids and cuttings discharges are not known to be lethal to sea turtles. Most operational discharges are diluted and dispersed upon release. Any potential impact from drilling fluids would be indirect, either from impacts on prey items or possibly through ingestion in the food chain (API, 1989).
- *Discarded trash and debris*: Entanglement in, and ingestion of, debris have caused the death and serious injury of sea turtles (Balazs, 1985). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to harm sea turtles. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulation imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). W&T Offshore, Inc. will operate in accordance with the regulations and avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It.". Thereafter, all personnel will view the marine trash and debris training video annually.

- *Accidents:* Collisions between support vessels and sea turtles would be unusual events, however should one occur, death or injury to sea turtles is possible. Contract vessel operators can avoid sea turtles and reduce potential deaths by maintaining a safe distance when they are sighted. Vessel crews should use a reference guide to help identify the five species of sea turtles that may be encountered in the Gulf of Mexico OCS. Vessel crews must report sightings of any injured or dead protected sea turtle species immediately, regardless of whether the injury or death is caused by their vessel, to the Marine Mammal and Sea Turtle Stranding Hotline at (800) 799-6637, or the Marine Mammal Stranding Network at (305) 862-2850. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEMRE must be notified within 24 hours of the strike by email to [protectedspecies@boemre.gov](mailto:protectedspecies@boemre.gov). If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

As sea turtle species and their life stages are vulnerable to the harmful effects of oil through direct contact or by fouling their food. Exposure to oil can be fatal, particularly to juveniles and hatchlings. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to the possibility of collisions with sea turtles. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional Oil Spill Response Plan (refer to information submitted in **Appendix H**).

There are no other IPFs (including physical disturbances to the seafloor) from the proposed activities, which could affect sea turtles.

### ***Air Quality***

The projected air emissions identified in **Appendix G** are not expected to affect the OCS air quality primarily due to distance to the shore or to any Prevention of Significant Deterioration Class I air quality area such as the Breton Wilderness Area.

Accidents and blowouts can release hydrocarbons or chemicals, which could cause the emission of air pollutants. However, these releases would not affect onshore air quality because of the prevailing atmospheric condition, emission height, emission rates, and the distance of Ewing Bank Block 954 from the coastline. There are no other IPFs (including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal) from the proposed activities, which could impact air quality.

### ***Shipwreck Sites (known or potential)***

IPFs resulting from our proposed operations that could affect known or unknown shipwreck sites include disturbances to the seafloor. Ewing Bank Block 954 is located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. W&T Offshore, Inc. will report to BOEM the discovery of any evidence of a shipwreck and make every reasonable effort to preserve and protect that cultural resource. There are no other IPFs (including emissions, effluents, wastes sent to shore for treatment or disposal, or accidents) from the proposed activities, which could impact shipwreck sites.

### ***Prehistoric Archaeological Sites***

IPFs resulting from our operations in Ewing Bank Block 954 that could impact prehistoric archaeological sites are physical disturbances to the seafloor and accidents (oil spills).

- *Physical disturbances to the seafloor:* Ewing Bank Block 954 is located within an area

determined to have a high probability of Archaeological Prehistoric Cultural Resources. Should W&T Offshore, Inc. encounter any resource that is prehistoric (or historic) in nature during our activities, we will report to BOEM and make every reasonable effort to preserve and protect that culture resource.

- *Accidents:* An accidental oil spill has the potential to cause some detrimental effects to prehistoric archaeological sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to “Water Quality”). The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional Oil Spill Response Plan (refer to information submitted in **Appendix H**).

There are no other IPFs (including emissions, effluents, wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to prehistoric archaeological sites.

## **Q.2 Vicinity of Offshore Location**

### ***Essential Fish Habitat (EFH)***

IPFs resulting from our operations in Ewing Bank Block 954 that could cause impacts to EFH include physical disturbances to the seafloor, effluents and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of Mexico.

- *Physical disturbances to the seafloor:* The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from bottom disturbing activities (e.g., anchoring, structure emplacement and removal).
- *Effluents:* The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from operational waste discharges. Levels of contaminants in drilling mud and cuttings and produced- water discharges, discharge-rate restrictions, and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to EFH.
- *Accidents:* An accidental oil spill has the potential to cause some detrimental effects on EFH. Oil spills that contact coastal bays and estuaries, as well as OCS waters when pelagic eggs and larvae are present have the greatest potential to affect fisheries. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Water Quality**). The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).

There are no other IPFs (including emissions or wastes sent to shore for treatment or disposal) from the proposed activities that could affect essential fish habitat.

### ***Marine and Pelagic Birds***

IPFs that could impact marine birds as a result of the proposed activities include air emissions, accidental oil spills, and discarded trash and debris from vessels and the facilities.

- *Emissions:* Emissions of pollutants into the atmosphere from these activities are far below

concentrations, which could harm coastal and marine birds.

- *Accidents:* An oil spill would cause localized, low-level petroleum hydrocarbon contamination. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Item 5, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).
- *Discarded trash and debris:* Marine and pelagic birds could become entangled and snared in discarded trash and debris, or ingest small plastic debris, which can cause permanent injuries and death. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

W&T Offshore, Inc. will operate in accordance with the regulations and avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training video annually. Debris, if any from these proposed activities will seldom interact with marine and pelagic birds; therefore, the effects will be negligible.

