ALABAMA
OIL & GAS BOARD

EXHIBIT 1

Docket No. 2-19-26-01

Prepared by Leigh Blake

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

Docket No. 2-19-26-01

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

AFFIDAVIT OF LEIGH BLAKE

STATE OF ALABAMA

COUNTY OF MOBILE

Before me, the undersigned notary public in and for said county in said state, personally appeared Leigh Blake and testified to the following:

My name is Leigh Blake. I am presently employed by the State Oil and Gas Board of Alabama (hereinafter referred to as "Board"). My current position with the Board is Manager, South Alabama Field Operations. In my position, I am responsible for oil and gas operations in South Alabama. In my position, I am familiar with the operations of W&T Offshore, Inc., in offshore Alabama waters.

Currently, W&T Offshore, Inc., operates thirty-nine (39) wells (35 offshore wells and four saltwater disposal wells). Twenty-two (22) of the wells are producing gas wells; fourteen are classified as "temporarily abandoned," and one saltwater disposal well is classified as "temporarily abandoned."

The Board has ordered W&T Offshore, Inc., to plug four wells and remove three offshore platforms. In Order No. 2024-45, the Board ordered W&T to plug and abandon by December 31, 2025, the following two wells in Aloe Bay Field, in Mobile County, Alabama: State Lease 701 #2 Well, Permit No. 12604-OS-90-B, and the State Lease 701, Tract 75 #1 Well, Permit No. 9962-OS-44-B. In said Order No. 2024-45, the Board also ordered W&T to remove the shared platform (Platform MB-75F) by December 31, 2025.

In Order No. 2024-46, the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 538, Tract 115, Well No. 3, Permit No. 15847-OS-96, in North Central Gulf Field-Mobile Area, in Baldwin County by June 30, 2025, and remove the platform (Platform MB-115CD) by December 31, 2025. (In a prior order, Order No. 2023-49, the Board ordered W&T Offshore, Inc., to plug and abandon the well and remove the platform by December 31, 2024.)

In Order No. 2022-52, Order No. 2023-51, and Order No. 2024-48, the Board ordered W&T Offshore, Inc., to plug and abandon by June 30, 2025, and remove the platform (Platform MB-112BE) for the State Lease 537 Tract 112 #4 Well, Permit No. 18165-OS-85, in Northwest Gulf Field – Mobile Area, by December 31, 2025.

ALABAMA OIL & GAS BOARD

Exhibit No: 1
Petitioner: Board
Item No: 1 Date: 2-19-26
Witness: Leigh Blake
Received by: EP

W&T Offshore, Inc. has failed to plug and abandon the four wells ordered to be plugged. Furthermore, W&T has failed to remove the three offshore platforms. Therefore, W&T Offshore, Inc. is in violation of the orders of the Board described above to plug the four wells and remove the three offshore platforms.

Further, Affiant sayeth not.

LEIGH BLAKE
AFFIANT

SWORN to and SUBSCRIBED before me this 28th day of January 2026.

NOTARY PUBLIC

My Commission Expires Sep 1, 2026



ALABAMA
OIL & GAS BOARD

EXHIBIT 2

Docket No. 2-19-26-02

Prepared by Gordon "Butch" Gregory

Butch Gregory

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

Docket No. 2-19-26-02

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

AFFIDAVIT OF GORDON "BUTCH" GREGORY

STATE OF ALABAMA

COUNTY OF TUCSALOOSA

Before me, the undersigned notary public in and for said county in said state, personally appeared Gordon "Butch" Gregory and testified to the following:

My name is Gordon "Butch" Gregory. I am presently employed by the State Oil and Gas Board of Alabama (hereinafter referred to as "Board"). My current position with the Board is Oil and Gas Board Manager. In my position, I am primarily responsible for engineering matters related to oil and gas operations in Alabama. In my position, I am familiar with the operations of W&T Offshore, Inc. (hereinafter referred to as "W&T") in offshore Alabama waters.

Currently, W&T operates thirty-nine (39) wells (35 offshore wells and four saltwater disposal wells). Twenty-two (22) of the wells are producing gas wells; fourteen are classified as "temporarily abandoned," and one saltwater disposal well is classified as "temporarily abandoned."

In my position, I am aware of the reports filed by W&T in connection with spills and leaks of the offshore pipelines operated by W&T. The specific form that is due to be filed with the Board when there is a spill or leak is Form OGB-27 entitled Notification of Fire, Spill, Leak, or Blow Out Incident Report.

I have attached hereto as Exhibit "A" copies of the Form OGB-27 that W&T has filed since 2022. I have also attached with each Incident Report any correspondence or information and documents filed by W&T that is related to the particular incident. Furthermore, I have attached a Summary of the various incidents summarizing pertinent information from the incidents. The Incident Reports, the related correspondence, and the Summary show the spills and leaks of which I am aware, and there may, of course, be other spills and leaks of which the Board's staff and I are not aware. As indicated on the Incident Reports and my Summary, most of the spills and leaks were from the "produced liquids" pipeline that transports produced liquids under Mobile Bay onshore for disposal.

ALABAMA OIL & GAS BOARD

Exhibit No: 2
Petitioner: Board
Item No: 2 Date: 2-19-26
Witness: Butch Gregory
Received by: EP

Rule 400-2-8-.03 of the *State Oil and Gas Board of Alabama Administrative Code* provides:

> All spills or leakage of oil and liquid substances not approved for discharge shall be reported orally to the Supervisor or his representative within the following limits: . . . immediately, if spill or leakage is more than one (1) gallon in the aggregate. Within fifteen (15) days after reporting a spill or leakage, . . . Form OGB-27, Notification of Fire, Spill, Leak, or Blowout Incident Report, shall be filed with the Supervisor describing the location, size, and cause of such spill or leakage, action, and the effectiveness of removal and cleanup operations.

Furthermore, the rule requires that, "The operator shall immediately take the appropriate action to clean up spills and repair leaks. Additionally, the operator shall notify other appropriate governmental agencies of the incident."

In summary, the offshore operations of W&T have resulted in multiple leaks and spills of substances not approved for discharge. Therefore, W&T is in violation of the above-cited rule. Furthermore, W&T has failed to comply with the above-cited rule in that W&T has failed to notify the Board timely of the spills and leaks noted above. Further, W&T has failed to submit pertinent information of each Form OGB-27, such as the "Estimated Volume of Spill or Leak."

Since the beginning of oil and gas operations in Alabama offshore waters, the State of Alabama has adopted a policy of "zero discharge" into Mobile Bay and the offshore waters of the State. With its continued and frequent spills and leaks noted above, W&T is in violation of the "zero discharge" policy.

As documented above, the "produced liquids" pipeline operated by W&T has sustained numerous spills and leaks during the last several years. The statement on several of the Incident Reports is that the cause of the spill or leak was "corrosion." In reviewing the Incident Reports, related correspondence, and observing the spill and leaks from the "produced liquids" pipeline, I have observed that W&T addresses the issue of spills and leaks by utilizing the practice of placing a clamp or clamps on the pipeline to repair the leak. I have observed, however, that from time to time when W&T conducts a hydraulic test to test the repair, other "secondary" leaks have occurred on the pipeline caused merely by the pressure of the hydraulic test. These "secondary" leaks indicate that the "produced liquids" pipeline has corroded to the extent that the subject line has reached the end of its useful life.

With respect to the spills and leaks from the "produced liquids" pipeline, the Board's staff obtained copies of analyses of produced liquids prepared by Pace Analytical Services, 4320

Midmost Dr., Mobile, Alabama 36609. Pace Analytical Services prepared the analyses on behalf of W&T. I have attached as Exhibit "B" the analyses, which are presented by the field from which the liquids were produced. I have also attached a copy of a summary of the analyses. The cover letter to the analyses prepared by Pace Analytical Services states that the analyses were conducted from samples "received by the laboratory on November 18, 2025." The analyses included a detailed Chain of Custody. Further, a page entitled Chain of Custody states that the samples were collected on November 18, 2025. Each analysis shows the amount of certain constituents in the sample.

With respect to the analysis of constituents of Bon Secour Bay Field, the field produces certain constituents that are greater than the U.S. Environmental Protection Agency (USEPA) drinking water maximum contaminant level. The following particular constituents exceed the USEPA drinking water maximum contaminant level:

Biphenyl (Diphenyl)

Benzene

Toluene

Nitrogen

We note that the benzene level is particularly high. The analysis indicates that the level of benzene produced from the field is 13.20 mg/L, and the USEPA drinking water maximum contaminant level is 0.005 mg/L.

With respect to the analysis of constituents of Fairway Field, the field produces the following constituents that are greater than the USEPA drinking water maximum contaminant level. The following particular constituents exceed the USEPA drinking water maximum contaminant level:

Biphenyl (Diphenyl)

Benzene

Toluene

Nitrogen

Ethylbenzene

We note that the level of benzene is 15.30 mg/L. Again, this number is vastly greater than the USEPA drinking water maximum contaminant level, which is 0.005 mg/L.

With respect to the analysis of constituents of Lower Mobile Bay – Mary Ann Field, the field produces the following constituents that are greater than the USEPA drinking water maximum contaminant level. The following particular constituents exceed the USEPA drinking water maximum contaminant level:

Biphenyl (Diphenyl)

Benzene

Toluene

Nitrogen

Ethylbenzene

We note again that the level of benzene is 350.00 mg/L, which is greater than the USEPA drinking water maximum contaminant level, which is 0.005 mg/L.

With respect to the analysis of the constituents produced from North Central Gulf Field – Mobile Area, the following constituents are greater than the USEPA drinking water maximum contaminant level. The following particular constituents exceed the USEPA drinking water maximum contaminant level:

Biphenyl (Diphenyl)

Benzene

Toluene

Nitrogen

Ethylbenzene

We note again that the level of benzene is 153.00 mg/L, which is greater than the USEPA drinking water maximum contaminant level, which is 0.005 mg/L.

With respect to the analysis of the constituents produced from the Northwest Gulf Field – Mobile Area, the following constituents are greater than the USEPA drinking water maximum contaminant level. The following particular constituents exceed the USEPA drinking water maximum contaminant level:

Biphenyl (Diphenyl)

Benzene

Toluene

We note again that the level of benzene is 4.02 mg/L, which is greater than the USEPA drinking water maximum contaminant level, which is 0.005 mg/L.

FURTHER AFFIANT, sayeth not.

Butch Gregory

GORDON "BUTCH" GREGORY
AFFIANT

SWORN to and SUBSCRIBED before me this 29th day of January 2026.

Heather Fleming

NOTARY PUBLIC

My Commission Expires 02/02/2028

SEAL

EXHIBIT "A"

TO THE AFFIDAVIT OF BUTCH GREGORY

Incident Date	Date OGB-27 submitted	Type	Estimated Volume bbls	Off-shore or On-shore	Description	Reason	Coordinates
1/11/2022	8/10/2022	Produced liquids	not included	offshore	MB113 to shoreline	Corrosion	30.19756 88.07307
7/21/2022	8/10/2022	Produced liquids	not included	offshore	MB113 to shoreline	Anchor	30.19756 88.07307
10/18/2022	11/16/2022	Produced liquids	195.30	offshore	MB113 to shoreline	Corrosion	30.17920 88.07721
11/22/2022	1/3/2023	Produced liquids	375.20	offshore	MB113 to shoreline	Corrosion	30.17920 88.07721
8/26/2022	11/16/2022	Produced liquids	not included	onshore	Shoreline to Yellohammer (onshore)	Corrosion	30.39985 88.11885
2/4/2023	2/28/2023	Produced liquids	not included	onshore	Shoreline to Yellohammer (onshore)	Corrosion	30.39985 88.11885
7/11/2023	7/26/2023	Fuel gas	not included	offshore	OTF to 76AUX	Corrosion	30.36972 88.05130
4/17/2024	4/18/2024	Lube Oil	Less than half gallon	offshore	112B Platform		30.18903 88.12105
8/4/2024	10/24/2024	Condensate	Less than half gallon	offshore	114CC Platform		30.18889 88.02166
9/3/2024	10/2/2024	Produced gas	not included	offshore	77B to 76AUX	Corrosion	30.25361 88.05222
11/11/2024	11/27/2024	Produced liquids	849.40	offshore	112B to MB62 to Shoreline	Corrosion	30.18833 80.12166
6/12/2025	6/25/2025	Produced liquids	10.00	offshore	112B to MB62 to Shoreline	Corrosion	30.26093 88.07060
7/17/2025	8/6/2025	Produced liquids	192.90	offshore	112B to MB62 to Shoreline	Corrosion	30.25763 88.06953
9/12/2025	12/3/2025	Produced liquids	46.80	onshore	Shoreline to OTF (onshore)	Corrosion	30.42267 88.14920
11/12/2025	12/3/2025	Produced liquids	50.00	offshore	76AUX to shoreline to OTF	Corrosion	30.42280 88.14005

ALABAMA OIL & GAS BOARD

Exhibit No: 2A

Petitioner: Board

Item No: 2 Date: 2-19-26

Witness: Butch Gregory

Received by: EP

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

NOVEMBER 12, 2025

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 12/3/2025

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: MB 76 Aux Platform 6-inch Departing Pipeline 2. County: Mobile-OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27): 30.42280 Longitude (NAD27): 88.14005

3. Field (If wildcat, so state): Mary Ann Field

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 11/12/2025

Time: 9:17 AM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 11/12/2025 Time: 5:00 AM ☒ PM ☐

Did Incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: Estimated at approx 50 bbl

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: produced water leaked went into Mobile Bay

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: internal corrosion on the 6 o'clock position on the pipeline

Measures taken to control fire, spill, leak or blow out: pipeline pressure was reduced and clamp installed

Measures taken to clean up: No sheen occurred and material dissapated

Measures taken to prevent reoccurrence of this incident: Clamp was installed on the pipeline

Date that cleanup operations completed (if completed): _____

Remarks:

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Kendra Sullivan
Signature of Operator's Agent

12/3/2025
Date

offshore

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

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Measures taken to clean up: No sheen occurred and material dissapated

Measures taken to prevent reoccurrence of this incident: Clamp was installed on the pipeline

Date that cleanup operations completed (if completed): _____

Remarks:

RECEIVED
AOGB MOBILE
12/3/2025

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

12/3/2025
Date

Morning Update 11/14/2025:

DSV is at TALA dock. Spud barge is at TALA dock. All equipment and H2S SCBA's have been installed onto the spud barge and tested. Both vessels will leave at 2400hrs tonight and transit to leak location. Wait for daylight and put pressure on pipeline. Find leak and start hand jetting/excavating the area. DSV will be approx.. 500' from the location acting as the living quarters and mother vessel to the spud barge

Morning Update 11/15/2025:

Spud barge is at the dropped buoy location at the leak site. DSV approx. 400' away from spud barge. Identified leak area once pressure was brought up on pipeline. Repositioned spud barge over leak site. Started hand jetting (buried11'-12'). Diver indicated no sand only mud. It is going to take a while to jet out the pipeline, moving forward

Morning Update 11/16/2025:

Spud barge is at the dropped buoy location at the leak site. DSV approx. 400' away from spud barge. Diver found hole on pipeline at the 7 o'clock position (Size 1/8" x 1/4"). Pipeline has been prepped, and repair sleeve has been installed and studs & nuts capture . The divers were unable to torque to clamp due to pressure on the pipeline. Continue to bleed of pipeline. Try and torque the nuts at 0530hrs in the morning. Pressure test pipeline once bolts are torqued (500psi for 2hr hold).