There are no other IPFs (including effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities, which could affect marine and pelagic birds.

#### ***Public Health and Safety Due to Accidents***

There are no IPFs (emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal or accidents, including an accidental H<sub>2</sub>S releases) from the proposed activities, which could cause impacts to public health and safety.

### **O.3 Coastal and Onshore**

#### ***Beaches***

IPFs from the proposed activities that could cause impacts to beaches include accidents (oil spills) and discarded trash and debris.

- *Accidents:* Oil spills contacting beaches would have impacts on the use of recreational beaches and associated resources. Although relatively close to shore (71 miles),

prevailing longshore currents would allow sufficient time to implement an effective response; therefore, no significant adverse impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).

- *Discarded trash and debris:* Trash on the beach is recognized as a major threat to the enjoyment and use of beaches. There will only be a limited amount of marine debris, if any, resulting from the proposed activities. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). W&T Offshore, Inc. will operate in accordance with the regulations and avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training annually.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities, which could affect beaches.

### **Wetlands**

IPFs resulting from our operations in Ewing Bank Block 954 that would cause impacts to wetlands would be from an accidental oil spill.

- *Accidents:* Oil spills could cause impacts to wetlands, however, it is unlikely that an oil spill would occur from the proposed activities (refer to "Water Quality"). Although relatively close to shore (71 miles) prevailing longshore currents would allow sufficient time to implement an effective response; therefore, no impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities, which could affect wetlands.

### **Shore Birds and Coastal Nesting Birds**

IPFs resulting from our proposed operations in Ewing Bank Block 954 that could affect shore birds and coastal nesting birds would be accidents and discarded trash and debris.

- *Accidents:* Oil spills could cause impacts to shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed activities (refer to "Water Quality"). Although relatively close to shore (71 miles), prevailing longshore currents would allow sufficient time to implement an effective response; therefore, no

impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).

- *Discarded trash and debris:* Coastal and marine birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically plastic. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). W&T Offshore, Inc. will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the OOC Marine Debris video (or Microsoft PowerPoint presentation), "Think About It". Thereafter, all personnel will view the marine trash and debris training video annually.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or waste sent to shore for treatment or disposal) from the proposed activities that could cause impacts to shore birds and coastal nesting birds.

### ***Coastal Wildlife Refuges***

IPFs resulting from our proposed operations in Ewing Bank Block 954 that could have an impact on coastal wildlife refuges would be accidents.

- *Accidents:* An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to "Water Quality"). Although relatively close to shore (71 miles), prevailing longshore currents would allow sufficient time to implement an effective response; therefore, no impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or waste sent to shore for treatment or disposal) from the proposed activities that could cause impacts to coastal wildlife refuges.

### ***Wilderness Areas***

- *Accidents:* An accidental oil spill from the proposed activities could cause impacts to wilderness areas. However, it is unlikely than a spill would occur from the proposed activities (refer to "Water Quality"). Although relatively close to shore (71 miles), prevailing longshore currents would allow sufficient time to implement an effective response;

therefore, no significant adverse impacts are expected. The activities proposed in this plan will be covered by W&T Offshore, Inc.'s Regional OSRP (refer to information submitted in **Appendix H**).

#### **O-4 Other Environmental Resources Identified**

- (A) Impacts on your proposed activities: The site-specific environmental conditions have been taken into account for the proposed activities. No impacts are expected on the proposed activities from site- specific environmental conditions.
- (B) Environmental Hazards: During the hurricane season, June through November, the Gulf of Mexico is impacted by an average of ten storms (39-73 mph winds), of which six become hurricanes (>74 mph winds). Due to its location in the gulf, Ewing Bank Block 954 may experience hurricane and tropical storm force winds, and related sea currents. These factors can adversely impact the integrity of the operations covered by this plan. A significant storm may present physical hazards to operators and vessels, damage exploration or production equipment, or result in the release of hazardous materials (including hydrocarbons). Additionally, the displacement of equipment may disrupt the local benthic habitat and pose a threat to local species.

The following preventative measures included in this plan will be implemented to mitigate these impacts:

Drilling:

- Secure Location
- Secure Semi-Submersible
- Evacuate personnel

Drilling activities will be conducted in accordance with Title 30 CFR 250, Subparts C and D.

- (E) Alternatives  
No alternatives to the proposed activities were considered to reduce environmental impacts.
- (F) Mitigation Measures  
No mitigation measures other than those required by regulation will be employed to avoid, diminish, or eliminate potential impacts on environmental resources.
- (G) Consultation  
No agencies or persons were consulted regarding potential impacts associated with the proposed activities. Therefore, a list of such entities has not been provided.
- (H) Preparer/Contact:  
If you have any questions regarding this document, please contact:

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(I) References

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Although not cited, the following were utilized in preparing this EIA:

- Hazard Surveys

- BOEM EIS's:
  - GOM Deepwater Operations and Activities. Environmental Assessment. MMS 2000-001
  - GOM Central and Western Planning Areas Sales 166 and 168 Final Environmental Impact Statement. MMS 96-0058

## APPENDIX P: ADMINISTRATIVE INFORMATION

### **P.1 Exempted Information Description**

The proposed bottom-hole locations of the planned wells have been removed from the public information copy of the EP as well as any discussions of the target objectives, geologic or geophysical data, and any interpreted geology.

### **P.2 Bibliography**

Not applicable.