Completed the installation of the repair sleeve and torqued. Started pressuring up the pipeline at 1100hrs. Got to 540psi at 1344hrs and started 2-hour hold. Two (2) hour test was successful (completed at 1605hrs). DSV retrieving anchors and transit to TALA dock. Spud barge retrieved spuds and transit to TALA dock. Demob spud barge and standby for morning. DSV standby for morning.

Morning Update 11/17/2025:

Spud barge and DSV standing by at TALA dock

Facility Incident Report

Date Call Received: 11/12/2025 09:04 (GMT-06:00) Central Time (US & Canada)		Call Received by: Robert Graham
☐ Drill ☑ Actual Incident ☐ Project	Incident Name : 112 Mobile-25	NRC Number

Responsible Party	Reporting Party	Suspected Responsible Party
	Name: Brad Herrington	Company: W&T Offshore
	Position: HSE Coordinator	Name: Brad Herrington
	Phone: 251-447-3601 Fax:	Phone: 251-447-3601 Fax:
	Company: W&T Offshore	Notified: ☐ Not Notified ☑ Notified
	Email: bherrington@wtoffshore.com	Email: bherrington@wtoffshore.com
	Address: Nine Greenway Plaza Suite 300	Address: Nine Greenway Plaza Suite 300
	City: Houston State: Texas	City: Houston State: Texas
	Zip: 77046 Country: United States of America	Zip: 77046 Country: United States of America

Time and Location	
	Incident Date: 11/12/2025 09:00 Time Zone: (GMT-06:00) Central Time (US & Canada)
	Incident Reported to QI/IC: 11/12/2025 09:04 Time Zone: (GMT-06:00) Central Time (US & Canada)
	Area Name: Mobile Block: 112 Area Abv#: MO
	Facility Type: Facility: OCS#: Pipeline Segment#: State Lease#:
	Latitude: 30 22.368' N Longitude: 88 05.403'W
	Nearest City: Dolphin Island Miles To City: 6.00 Miles To Shore:
	Incident Type: Pipeline Break
	Incident Description: Pressure drop in the produced water/liquids line. Sheen (product) is coming from a 6" pipeline. Surface observations characterize the product on the water as a milky emulisified color. Based on Spill Volume Estimate using the color dull it comes out to 27 gallons of product. All Federal and State Notifications conducted as required.

Materials Discharged							
	Amt Discharged: Quantity: 27 Gallons Material Discharged: Produced Water API Gravity:						
	Body Of Water Affected: Mobile Bay						
	Groundwater Affected: ☑ No ☐ Yes Water Intake Affected: ☑ No ☐ Yes						
	Spill Size: Length : 10 Miles Width : 20 Feet						
	Slick Size: Estimated percentage of area covered by slick:						
	Spill Source: ☐ Source Secured Date And Time Date: 11/12/2025 Time: 00:00 (GMT-06:00) Central Time (US & Canada)						
	☑ Source Continuous-Estimated Rate Rate: each						
	Color Of Slick:		Barely visible		Silvery		Slight color
	Appearance Percentage:		Brightly colored	100%	Dull		Dark

Facility Incident Report

Weather	Air Temp: F	Water Temp: 60 F
	Ceiling: Feet	Visibility: Meters
	Wind Dir: Heading	Wind Velocity: kph
	Seas: Feet	High Tide Time: 00:00
	Current Dir:	Current Speed: knots
Response Action	Actions Taken To Correct/ Mitigate Incident:	All lines are being shut in. Residual sheening is to be expected as the line becomes static.
Additional Information	Injuries: 0	Fatalities: 0
	Evacuated: ☑ No ☐ Yes	
	Damage: ☑ No ☐ Yes	

Do Not Delay Reporting Additional Information. Call NRC At (800) 424-8802 Or (202) 267-2675

Company Notifications

Reported By	Reported To(name)	Reported To(position)	Update 201-2	Time	Date
Robert Graham	Trent Sehlinger	ERC	☑	09:12	11/12/2025
Trent Sehlinger	Brad Herrington	HS&E	☑	09:25	11/12/2025
Trent Sehlinger	Patrick Hogelin	QI	☑	09:44	11/12/2025

Agency Notifications

Reported By	Reported to(name)	Agency/Notification	Assigned#	Time	Date
Robert Graham	Mr. Tom	USCG National Response Center	1447715	09:24	11/12/2025
Robert Graham	Ms. Andrews	AL State Warning Center		09:41	11/12/2025

W&T Offshore, Inc.
Mobile Bay 6" Produced Liquids
Pipeline Repair Procedure
Rev.0; 11/12/2025

A. General

Regulatory Contact / Phone	Kendra Sullivan; (713) 513-8629
Technical Contact / Phone	Ryan Duhon; (251) 973-4641
Segment number	NA
Work Location – platform or Latitude / Longitude	Approximate, based on surface visual LAT 30°25'22.08"N LONG 88° 8'24.18"W
Product Code	Produced Liquids
Approximate length	55,734 ft
Water depth at repair location	10 ft
MAOP	2,160 psig
Operating pressure range	200 - 400 psig
Failure Description	Pipeline leak
General repair description	1. Make appropriate regulatory notifications 2. Isolate the pressure sources at the Onshore Treating Facility (OTF), Shoreline valve station and MB 76AAux. 3. Temporarily pressurize the pipeline with processed sweet gas to create a visual indication of the leak location. 4. Jump divers and physically locate the leak source. 5. Jet out the pipeline and separate it from the other pipelines, if necessary. 6. Perform NDE around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 7. Install a 1,800 psi PLIDCO 6" x 18" LG. Split + Sleeve clamp onto the pipeline and prepare as-built drawing. 8. Using sweet gas, pressurize the pipeline to 1.25 x Normal Average Operating Pressure, or 500 psig. 9. Perform 2-hour pressure test with sweet gas. Record the pressure test on a certified Barton Chart Recorder. 10. Write the date, pipeline size, pipeline ID, start test time, end test time, start pressure, end pressure, and signature by W&T Rep. 11. Email a picture of the chart to eharbison@wtoffshore.com; breed@wtoffshore.com, agreig@wtoffshore.com and rduhon@wtoffshore.com.
Date leak detected	11/11/2025
Planned date for start of repairs	11/16/2025
Planned date to return to production	11/18/2025
Signature / Date of reviewing Facilities Engineer	RPDuhon
Signature / Date of Facilities Manager or alternate reviewer	

B. Materials Specifications

Pipe outer diameter:	6.625"
Wall thickness / grade of replacement pipe	0.280" API 5L X52 seamless
Minimum wall thickness required for MAOP	0.1911" with no corrosion allowance
Design factor (0.72 or 0.60)	0.72
Flange size / rating / face type:	6" ANSI 900 RTJ
Coating:	16-Mils Fusion Bond Epoxy

C. Shop Fabrication Procedures

Welding Code:	NA
NDE	NA
Pressure testing	NA

D. Mechanical Integrity Check Procedures

Wall thickness check	The pipe will be ultrasonically tested (UT) for wall thickness at a distance of two (2), five (5), and ten (10) feet on each side of the leak point at 3, 6, 9, and 12 o'clock positions.

E. Purging / Decommissioning Prior to Disassembly

Purging / pigging	The pipeline is currently depressurized.
Energy Isolation	Closed pipeline isolation valves on each end.
Handling method for vented gas and displaced liquid hydrocarbons	HP/LP Flare tip at MB 76AAux
Allocation plan for fluids downstream of sales meters removed from pipeline	N/A

F. Offshore Disassembly Procedure

Regulatory Notification	Courtesy notification to AOGB
Cutting method for removal of pipe material	NA
Pollution prevention measures (pollution dome, (absorbent pads, etc)	NA, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per diving contractor's standard procedures

G. Offshore Installation and Testing Procedures

Safe rigging practices	Per contractor's procedures.
Welding Code:	NA
Welding and burning safe practices	NA
NDE	NA, No welding

Weld area coating repair	NA
Flange make-up	NA
Riser protection from marine vessel impact (replacement risers)	NA
Pressure / leak testing	Once repair is completed, perform two (2) hour leak test with sweet fuel gas to 1.25 x Normal Operating Pressure or 500 psig. **The leak test will be performed in the Day Light Hours Only.**

H. BSEE Approval

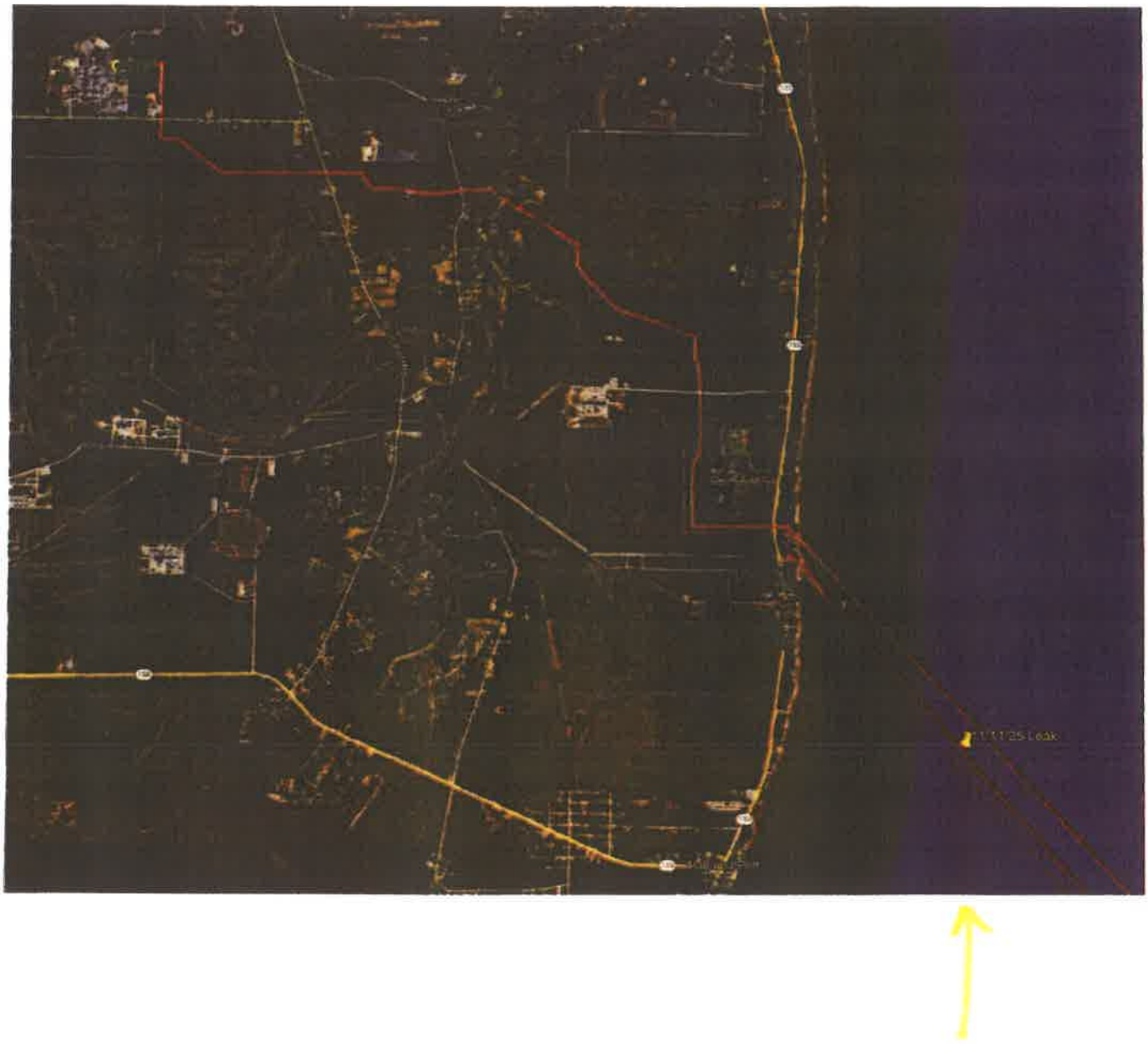
Variance Request or Alternate Compliance	NA

I. Return to Service

Handling method for hydrotest water during dewatering	NA
Hydrate prevention for dry gas pipelines	NA
Pipeline recover/reburial	Natural reburial

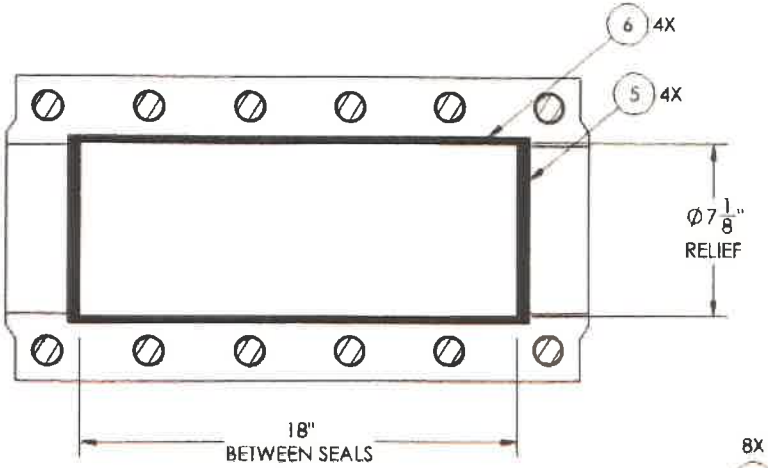
J. Attachments

Map

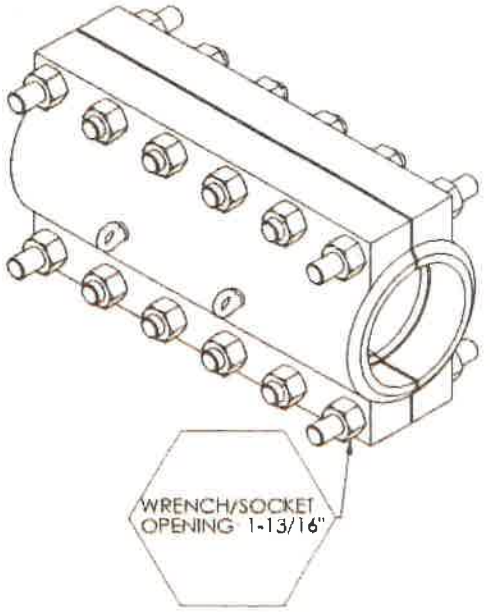


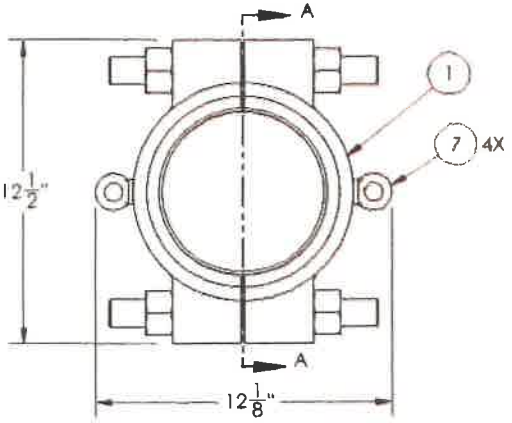
Clamp Details

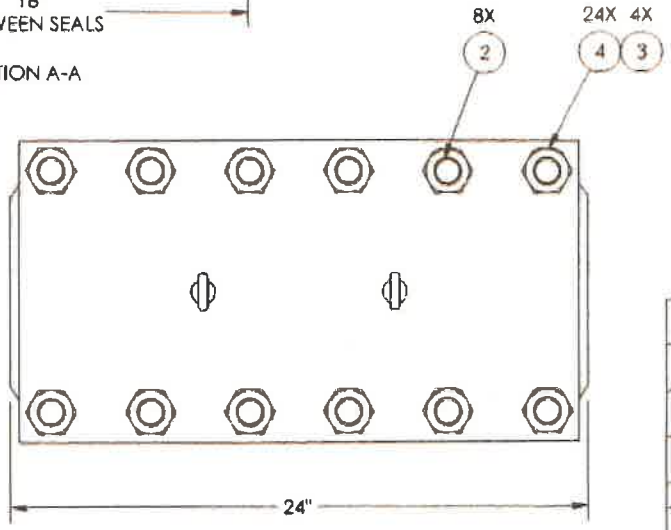
NOTES:
1.) HYDROSTATIC TEST PRESSURE:
1.5x MAOP
2.)RESIDUAL TORQUE VALUE WITH
LIGHT MACHINE OIL = 342 ft-lbs.



SECTION A-A







ITEM NO.	MATERIAL	DESCRIPTION	QTY.
1	SA-350-GR.LF2 CL.1	6" x 24" LG. SPLIT+SLEEVE, 1500 PSI MAOP	1
2	SA-193-GR.B7	1-1/8" - 8 x 9"LG. THREADED STUD	8
3	SA-193-GR.B7	1-1/8" - 8 x 11" LG. THREADED STUD	4
4	SA-194-GR.2H	1-1/8" - 8 HEAVY HEX NUT	24
5		1/2" x 5/8" CIRCUMFERENTIAL PACKING	4
6		1/4" x 3/8" LONGITUDINAL PACKING	4
7	AISI 1035	PAD EYE #2	4

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MATERIAL

WEIGHT 341 LBS

DESIGN CODE
ASME SECTION VIII, DIV. 2
API 6H

SCALE

DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

PLIDCO THE PIPE LINE DEVELOPMENT CO. STRONGSVILLE, OHIO

TITLE
6" x 24" LG.
PLIDCO SPLIT+SLEEVE

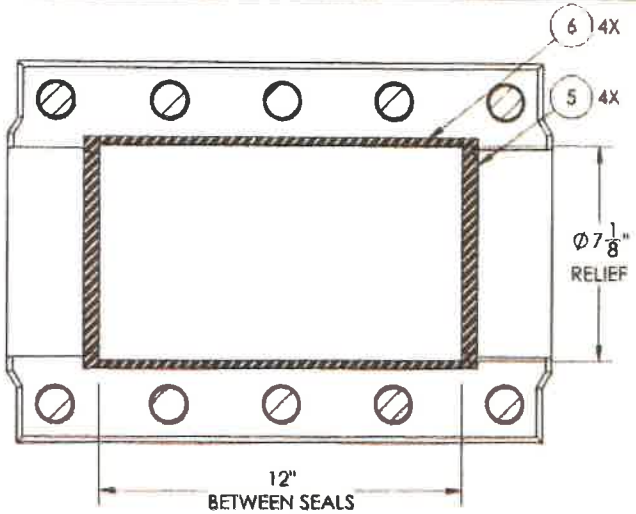
1500 PSI MAOP

DRAWN M. LEMONS DATE 7/17/2022

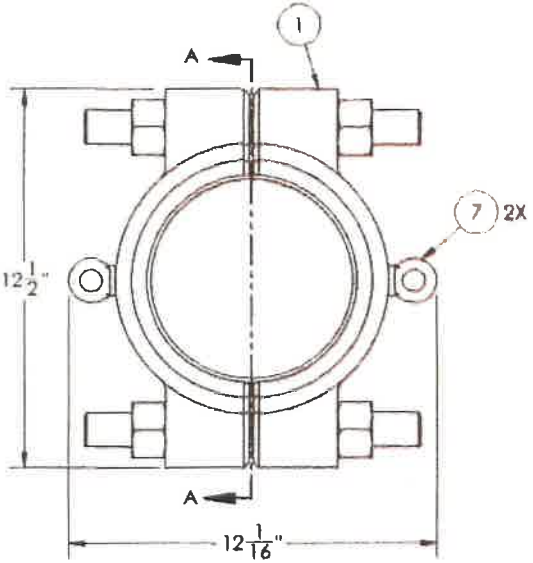
APPROVED Zachary Louden

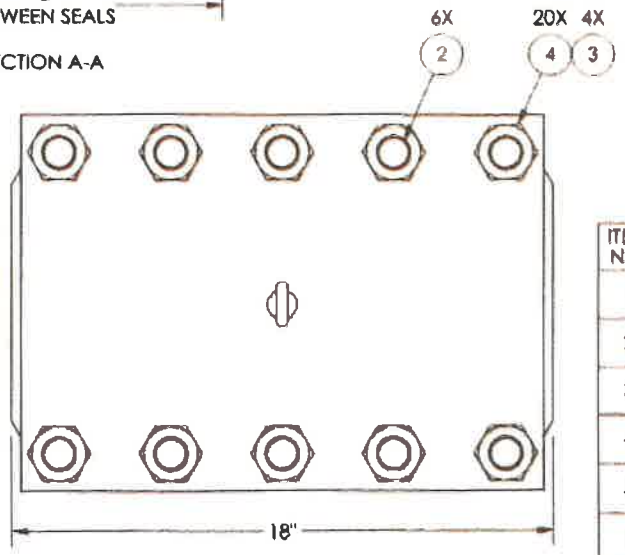
SIZE	DRAWING NUMBER	SHEET	LEVEL
B	SS - 10496 - CF	1 of 1	A

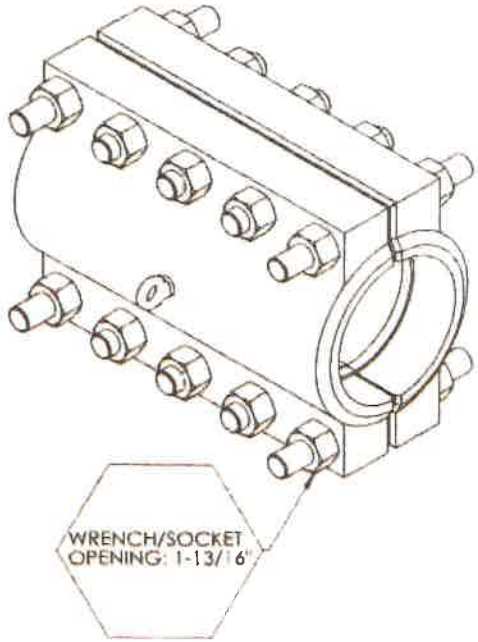
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6		1/4" x 3/8" LONGITUDINAL PACKING	4
7	AISI 1035	PAD EYE #2	2

MATERIAL
WEIGHT 249 LBS. TOTAL
DESIGN CODE ASME SECTION VIII, DIV. 2 API 6H
SCALE
DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

PLIDCO THE PIPE LINE DEVELOPMENT CO. WESTLAKE, OHIO

TITLE 6" x 18" LG. PLIDCO SPLIT+SLEEVE 1500 PSI MAOP

DRAWN A. REINHART DATE 02/23/21
APPROVED

SIZE	DRAWING NUMBER	SHEET	LEVEL
B	10494 - CF	1 of 1	A

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PLIDCO®
11792 Alameda Drive Strongsville, OH 44149 USA
THE PIPE LINE DEVELOPMENT COMPANY
440-871-5700 · plidco.com · pipeline@plidco.com

Declaration of Compliance

This certifies that the product(s) shipped meets the design, fabrication, and testing requirements of the PLIDCO quality management system. The product(s) meet the requirements of ASME PCC-2. Test certification prepared in accordance with ISO 10474:2013 type 3.1

Product Identification

Product Description	Serial Number	Shell Heat Number
Part Number: SS-6Nx18-1500-VB Split+Sleeve Pipe: 6" NPS MAOP: 1500 PSI Between Seals: 12" Seals: Viton B / FKM Temperature Range: -18°F To 250°F Design Code: ASME Section VIII, Div. 2; API 6H Features: Seal GirderRings Attachments: N/A	6814205	FD959

Approved by,
PLIDCO Quality Assurance

Michael Mindyas

PLIDCO®

THE PIPE LINE DEVELOPMENT COMPANY

Hydrostatic Test Report with Chart

Date Issued	March 7,2016
Revision Date	3/1/2022
Revision #	13
Effective Date	3/5/2022

Form Number: QMF-44

Serial #: 6814205 Job #: 68142 Product: Split+Sleeve

Fitting Diameter(s): 6 Units in Fitting Length: 18 Units in

Vent(s) Size: N/A Quantity: N/A "A" half N/A "B" half

Test Piece Type: 1- piece Test Piece(s) #: 661

Maximum Allowable Operating Pressure (MAOP): 1500 PSI

Power + Grip Test Type: N/A

Required Test Duration: 0:05:00 hr : min : sec

Calculated Min Test Pressure: 2250 PSI

Calculated Max Test Pressure: 2700 PSI

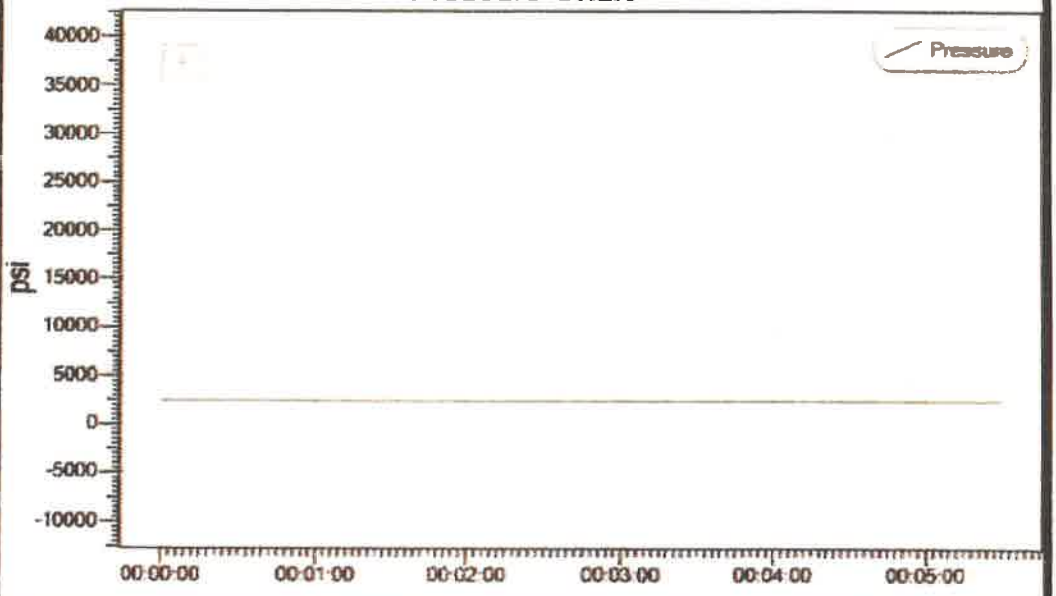
Actual Test Duration: 0:05:30 hr : min : sec

Gauge Information	
Model	Additel680
SN	21818190039
Range	(0-15000)PSI
Unit	psi

Record Information	
Start Time	01/17/2025 17:45:21
End Time	01/17/2025 17:50:51
Max Value	2368
Min Value	2366
Avg Value	2367
Pressure Differential	2
Test Number	1

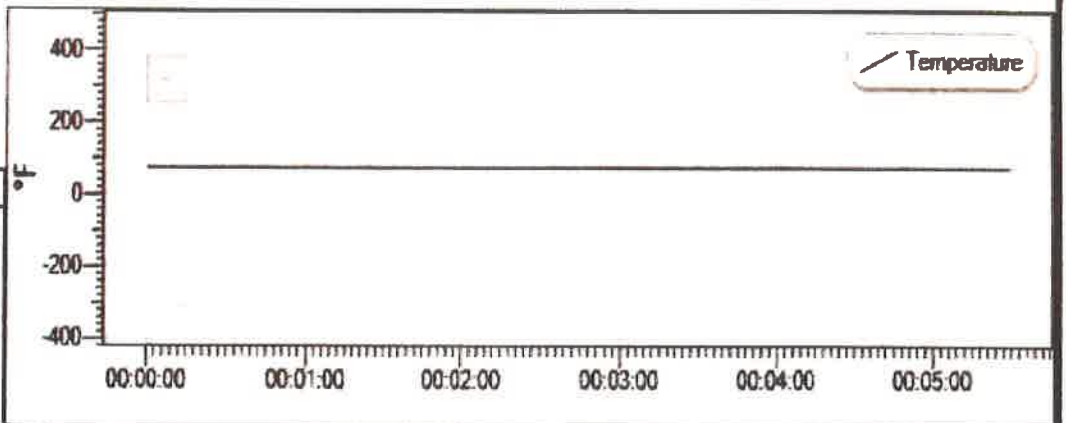
PASS

Pressure Chart



X No visible leakage or permanent material deformation.

Remarks:



Tester/Inspector Signature: oscar garcia Date: 02/18/2025

PLIDCO —QC— APPROVED

PLIDCO® THE PIPE LINE DEVELOPMENT COMPANY

Hydrostatic Test Report

Date Issued	March 7, 2016
Revision Date	August 31, 2017
Revision #	10
Effective Date	October 2, 2017

Serial Number: 6031701 Job Number: 60317

Product: PSS

Fitting Diameter(s): 6" Fitting Length: 24"

☐ Vent(s) Size: _____ Quantity: "A" half: _____ "B" half: _____

Maximum Allowable Operating Pressure (MAOP): 1500 psi

Calculated Test Pressure: 2250 psi

Actual Hydrostatic Test Pressure: 2323 psi

Required Test Duration: 5 minutes

Actual Test Duration: 5 minutes

Test Piece Type: ☑ 1-Piece ☐ 2-Piece Test Piece(s) #: none

Pressure Gauge Number	Calibrated Due Date
21818190074	07/31/2020

☑ **No visible leakage or permanent material deformation**

Remarks:

I certify the above information to be correct and complete.

Tester/Inspector Signature: nick moniot Date: 5/27/2020

Note: Unless otherwise specified, all dimensions are in inches

Nicholas Pell

PLIDCO —QC— APPROVED

PLIDCO® THE PIPE LINE DEVELOPMENT COMPANY

Hydrostatic Test Report

Date Issued	March 7, 2016
Revision Date	August 31, 2017
Revision #	10
Effective Date	October 2, 2017

Serial Number: 6031702 Job Number: 60317

Product: PSS

Fitting Diameter(s): 6" Fitting Length: 24"

☐ Vent(s) Size: _____ Quantity: "A" half: _____ "B" half: _____

Maximum Allowable Operating Pressure (MAOP): 1500 psi

Calculated Test Pressure: 2250 psi

Actual Hydrostatic Test Pressure: 2412 psi

Required Test Duration: 5 minutes

Actual Test Duration: 5 minutes

Test Piece Type: ☑ 1-Piece ☐ 2-Piece Test Piece(s) #: none

Pressure Gauge Number	Calibrated Due Date
21818190074	07/31/2020

☑ **No visible leakage or permanent material deformation**

Remarks:

I certify the above information to be correct and complete.

Tester/Inspector Signature: nick moniot Date: 5/27/2020

Note: Unless otherwise specified, all dimensions are in inches

Nicholas Pell

PLIDCO —QC— APPROVED

PLIDCO®

The Pipe Line Development Co.
870 Canterbury Rd
Westlake, Ohio 44145
Phone: 440-871-5700
Fax: 440-871-9577
Website: www.plidco.com

ISO 9001 Registered Company

MATERIAL TEST REPORT

ISO 10474:2013 3.1

Date:	1/8/2020	Purchase Order:	93640
Vendor:	Ellwood City Forge		
Description:	Plate	Size:	5" x 72" x 220"
Grade:	70	Surface Tolerance:	
Specification:	ASME SA350 LF2 CL 1	Heat Treatment:	Normalized
Heat Number:	CM868	Plate no:	01
Supplementary Info:		Country of Origin:	U.S.A

CHEMICAL COMPOSITION ANALYSIS all results in %

C	Mn	Si	P	S	Cr	Cu	Ni	Mo	Al	Nb	V	Ti
.12	1.15	.25	.01	.006	.16	.17	.37	.1	.024	.003	.027	.001
B	**N**	**Co**	**As**	**Sn**	**Sb**	**W**	**Ca**	**Zn**	**Zr**	**Pb**	**Hppm**	**CE***
.0005	.0127	.006	.004	.008	.001	.001	.0014	.001	.001	.0006	1.5	.41

* Carbon Equivalency CE=C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)15

TENSILE TEST RESULTS

Specification:	ASTM A370	Results	
Test Diameter:	.505"	Yield Strength .2% offset:	46,403
Orientation:	L	Ultimate Tensile strength:	72,583
		Reduction in area:	69.4%
		Elongation:	34%

IMPACT TEST RESULTS

Specification:	ASTM A370	Results ft-lbs		
Temperature °F:	-50	94	96	134
Orientation:	L	Average:	108	
Test sample size:	10mm x 10mm	Minimum:	94	

HARDNESS TEST RESULTS

Specification:	ASTM A956	Results Hbw		
		129	130	129

SUPPLEMENTARY NON-DESTRUCTIVE TEST RESULTS

Ultrasonic Test Acceptable

We certify the above materials have been inspected and tested in accordance with the methods prescribed in the governing specifications and consistent with PLIDCO quality control standards.

Signature: _____

Title: QA Inspector

PLIDCO —QC— APPROVED

PLIDCO®
THE PIPE LINE DEVELOPMENT COMPANY
870 Canterbury Road · Westlake · Ohio · 44145-1419 · 440-871-5700 · plidco.com · pipeline@plidco.com

Certificate of Compliance

This certifies that the product(s) shipped meets the design, fabrication, and testing requirements of the PLIDCO quality management system. Test certification prepared in accordance with ISO 10474:2013 type 3.1

Customer Name:	Petroquip
Customer Order Number:	2020-50201
PLIDCO Order Number:	D 60165
Line Item #:	19

Product Identification

Product Description	Serial Number	Shell Heat Number
Part Number: SS-6Nx24-1500-B		
Split+Sleeve Pipe: 6" NPS MAOP: 1500 PSI Between Seals: 18" Seals: Buna-N Temperature Range: -20°F To 225°F Design Code: ASME Section VIII, Div. 2; API 6H Features: Seal Girderring Attachment(s): N/A	6031701	CM868
	6031702	CM868

Approved by,
PLIDCO Quality Assurance

PLIDCO
—QC—
APPROVED

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	Revised *8/16/24; 6/12/2024	P.O. No.:	229797
Customer:	Ellwood Specialty Metals Co 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA2051
		Piece No.:	02
Grade:	SA350 LF2 CL 1"	Drawing No.:	5" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK NT 5X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA105 ASME BPV 2023 EDITION		
ASME SA350 LF2 CLASS 1 ASME BPV 2023 EDITION		
ASME SA36 MODIFIED TO TEST ONLY LONGITUDINALLY ASME BPV 2023 EDITION		
ASME SA516 GRADE 65/70 MODIFIED TO TEST ONLY LONGITUDINALLY ASME BPV 2023 EDITION		
ASTM A105 REV 23		
ASTM A36 MODIFIED TO TEST ONLY LONGITUDINALLY REV 19		
ASTM A516 GRADE 65/70 MODIFIED TO TEST ONLY LONGITUDINALLY REV 17		
ISO 10474 (Type 3.1)	Second Edition	7/1/2013

PRODUCT INFORMATION

Job #	Piece #	Heat/Ingot #	Ingot Size	Ingot Weight (LBS)	Product Size	Weight (LBS)
UA2051	02	FD959-1	63	71,040	5.13" X 80.13" X 155.25"	18963.00

LADLE CHEMICAL ANALYSIS EQS

Chemistry Analysis performed per ASTM E415 by Ellwood Quality Steel, an ISO 9001-2015 company (not Nadcap accredited), 700 Moravia Street, New Castle, PA 16101

	Composition (wt%)												
Heat No.	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	As
FD959	.18	.89	.009	.007	.19	.39	.18	.11	.018	.16	.028	.001	.012
	Sn	Co	W	Pb	B	Sb	Nb	Ca	Zn	Zr	N	Hppm	
	.008	.010	.001	.0011	.0003	.001	.001	.0012	.001	.001	.0118	2.0	

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE. THE DATA HEREIN REPRESENTS ONLY THE ITEM(S) TESTED. THE SIMPLE ACCEPTANCE AND REJECTION DECISION RULE IS EMPLOYED FOR ALL LABORATORY TEST RESULTS. THIS ECFG TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF ECFG.

PLIDCO —QC—

Colton Carney
Quality Engineer

Country of Origin: U.S.A.

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MATERIAL CERTIFICATION REPORT

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		Piece No.:	02
Grade:	SA350 LF2 CL 1"	Drawing No.:	5" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK NT 5X80		

HEAT TREATMENT

Piece No.	Load No.	Cycle	Temperature (°F)	Time (hrs)
02	9439	AUST. TO NORM. & TEMPER	1650	4
02	9440	T-1 TEMPER AFTER NORMALIZE	1100	7

ROOM TEMPERATURE TENSILE

Test Diameter: 0.505 Specification: ASTM A370

Piece No.	Location	Orientation	Tensile Strength (psi)	0.2% Offset Yield Strength (psi)	0.02% Offset Yield Strength (psi)	0.01% Offset Yield Strength (psi)	4D Elongation (%)	Reduction of Area (%)
02	TOP	LONGIT TENSILE	72,618	44,226			34	67

SURFACE HARDNESS

Piece No.	Scale	Specification	Results (HBW)
02		956	131, 125, 127

CHARPY V-NOTCH IMPACT TOUGHNESS

Test Size: 10mm X 10mm Specification: ASTM A370 Striker: 8mm

Piece No.	Location	Orientation	Test Temperature (°F)	Absorbed Energy (ft-lbs)	Shear (%)	Lateral Expansion (mils)	Avg. Absorbed Energy (ft-lbs)
02	TOP	LONGITUDINAL IMPACT	-50	15, 33, 33			

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PUDCO
—QC—
APPROVED

Colton Carney
Quality Engineer

Country of Origin: U.S.A.

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MATERIAL CERTIFICATION REPORT

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Customer:	Ellwood Specialty Metals Co 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA2051
		Piece No.:	02
Grade:	SA350 LF2 CL 1"	Drawing No.:	5" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK NT 5X80		

ULTRASONIC INSPECTION RESULTS

Piece No.	Test Date	Inspector and Title	Specification	Standard	Acceptance Criteria	Procedure	Quantity Accepted
02	6/11/2024	FRANK RITORTO - NAS 410 / SNT-TC-1A Level II	ASTM A388 & ASTM A57 4/0	ASTM A388 & ASTM A57	1/4" FBH >50% LOB	ECFG-DI-NDT-UT-002 &	1

General Comments:

Ellwood City Forge Group is an AS9100:2016 & ISO 9001:2015 certified company registered by ABS Quality Evaluations, Inc. (Certificate #59175).

The Ellwood City Forge Group Materials Testing Lab is ISO 17025:2017 accredited in Mechanical Testing by A2LA (Certificate #3143.01).

The Ellwood City Forge Group Materials Testing Lab is Nadcap accredited for the following test methods: Room Temperature Tensile (test code A), Charpy Impact (test code N), Metallography (test codes L0, L11, L12, XL), Brinell Hardness (test code M1), Test Specimen Preparation (test code Z), and Lab Specimen Heat Treat (test code XG).

During the manufacturing process, examinations, and testing, the material has not come into contact with Mercury, any compound containing Mercury, or with Mercury-containing devices that do not employ secondary containment.

No welding was performed on this material.

Hot forging practice: Open die

PER EN10204 TYPE 3.1
"MELTED AND MANUFACTURED IN USA"
"FORGED TO ACHIEVE A MINIMUM FORGE REDUCTION OF 3:1"
"MATERIAL SURFACES MILLED TO 500 RMS FINISH"
"TOLERANCE TO BE 1/2 FLATNESS TOLERANCE PER ASTM A20/ASME SA20"
"VACCUM DEGASSED, FULLY KILLED FINE GRAIN PRACTICE - CALCIUM TREATED"

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PLIDCO
—QC—
APPROVED

Colton Carney
Quality Engineer

Country of Origin: U.S.A.

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City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

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CERTIFICATION OF COMPLIANCE

Date:	6/12/2024	P.O. No.:	229797
Customer:	Ellwood Specialty Metals Co 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA2051
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ASTM A105 REV 23		
ASTM A36 MODIFIED TO TEST ONLY LONGITUDINALLY REV 19		
ASTM A516 GRADE 65/70 MODIFIED TO TEST ONLY LONGITUDINALLY REV 17		
ISO 10474 (Type 3.1)	Second Edition	7/1/2013

Parts supplied on Ellwood Specialty Metals Co Purchase Order number 229797
UA2051 02

This is to certify that the parts supplied have been manufactured, processed, inspected, and tested in accordance with all requirements of the purchase order and any required specifications. Inspection and test results signify that the parts delivered are in conformance to all purchase order requirements.

Colton Carney

Colton Carney
Quality Engineer

Country of Origin: U.S.A.

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PLIDCO
—QC—
APPROVED

MOBILE INSTRUMENT

745 Lakeside Drive, Mobile, AL 36693
(800) 239-4466 (251) 660-7474
Fax: (251) 660-8813
www.mobileinstrumentco.com
ISO 17025 Accredited

Calibration Certificate

Certificate #: 28725410152025

Customer:

MOBILE INSTRUMENT RENTAL
745 LAKESIDE DRIVE
MOBILE,AL 36693

ID:	287254	**Calibration Date:**	October 15, 2025
Manufacturer:	CHARTS LTD.	**Due Date:**	October 15, 2026
Model Number:	0/1000 PSI	**Service Order:**	RENTAL
Description:	CHART RECORDER, PRESSURE	**Purchase Order:**	
Serial Number:	287254	**Temperature:**	70 ± 5°F
Procedure Used:	MI-PRG	**Humidity:**	50 ± 20% RH
Technician:	Nick Kitzrow	**Received Condition:**	**In Tolerance**
Location:		**Returned Condition:**	**In Tolerance**

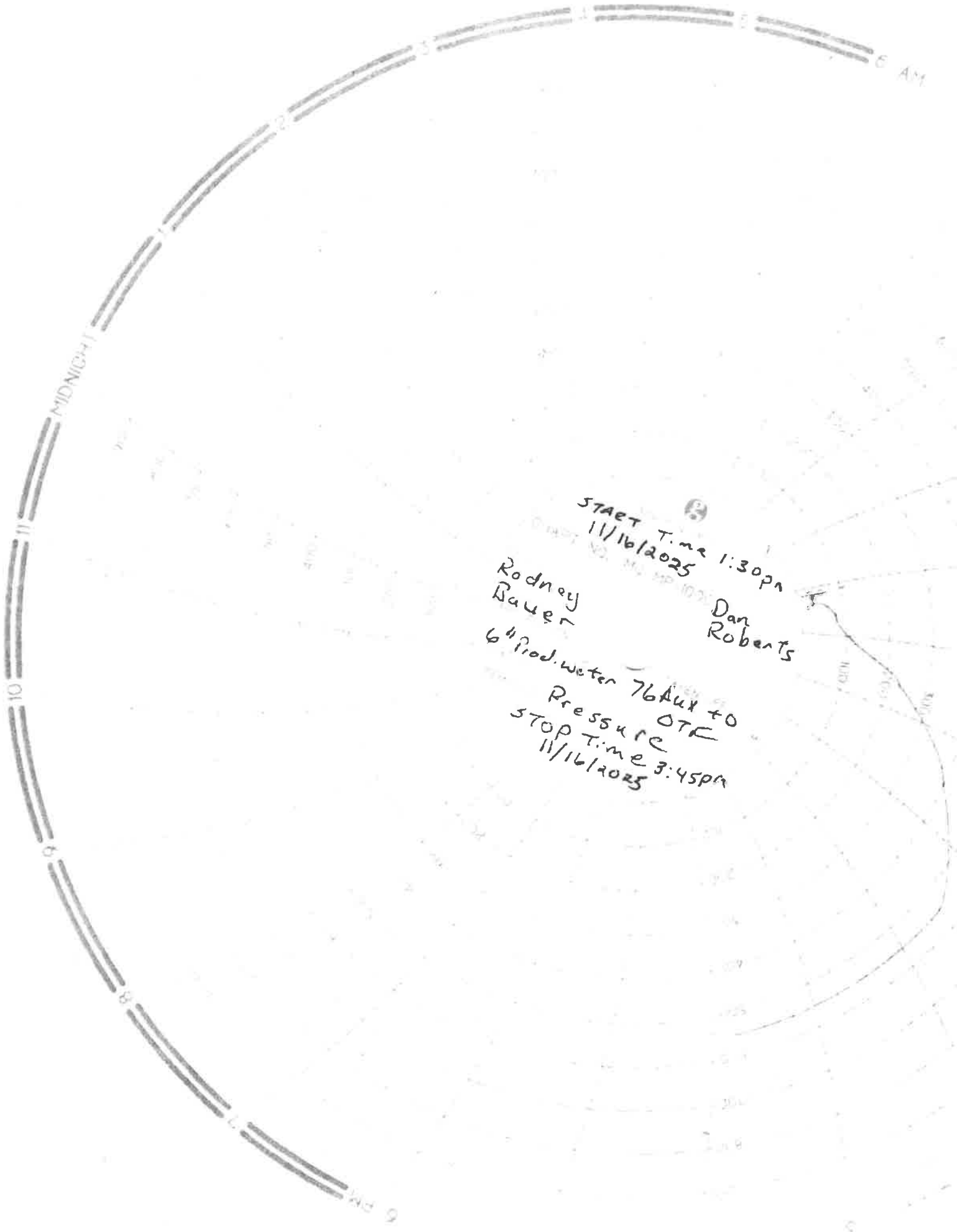
Mobile Instrument certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and complies with MIL-STD-45662A and ANSI/NCSL Z540.1-1999 (R2002). The calibration has been completed in accordance with the Mobile Instrument quality system which is accredited to ISO 17025:2017.

No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed. Any Test Uncertainty Rati (TUR) that is less than four to one will appear under the "TUR" heading on the data record. If the TUR meets or exceeds four to one, the field is left blank. This report may not be reproduced, except in full, unless permission for the publication of an approved abstract is obtained in writing from the organization issuing this report.

Comments:

Standards Used

ID	Description	Cal Date	Due Date
MIC-A207	AMETEK / CRYSTAL XP2I PRESSURE GAUGE, DIGITAL TEST (0/2000 PSI)	4/25/2025	10/25/2026


MIDNIGHT
6 AM
6 PM
START Time 1:30pm
11/16/2025
Rodney
Bauer
Dan
Roberts
6" Prod. water 76 Aux to
OTR
Pressure
STOP Time 3:45pm
11/16/2025

Row Labels	Sum of HoursDown	Sum of Deferred 8/8"s Gas	Sum of NetGasMCFD
11/12/2025	**517**	**111,224**	**85,668**
MB 0113 0001 JA	23	5,372	4,029
MB 0113 0002 JC	23	3,341	2,506
MB 0113 0005 JF	23	4,875	3,656
MB 0132 0001 JB	23	6,036	4,527
MB MO 0823 A001	24	4,073	3,394
MB MO 0823 A002 ST01	24	3,220	2,683
MB MO 0827 CB001	23	2,168	1,656
MB MO 0869 0003	24	3,749	3,124
MB SL 0347 TR 0076 0003	24	7,482	6,085
MB SL 0348 TR 0077 0002	24	6,894	5,607
MB SL 0348 TR 0077 0005	24	6,734	5,477
MB SL 0350 TR 0095 0003	24	2,301	1,872
MB SL 0534 TR 0062 0001	24	2,343	1,755
MB SL 0535 TR 0063 0001	24	3,744	2,804
MB SL 0535 TR 0063 0002	23	5,455	4,086
MB SL 0536 TR 0111 0002	24	3,956	2,850
MB SL 0537 TR 0112 0001	24	4,479	3,227
MB SL 0538 TR 0115 0002	24	6,116	4,672
MB SL 0613 TR 0064 0002	20	6,262	4,690
MB SL 0624 TR 0114 0002	24	4,795	3,596
MB SL 0624 TR 0114 0003	24	5,673	4,255
MB SL 0624 TR 0114 0004	23	12,156	9,117
11/13/2025	**432**	**93,712**	**72,534**
MB MO 0823 A001	24	4,073	3,394
MB MO 0823 A002 ST01	24	3,220	2,683
MB MO 0827 CB001	24	2,262	1,728
MB MO 0869 0003	24	3,749	3,124
MB SL 0347 TR 0076 0003	24	7,482	6,085
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MB SL 0535 TR 0063 0001	24	3,744	2,804
MB SL 0535 TR 0063 0002	24	5,692	4,263
MB SL 0536 TR 0111 0002	24	3,956	2,850
MB SL 0537 TR 0112 0001	24	4,479	3,227
MB SL 0538 TR 0115 0002	24	6,116	4,672
MB SL 0613 TR 0064 0002	24	7,514	5,628
MB SL 0624 TR 0114 0002	24	4,795	3,596
MB SL 0624 TR 0114 0003	24	5,673	4,255
MB SL 0624 TR 0114 0004	24	12,685	9,514
11/14/2025	**528**	**114,189**	**87,893**
MB 0113 0001 JA	24	5,606	4,205

MB 0113 0002 JC	24	3,486	2,615
MB 0113 0005 JF	24	5,087	3,815
MB 0132 0001 JB	24	6,298	4,724
MB MO 0823 A001	24	4,073	3,394
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MB SL 0613 TR 0064 0002	24	7,514	5,628
MB SL 0624 TR 0114 0002	24	4,795	3,596
MB SL 0624 TR 0114 0003	24	5,673	4,255
MB SL 0624 TR 0114 0004	24	12,685	9,514
11/16/2025	**247**	**52,084**	**40,131**
MB 0113 0001 JA	10	2,336	1,752
MB 0113 0002 JC	10	1,453	1,089

MB 0113 0005 JF	10	2,120	1,590
MB 0132 0001 JB	10	2,624	1,968
MB MO 0823 A001	11	1,782	1,485
MB MO 0823 A002 ST01	11	1,442	1,202
MB MO 0827 CB001	12	1,107	846
MB MO 0869 0003	10	1,562	1,302
MB SL 0347 TR 0076 0003	11	3,273	2,662
MB SL 0348 TR 0077 0002	11	3,160	2,570
MB SL 0348 TR 0077 0005	13	3,647	2,967
MB SL 0350 TR 0095 0003	17	1,630	1,326
MB SL 0534 TR 0062 0001	15	1,440	1,079
MB SL 0535 TR 0063 0001	11	1,755	1,315
MB SL 0535 TR 0063 0002	12	2,846	2,132
MB SL 0536 TR 0111 0002	12	1,978	1,425
MB SL 0537 TR 0112 0001	11	2,006	1,445
MB SL 0538 TR 0115 0002	11	2,676	2,044
MB SL 0613 TR 0064 0002	12	3,600	2,697
MB SL 0624 TR 0114 0002	10	1,998	1,498
MB SL 0624 TR 0114 0003	10	2,364	1,773
MB SL 0624 TR 0114 0004	10	5,285	3,964
Grand Total	**2,252**	**485,398**	**374,119**

Marvin Rogers

From: Marvin Rogers
Sent: Saturday, November 15, 2025 10:12 AM
To: Leigh Blake
Subject: Re: WT leak 11/11/25 Produced Liquids from Mary Ann 76AUX to shoreline

Leight
Try to get as many pictures as possible-- Barge, bubbles etc.
Thanks.
Marvin

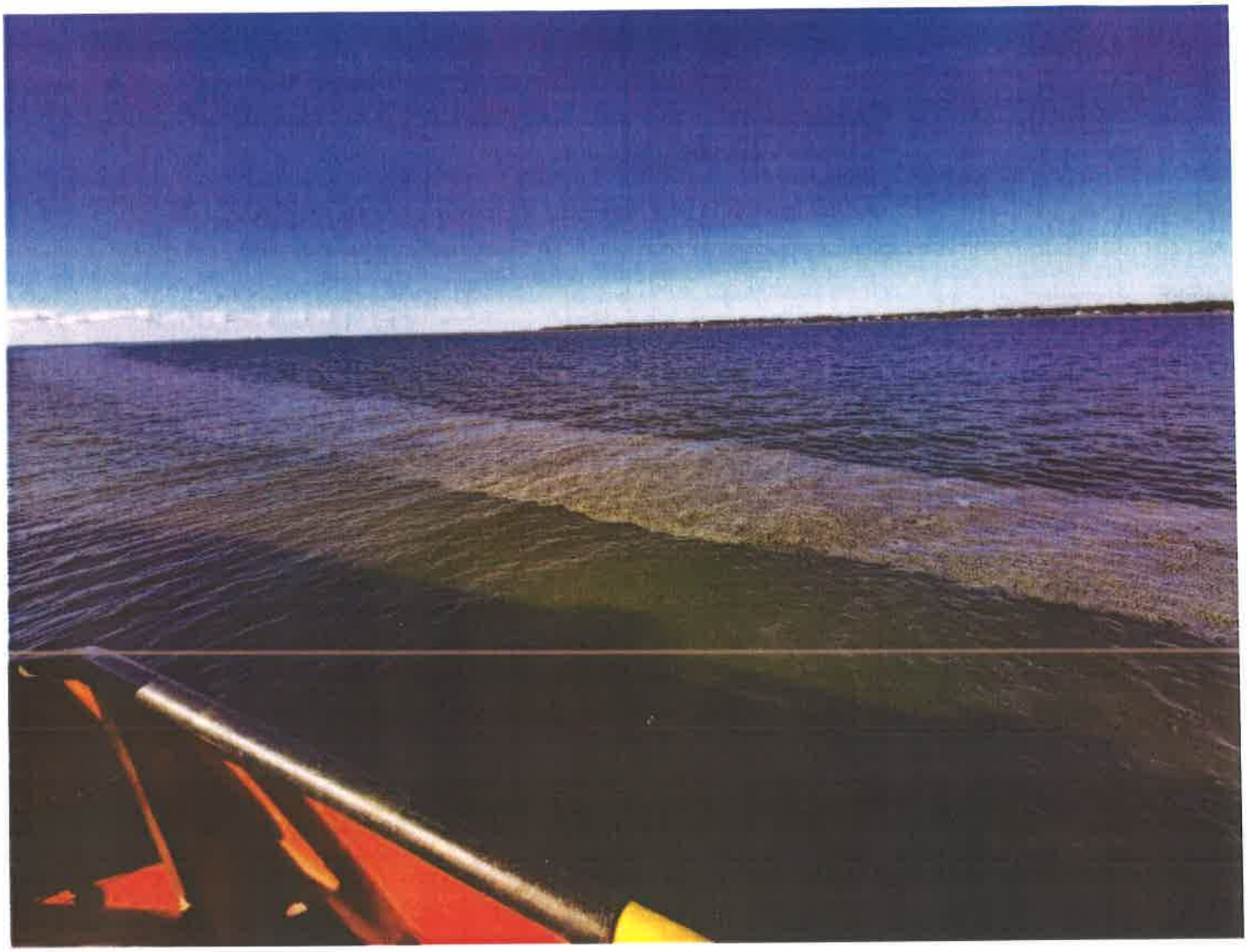
Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

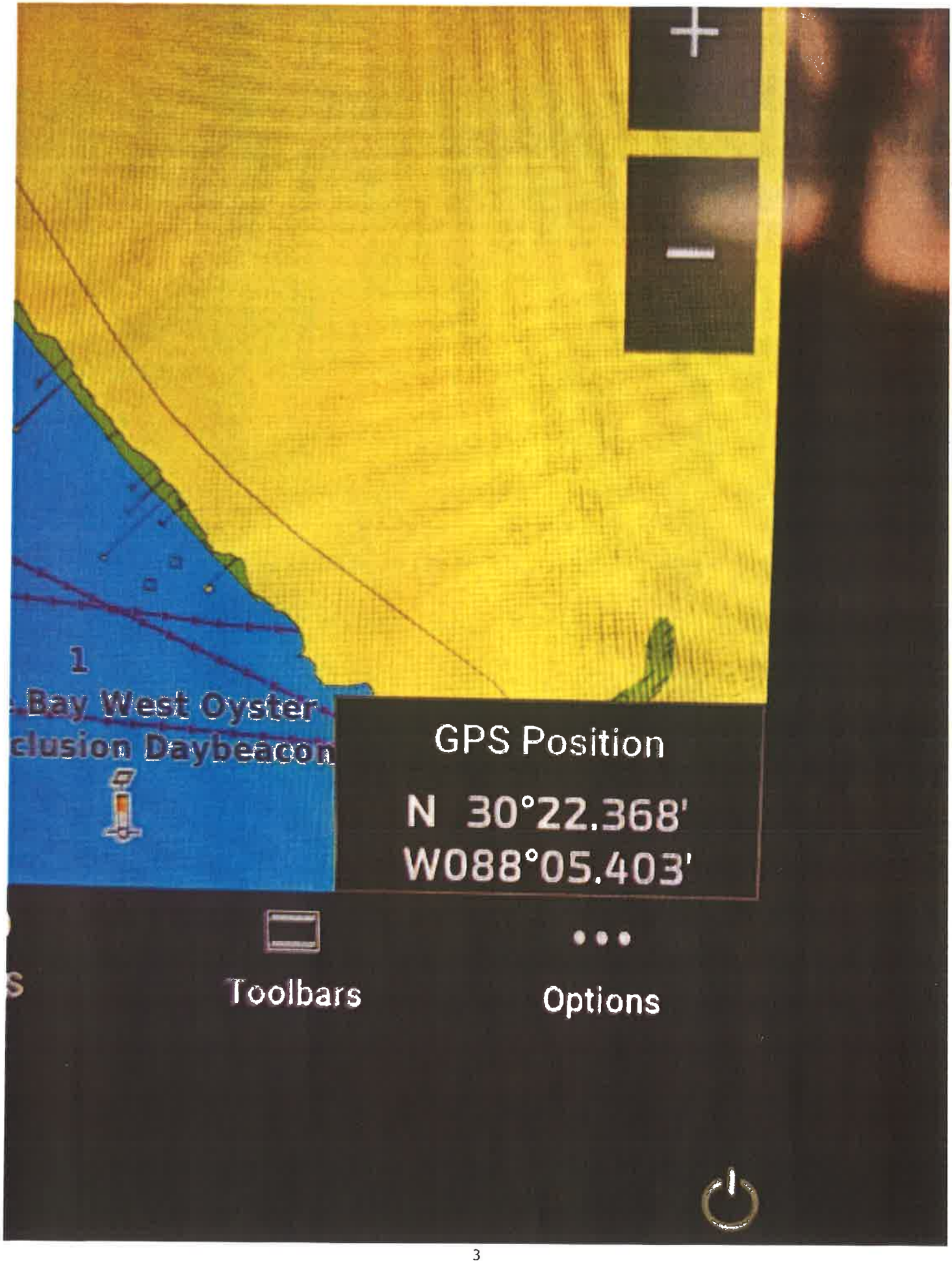
From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Saturday, November 15, 2025 9:37:31 AM
To: Nick Tew <ntew@gsa.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; Kirk McQuillan <kmcquillan@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Joshua Young <JYoung@ogb.state.al.us>
Subject: RE: WT leak 11/11/25 Produced Liquids from Mary Ann 76AUX to shoreline

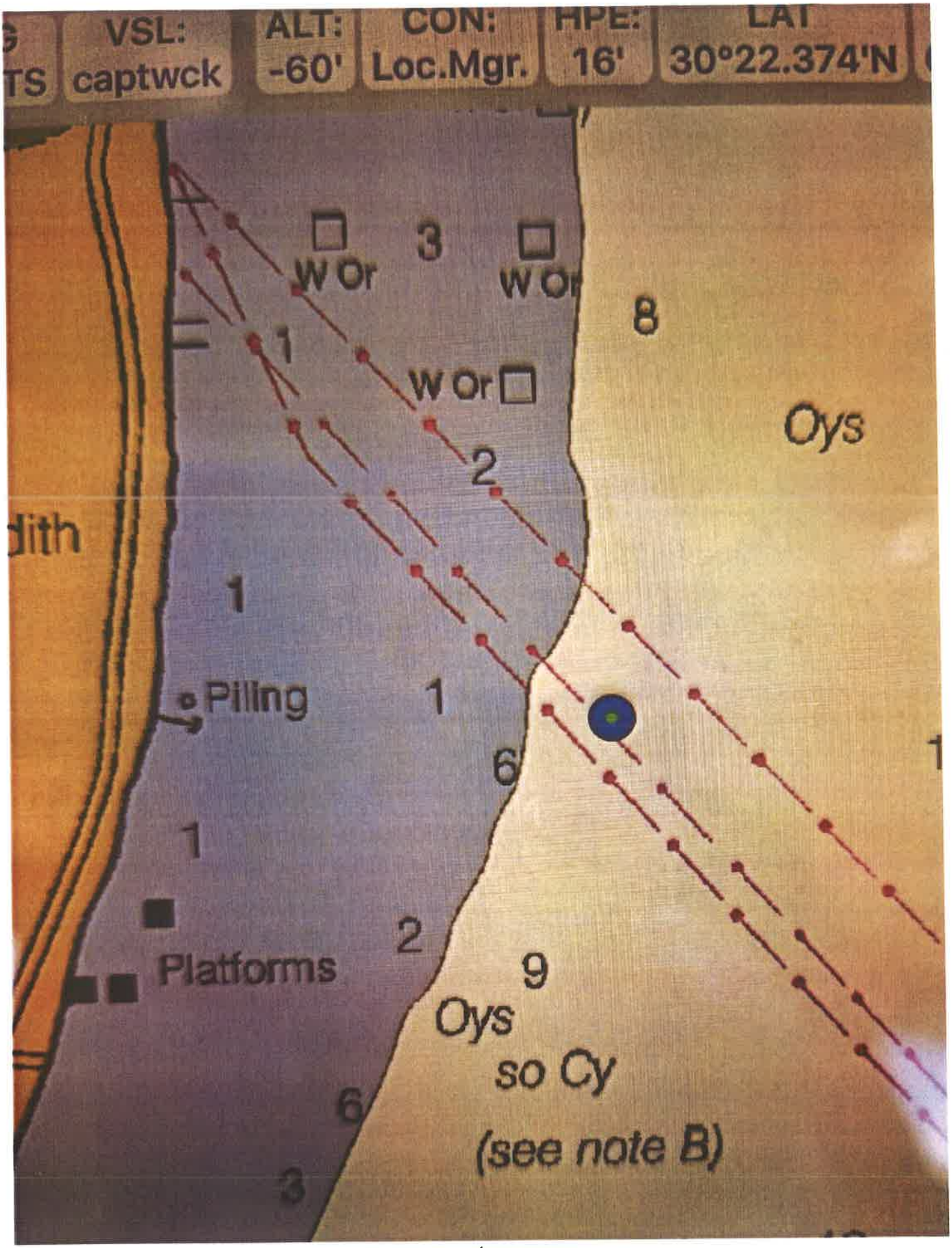
National Response Center (NRC) #1447715 report was filed due to foam bubbles resulting from fuel gas pushed through line to locate leak. The barge arrived on location and has located the leak to prepare for the clamp to be installed. We are waiting on procedures and more information.

From: Leigh Blake
Sent: Wednesday, November 12, 2025 10:26 AM
To: Nick Tew <ntew@gsa.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; Kirk McQuillan <kmcquillan@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Joshua Young <JYoung@ogb.state.al.us>
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Importance: High

Kendra reported another offshore produced liquids pipeline leak this morning. More information is coming, but this will shut the entire offshore production down. I will keep you all posted as more information is available. I'm researching this line's history.




1
Bay West Oyster
clusion Daybeacon
GPS Position
N 30°22.368'
W088°05.403'
Toolbars
Options


VSL:
captwck
ALT:
-60'
CON:
Loc.Mgr.
HPE:
16'
LAT
30°22.374'N
3
8
1
2
Oys
1
Piling
1
6
1
2
Platforms
9
Oys
so Cy
6
(see note B)
3

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Sent from my Verizon, Samsung Galaxy smartphone
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Marvin Rogers

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Sent: Saturday, November 15, 2025 9:38 AM
To: Nick Tew; Marvin Rogers; Kirk McQuillan; Butch Gregory
Cc: Clayton Campbell; Joshua Young
Subject: RE: WT leak 11/11/25 Produced Liquids from Mary Ann 76AUX to shoreline

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To: Nick Tew <ntew@gsa.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; Kirk McQuillan <kmcquillan@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>
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Importance: High

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Marvin Rogers

From: Johnston, Emma (Tuberville) <Emma_Johnston@tuberville.senate.gov>
Sent: Wednesday, January 7, 2026 4:27 PM
To: Marvin Rogers
Cc: Nelms, Angelina (Tuberville); Nick Tew
Subject: Re: Tuberville staff following up

Marvin,

Apologies for the delay here. After asking around, EPA is not the correct agency here, it's actually the Coast Guard.

Coast Guard finally got back to me and said the below. Let me know if you need more info here.

Best,
Emma
--

The best point of contact Sector Mobile based at Brookley Field in Mobile, AL. Their Response department would likely have current information. The command center numbers for Alabama OGB and/or state staff to reach out are listed below.

- (833) 662-8724 ext. 7071
- (251) 441-6213 or 6211

The command center can provide the contact info / email address to the office (person) managing this oil spill case. They can also provide information if this was referred to NRC for action.
--

Our team reached out to CGD-Heartland and gathered more information about the pollution incident referenced in your initial email. The contact numbers remain the same if you have additional questions for Sector Mobile staff.

The case appears to be referring to National Response Center (NRC) # 1447715, which was received on 12NOV25. The report was of a 10-mile long dull discoloration within the Mobile Bay originating from "produced water"(defined below). The release was thought to be from a 6-inch underwater pipeline and cause was unknown. All lines were shut-in, and residual sheening was expected as the line became static.

The FOSCR confirmed that the product reported did not pose a significant threat to the environment. The reporting party was also the responsible party, *W & T Offshore*. The pollution source was confirmed secured with *W & T Offshore* and discoloration dissipated over 48 hours with no reports of further incident.
Definition: "Produced water" is a petroleum-associated wastewater generated during oil and gas extraction. It is not regulated under CERCLA/NCP (40 CFR 300) when it consists solely of petroleum-derived constituents. USCG response authority generally applies only when produced water contains oil and causes a discharge or substantial threat of discharge to navigable waters (which this did not). Produced water is the largest by-volume byproduct of oil and gas production. It consists of formation water brought to the surface during drilling and pumping, typically containing salts, hydrocarbons, metals, and treatment chemicals. It is routinely managed as an operational waste stream, not a spill.

- CERCLA / NCP (40 CFR 300):
  Produced water is generally excluded from CERCLA response authority under the petroleum exclusion. The NCP applies only if the produced water has been altered or commingled with non-petroleum hazardous substances.

- Clean Water Act (40 CFR Parts 122 & 435):
  The primary federal authority when produced water is discharged to waters of the U.S. Discharges require an NPDES permit and are typically prohibited onshore, with limited exceptions; offshore discharges are allowed under strict effluent limits.
- RCRA (40 CFR 261.4(b)(5)):
  Produced water is exempt from hazardous waste regulation as an oil and gas exploration and production waste, provided it is not mixed with non-exempt wastes.

Emma Johnston
Senior Policy Advisor
U.S. Senator Tommy Tuberville (AL)

From: Marvin Rogers <mrogers@ogb.state.al.us>
Date: Thursday, November 20, 2025 at 5:17 PM
To: Emma Johnston <Emma_Johnston@tuberville.senate.gov>
Cc: "Nelms, Angelina (Tuberville)" <Angelina_Nelms@tuberville.senate.gov>, Nick Tew <ntew@gsa.state.al.us>
Subject: Re: Tuberville staff following up

Thank you.
Marvin

Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

From: Johnston, Emma (Tuberville) <Emma_Johnston@tuberville.senate.gov>
Sent: Thursday, November 20, 2025 3:39:35 PM
To: Marvin Rogers <mrogers@ogb.state.al.us>
Cc: Nelms, Angelina (Tuberville) <Angelina_Nelms@tuberville.senate.gov>; Nick Tew <ntew@gsa.state.al.us>
Subject: Re: Tuberville staff following up

Marvin,

I'll reach out to EPA and figure out the appropriate contact then report back.

Emma

> On Nov 20, 2025, at 4:29 PM, Marvin Rogers <mrogers@ogb.state.al.us> wrote:
>
> Ms. Johnston,
> Thank you for the email.
> Recently it came to the attention of our agency, the Alabama Oil and Gas Board, that on or about November 11, 2025, someone reported to the National Response Center a leak or spill in Mobile Bay. Apparently someone saw foam bubbles indicating the leak or spill. This leak or spill may be associated with oil and gas operations in Mobile Bay, which are under the jurisdiction of our agency, the Alabama Oil and Gas Board. I understand that the National Response Center is under the authority of the US EPA. I would like to get more information about the report to the National Response Center. Perhaps you could guide me to someone in US EPA, who could provide us with more

information. That was the purpose of the call you Senator Tuberville's office.
> Thank you for your assistance.
>
> Marvin Rogers
> General Counsel
> Assistant Attorney General
> Alabama Oil and Gas Board
> 205-247-3680 office
> 205-394-3185 cell
>
>
> -----Original Message-----
> From: Johnston, Emma (Tuberville) <Emma_Johnston@tuberville.senate.gov>
> Sent: Thursday, November 20, 2025 2:48 PM
> To: Nick Tew <ntew@gsa.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>
> Cc: Nelms, Angelina (Tuberville) <Angelina_Nelms@tuberville.senate.gov>
> Subject: Tuberville staff following up
>
> Hi Nick and Marvin,
>
> Our front office staff told us they received a call from OGB seeking EPA contacts. Can you please provide me with some more information? Depending on what you're seeking I can reach out directly or determine who the appropriate contact would be.
>
> Thanks,
> Emma
>
> Emma Johnston
> Senior Policy Advisor
> Senator Tommy Tuberville

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

SEPTEMBER 12, 2025

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 12/3/2025

Address: 5718 Westheimer Road City: Houston State: TX Zip: 77057

1. Facility name: OTF Facility 2. County: Mobile

3. Facility Location* (surface): (give footage from nearest section or offshore tract lines) 791 FWL; Section-Township-Range or Tract: T 7S R 2W

Latitude (NAD27): 30.42267 Longitude (NAD27): 88.14920

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 9/12/2025

Time: 9:47 AM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 9/12/2025 Time: 9:00 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced water

Estimated volume of spill or leak: 46 bbls

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☐ No ☒

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Internal corrosion on the 6 o'clock position on the pipeline

Measures taken to control fire, spill, leak or blow out: Booms were deployed

Measures taken to clean up: Topsoil was removed and monitoring "wells" have been placed

Measures taken to prevent reoccurrence of this incident: Clamp was installed on the pipeline

Date that cleanup operations completed (if completed): Surface cleanup completed 10/3/2025

Remarks: Pipeline contained produced water from the MB 76 facility. A secondary leak was associated with this line that contained water only that was used to hydrotest the line. That second leak on 9/23/2025 contained no hydrocarbon material. The estimated amount for second site was 10 bbls. Complete site remediation is still ongoing and is being coordinated with ADEM. Monitoring pods/wells have been placed around the site.

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

12/3/2025
Date

On Shore

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 12/3/2025

Address: 5718 Westheimer Road City: Houston State: TX Zip: 77057

1. Facility name: OTF Facility 2. County: Mobile

3. Facility Location* (surface): (give footage from nearest section or offshore tract lines) 791 FWL; Section-Township-Range or Tract: T 7S R 2W

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Material spilled: Produced water

Estimated volume of spill or leak: 46 bbls

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☐ No ☒

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Internal corrosion on the 6 o'clock position on the pipeline

Measures taken to control fire, spill, leak or blow out: Booms were deployed

Measures taken to clean up: Topsoil was removed and monitoring "wells" have been placed

Measures taken to prevent reoccurrence of this incident: Clamp was installed on the pipeline

Date that cleanup operations completed (if completed): Surface cleanup completed 10/3/2025

Remarks: Pipeline contained produced water from the MB 76 facility. A secondary leak was associated with this line that contained water only that was used to hydrotest the line. That second leak on 9/23/2025 contained no hydrocarbon material. The estimated amount for second site was 10 bbls. Complete site remediation is still ongoing and is being coordinated with ADEM. Monitoring pods/wells have been placed around the site.

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

12/3/2025
Date

RECEIVED
AOGB MOBILE
12/3/2025

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS
TX Reg. # F-000059

Pipeline Leak Estimate
PSN 251 Line
September 2025

Document Number:	20250524-04-STUDY-P-002
Client Name:	W&T Offshore
Project Title:	MB 112-B
Job Number:	20250524-04

A	11/24/2025	Issued for Review	SWC	CS		
REV	DATE	DESCRIPTION	ORIG	APPROVALS		
APPROVED BY: DATE:		COMPANY APPROVAL: DATE:				

PROCESS CALCULATIONS			
Client	W&T Offshore	Project No.	20250524-04
Project	MB 112-B	Rev.	A
Calculation Title	Pipeline Leak Estimate PSN 251 Line September 2025	By	SWC
Calculation No.	20250524-04-STUDY-P-002	Checked	CS
		Date	11/24/2025

TABLE OF CONTENTS

1. PURPOSE
2. REFERENCES
3. NOTES
4. SUMMARY CALCULATIONS
5. CONCLUSIONS
6. DETAILED CALCULATIONS

1. PURPOSE

This calculation estimates the leak rate for the hole in the 4" PSN 251 liquid pipeline that occurred September 11, 2025.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B.R., Young, D.F, and Okiishi, T. H. 1998, 3ed.

3. NOTES

W&T advised the following

The leak occurred at about 8:00 am on September 11, 2025.
The pipeline pump was stopped about 8:30 am on September 11, 2025.
The leak occurred at a depth of 7 feet below grade
The soil at the leak point is sand
The estimated hole size is 1/2"

The accuracy of the estimated volume is ± 20%.

4. SUMMARY CALCULATIONS

The pressure trend provided by W&T was used to determine the pressure in the pipeline for the duration of the leak.

The pipeline pressure at the start of the leak is used as a conservative estimate of the pressure for the entire duration of the leak. PT-4008 is used for the pressure as it is the closest pressure transmitter to the leak location.

Pipeline Pressure = 212 psig = 1,460,680 Pa

This is a liquid line so, the leak will stop when the pump is turned off. The pump was stopped at approximately 8:30 am on September 11.

Duration = 0.5 hrs

The pressure is used with the following formula to estimate the leaked amount.

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m^3/s
C = coefficient of discharge, 0.62
A = Area of the hole, m^2
ΔP = pressure differential, Pa
ρ = liquid density, kg/m^3

C = 0.62
D = 0.5 in = 0.0127 m
A = 0.000127 m^2
ρ = 1,030 kg / m^3 (for produced water)

P w/ 7' of sand = 4.9 psig = 33,485 Pa (sand density of 100 lb / ft^3)

ΔP = 1,427,195 Pa

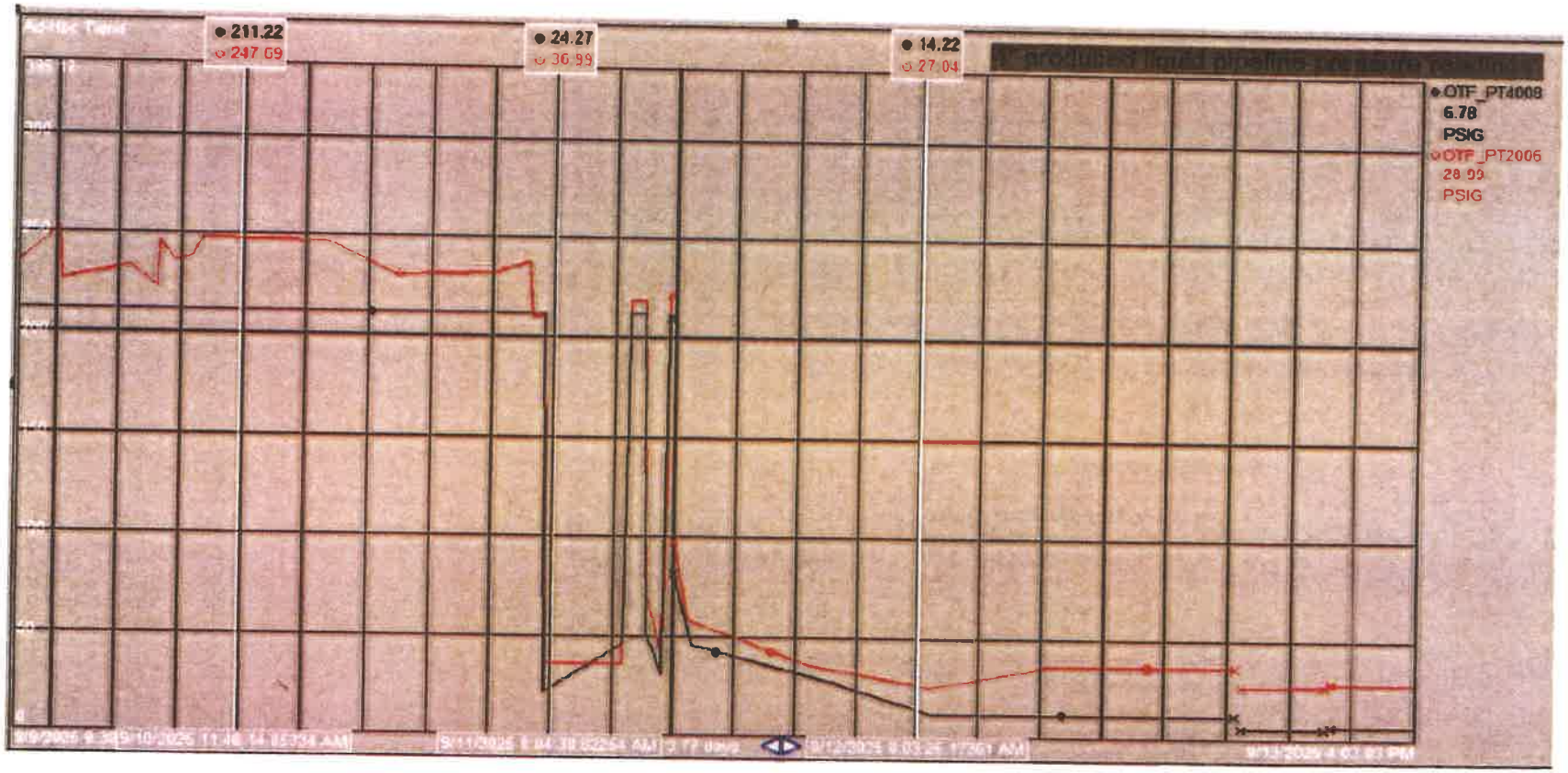
Q = 0.00413 m^3/s = 14.88 m^3/h = 93.6 bbl / h Total volume = 46.8 bbls

5. CONCLUSIONS

The estimated amount leaked is 47 bbls.

Client	W&T Offshore	Project No.	20250524-04
Project	MB 112-B	Rev	A
Calculation Title	Pipeline Leak Estimate PSN 251 Line September 2025	By	SWC
Calculation No.	20250524-04-STUDY-P-002	Checked	CS
		Date	11/24/2025

The pressure graph provided by W&T is included below



OLIVIER INTERNATIONAL

Ultrasonic Inspection Report

Corporate Headquarters:	Website: www oi expert
227 Clendenning Rd., Ste 100	Phone: (985) 790-7901
Houma, LA 70363	Fax: (985) 868-8917
Report# 05909192501	Page 1 of 1

Customer:	Project:	Date of Inspection:
W&T OFFSHORE	4" Produced liquis pipeline	09/19/25
Billing Info:	**Project Location:**	**OI Procedure No.:**
on file	6000 Deakle road Therodore ,AL	OI-UT-TM-O1 REV.2
AFE/PO No.:	**OI Project No.:**	**Code/Standard/Spec. No.:**
X25501	4014	ASTM E797

Instrument/Calibration:

Instrument Mfr. OLYMPUS | Model 38DLP | Serial No. 203662708

Cable Type/Length 6' | Range Various | Cal. Date 08-20-25

Calibration Standard 5 Step Wedge | Serial No 15-1011 | Couplant Ultragel

Search Units:

Mfr. OLYMPUS	Mfr /	Mfr /	Mfr /
Size .5	Size /	Size /	Size /
Frequency 5 MHZ	Frequency /	Frequency /	Frequency /
Beam Angle 0	Beam Angle /	Beam Angle /	Beam Angle /
Reference Gain BACKWALL	Reference Gain /	Reference Gain /	Reference Gain /
Surface Transfer VARIOUS	Surface Transfer /	Surface Transfer	Surface Transfer /

Scope of Inspection: UTT INSPECTION OF PIPELINE

Weld No.	Part Size/Desc.	Accept (✓)	Reject (×)	Remarks

Technician: VICTOR GONZALES Assistant: Assistant:

Technician's Signature: Victor Gonzales Customer's Signature:

Hours Worked: 12 Travel Time: 6 Mileage: 408 Per Diem: ☑

Consumables:

Remarks: MOBE>ONSITE, WAITING TO PERFORM INSPECTION>DEMOBE NO INSPECTIONS PERFORMED

OLIVIER INTERNATIONAL

Ultrasonic Inspection Report

Corporate Headquarters:
227 Clendenning Rd , Ste 100
Houma, LA 70363
Website: www oi expert
Phone: (985) 790-7901
Fax: (985) 868-8917

Report# 05909212501

Customer:	Project:	Date of Inspection:
W&T OFFSHORE	4" Produced liquis pipeline	09/21/25
Billing Info:	**Project Location:**	**OI Procedure No.:**
on file	6000 Deakle road Therodore ,AL	OI-UT-TM-O1 REV.2
AFE/PO No.:	**OI Project No.:**	**Code/Standard/Spec. No.:**
X25501	4014	ASTM E797

Instrument/Calibration:

Instrument Mfr. OLYMPUS | Model 38DLP | Serial No 203662708

Cable Type/Length 6' | Range Various | Cal. Date 08-20-25

Calibration Standard 5 Step Wedge .100"/.500" | Serial No 15-1011 | Couplant Ultragel

Search Units:

Mfr OLYMPUS D7906-SM	Mfr /	Mfr /	Mfr /
Size 0.434"	Size /	Size /	Size /
Frequency 5 MHZ	Frequency /	Frequency /	Frequency /
Beam Angle 0	Beam Angle /	Beam Angle /	Beam Angle /
Reference Gain BACKWALL	Reference Gain /	Reference Gain /	Reference Gain /
Surface Transfer VARIOUS	Surface Transfer /	Surface Transfer	Surface Transfer /

Scope of Inspection: UTT INSPECTION OF PIPELINE

Weld No.	Part Size/Desc.	Accept (✓)	Reject (×)	Remarks
	4" X 237"			UTT Thickness performed
				LOWEST READING: 217"
				EASTSIDE WESTSIDE
				A1 0.244" C1 0.247"
				A2 0.236" C2 0.240"
				A3 0.234" C3 0.237"
				A4 0.235" C4 0.239"
				A5 0.244" C5 0.237"
				A6 0.237" C6 0.217"
				A7 0.223" C7 0.217"
				A8 0.230" C8 0.225"
				MID PIPE
				B1 0.248"
				B2 0.239"
				B3 0.237"
				B4 0.234"
				B5 0.241"
				B6 0.231"
				B7 0.220"
				B8 0.228"
				MID PIPE^
				ALL READING WERE TAKEN CLOCKWISE

Technician: VICTOR GONZALES Assistant: Assistant:

Technician's Signature: Customer's Signature:

Hours Worked: 12 Travel Time: 6 Mileage: 408 Per Diem: ☐

Consumables:

Remarks: MOBE>ONSITE, WAIT TO PERFORM INSPECTION/PERFORM INSPECTION>DEMOBE

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Friday, September 12, 2025 10:09 AM
To: Kimbril, Jonathan; Emmons, Shawn; Leigh Blake
Cc: Bradley Herrington; John C. Poole; Valerie Land
Subject: 4-inch Produced Water Line Leak Notification
Attachments: 4-Inch PW Pipeline Leak Map.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning,

W&T Offshore, Inc. is providing notification that there has been a 4-inch produced water line leak between Bellingrath Road and Rebel Road. Specifically, the line leak location has been found at 30.25'22" N and 88.08'54" "W between those roads. The leak is currently contained within the pipeline right-of-way and booms have been deployed to contain the leak. The amount of H2S being read by meters at the site is 2ppm of H2S which is below the 10 ppm of H2S that poses a safety risk to health of surrounding areas.

W&T Offshore, Inc. will have personnel out on location 24 hrs to monitor the situation and conduct pipeline repair activities.

As we find out more information and progress with repair, I will provide updates to this email chain.

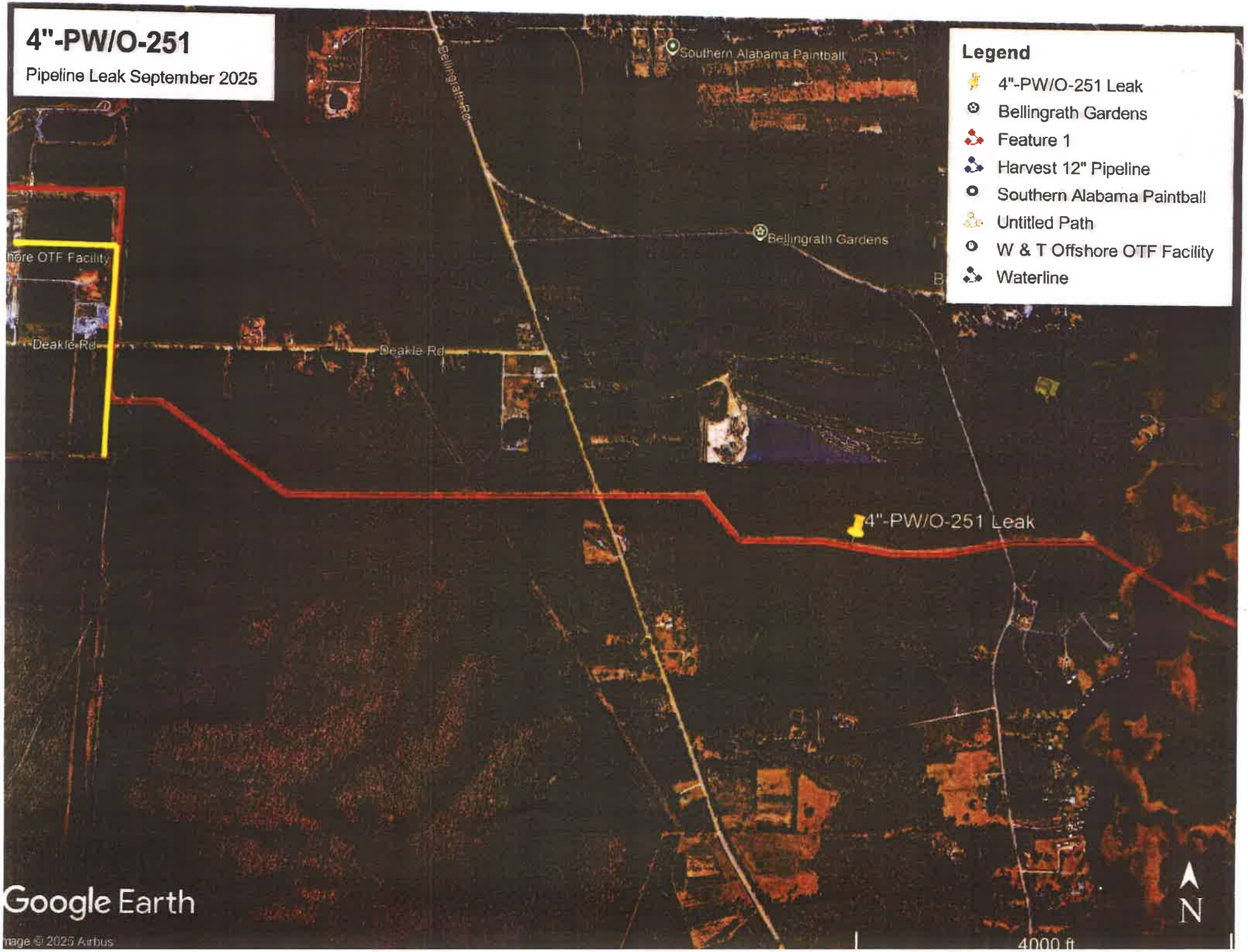
Should you have any questions please let me know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

W&T OFFSHORE

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4"-PW/O-251
Pipeline Leak September 2025
Legend
4"-PW/O-251 Leak
Bellingrath Gardens
Feature 1
Harvest 12" Pipeline
Southern Alabama Paintball
Untitled Path
W & T Offshore OTF Facility
Waterline
Southern Alabama Paintball
Bellingrath Gardens
Deakle Rd
Deakle Rd
4"-PW/O-251 Leak
Google Earth
4000 ft
N

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Wednesday, September 17, 2025 9:20 AM
To: Leigh Blake
Subject: Pipeline Status Update

Good Morning Leigh,

Currently, W&T Offshore, Inc. has clean up crews on location setting up timber matting to reach the leak location and are getting hydrovacs set up to start uncovering the pipeline. These operations will take 2-3 days to uncover the pipeline before traditional excavation techniques are used to uncover the pipeline. Once the pipeline is uncovered we will be able to assess the damage and begin repair operations.

We will keep you informed as to our progress and as we get closer to repairing the pipeline will ask for approval to move forward.

Should you have any questions or require additional information please let me know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Friday, September 19, 2025 9:24 AM
To: Leigh Blake
Cc: Jonathan Kimbril; Shawn Emmons; Bradley Herrington; John C. Poole; Valerie Land; Clayton Campbell; Joshua Young; Marvin Rogers; Butch Gregory; Kirk McQuillan; Benjamin Reed; Eric Harbison
Subject: RE: 4-inch Produced Water Line Leak Notification

Follow Up Flag: Follow up
Flag Status: Completed

Good Morning,

W&T Offshore, Inc. has uncovered and touched with hand prob one of the 6-inch pipelines in the bundle. The 4-inch produced liquid line is in between the two 6-inch pipelines of which one is a fuel gas pipeline. W&T Offshore, Inc. has received a verbal from AOGB to begin excavation work to uncover the pipelines using backhoe equipment.

W&T Offshore, Inc. will be implementing the 18-inch tolerance zone on either side of the pipelines in adherence to the Alabama 811 regulations and then digging down to a one foot tolerance zone above the pipeline. Once this one foot tolerance zone has been met, W&T will switch back to hydro vac equipment to finish exposing the pipeline.

Should you have any questions please let me know.

Sincerely,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Saturday, September 13, 2025 9:15 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Cc: Jonathan Kimbril <Jonathan.Kimbril@psc.alabama.gov>; Shawn Emmons <Shawn.emmons@psc.alabama.gov>; Bradley Herrington <bherrington@wtoffshore.com>; John C. Poole <jpoole@wtoffshore.com>; Valerie Land <vland@wtoffshore.com>; Clayton Campbell <CCampbell@ogb.state.al.us>; Joshua Young <JYoung@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Kirk McQuillan <kmcquillan@ogb.state.al.us>; Benjamin Reed <breed@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>
Subject: Re: 4-inch Produced Water Line Leak Notification

Please submit additional information as it becomes available. All repairs and future use must be approved by AOGB before this line can be repaired and utilized. Any documentation by ADEM is requested as well.

On Sep 12, 2025, at 10:09 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:

Good Morning,

W&T Offshore, Inc. is providing notification that there has been a 4-inch produced water line leak between Bellingrath Road and Rebel Road. Specifically, the line leak location has been found at 30.25'22" N and 88.08'54" "W between those roads. The leak is currently contained within the pipeline right-of-way and booms have been deployed to contain the leak. The amount of H2S being read by meters at the site is 2ppm of H2S which is below the 10 ppm of H2S that poses a safety risk to health of surrounding areas.

W&T Offshore, Inc. will have personnel out on location 24 hrs to monitor the situation and conduct pipeline repair activities.

As we find out more information and progress with repair, I will provide updates to this email chain.

Should you have any questions please let me know.

Regards,
Kendra Sullivan

Sr. Staff Regulatory Analyst
(713) 513-8629<tel:+1-713-513-8629> (Direct)

346-316-5615<tel:346-316-5615> (Cell)
<mailto:ksullivan@wtoffshore.com>
|
www.wtoffshore.com<http://www.wtoffshore.com/>
5718 Westheimer Rd, Suite 700
Houston
,
TX
77057-5784
[image001.png@01D023CB.5B10E1B0]<https://protect-us.mimecast.com/s/Tz1CCvR7pUngmnUPNUDv>
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W&T OFFSHORE

<4-Inch PW Pipeline Leak Map.pdf>

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Tuesday, September 23, 2025 4:19 PM
To: Leigh Blake
Cc: Jonathan Kimbril; Shawn Emmons; Bradley Herrington; John C. Poole; Valerie Land; Clayton Campbell; Joshua Young; Marvin Rogers; Butch Gregory; Kirk McQuillan; Benjamin Reed; Eric Harbison
Subject: RE: 4-inch Produced Water Line Leak Notification

Follow Up Flag: Follow up
Flag Status: Completed

Good Afternoon,

W&T Offshore, Inc. is providing this update regarding the 4-inch produced liquid line. During hydrotesting activities, the pipeline pressure dropped from 520 psi to 100 psi. OTF Personnel began investigating the drop in pressure. This afternoon a secondary leak was discovered near the OTF Facility on W&T's right-of-way. The site is approximately 150 yards south of Deakle Road.

W&T will be sending equipment to begin uncovering the pipeline and repair activities. An emergency 811 ticket has been placed under 252662810 to begin utility marking.

Should you have any questions please let me know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Friday, September 19, 2025 11:28 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Cc: Jonathan Kimbril <jonathan.kimbril@psc.alabama.gov>; Shawn Emmons <Shawn.emmons@psc.alabama.gov>; Bradley Herrington <bherrington@wtoffshore.com>; John C. Poole <jpoole@wtoffshore.com>; Valerie Land <vland@wtoffshore.com>; Clayton Campbell <CCampbell@ogb.state.al.us>; Joshua Young <JYoung@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Kirk McQuillan <kmcquillan@ogb.state.al.us>; Benjamin Reed <breed@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>
Subject: Re: 4-inch Produced Water Line Leak Notification

Thank you

On Sep 19, 2025, at 9:24 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:

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5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

W&T OFFSHORE

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From: Leigh Blake <[redacted]>
Sent: Saturday, September 13, 2025 9:15 AM
To: Kendra Sullivan <[redacted]>
Cc: Jonathan Kimbril <[redacted]>; Shawn Emmons <[redacted]>; Bradley Herrington <[redacted]>; John C. Poole <[redacted]>; Valerie Land <[redacted]>; Clayton Campbell <[redacted]>; Joshua Young <[redacted]>; Marvin Rogers <[redacted]>; Butch Gregory <[redacted]>; Kirk McQuillan <[redacted]>; Benjamin Reed <[redacted]>; Eric Harbison <[redacted]>
Subject: Re: 4-inch Produced Water Line Leak Notification

Please submit additional information as it becomes available. All repairs and future use must be approved by AOGB before this line can be repaired and utilized. Any documentation by ADEM is requested as well.

> On Sep 12, 2025, at 10:09 AM, Kendra Sullivan <[redacted]> wrote:
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As we find out more information and progress with repair, I will provide updates to this email chain.

Should you have any questions please let me know.

Regards,
Kendra Sullivan

Sr. Staff Regulatory Analyst
(713) 513-8629<tel:(713)%20513-8629> (Direct)

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ksullivan@wtoffshore.com<mailto:ksullivan@wtoffshore.com>
|
www.wtoffshore.com<http://www.wtoffshore.com/>
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77057-5784
[cid:image001.png@01DC23CB.581051B0]<https://protect-us.mimecast.com/s/Tz15CpYRVpUngmY1UYNVDM>
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<image001.png>
<4-Inch PW Pipeline Leak Map.pdf>

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Deakle Rd
Deakle Rd
Deakle Rd
9-23-25 Suspected Leak
Image © 2025 Airbus

Kendra Sullivan

From: Deepu Dethan
Sent: Monday, November 17, 2025 8:46 AM
To: Kendra Sullivan
Subject: Fw: W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama

Email chain on PSN 251

Deepu Dethan
Environmental Manager
(251) 802-0204 (Direct)
ddethan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5778



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From: Rhett Walker <Rhett.Walker@oneatlas.com>
Sent: Tuesday, November 4, 2025 10:28 PM
To: Deepu Dethan <ddethan@wtoffshore.com>
Cc: Laurentiu Pirvu <lpirvu@wtoffshore.com>
Subject: Fw: W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama

Deepu,
Additional email correspondence from ADEM this evening.
We'll discuss tomorrow.
Rhett

Get Outlook for iOS

From: Cape, Stephen M <stephen.cape@adem.alabama.gov>
Sent: Tuesday, November 4, 2025 7:10 PM
To: Rhett Walker <Rhett.Walker@oneatlas.com>
Subject: [EXTERNAL] Re: W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama

[External Email] This email originated from outside of the Atlas mail system. Please use caution when opening attachments.

Good Evening Rhett,

After reviewing the lab results, the work plan stated method 8260 and probably method 1633 for PFAS chemicals would be the recommended testing methods. But, we still need an evaluation of the typical production water contents before we confirm the analyte array needed to be tested. Please let me know

when you have researched the production water contents. Once you have the production water contents, I can approve your work plan, including comments stating the testing methods for the soil and groundwater samples, as well as add a Department comment on the well installation plan to install 2-inch well casing. Let me know when you've completed your research.

Many thanks,

Many thanks,

Stephen M. Cape
ADEM
Land Division
Hydrogeology Section
1400 Coliseum Blvd.
Montgomery, AL 36110-7792
(334) 270-5603
stephen.cape@adem.alabama.gov

From: Cape, Stephen M <stephen.cape@adem.alabama.gov>
Sent: Tuesday, November 4, 2025 1:15 PM
To: Rhett Walker <Rhett.Walker@oneatlas.com>
Subject: Re: W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama

Good Morning Rhett,

I hate you're having delays, especially with the weather being so cooperative right now. Basically, I'm just going to rely on the lab results you just sent me to determine the chemical constituents at play and thereby request the appropriate EPA methods for testing those COCs. The other item of concern is the Type II wells need to be 2-inch diameter wells to align with the AEIRG appendix B definition of Type II wells. I appreciate you sending me the lab results. I'll review them ASAP. You're welcome to resubmit the work plan, with the testing methods for the appropriate COCs, and the well installation plan following the AEIRG Appendix B for Type II wells. Otherwise, I'm happy to discuss anytime at your convenience.

Many thanks,

Stephen M. Cape
ADEM
Land Division
Hydrogeology Section
1400 Coliseum Blvd.
Montgomery, AL 36110-7792
(334) 270-5603
stephen.cape@adem.alabama.gov

From: Rhett Walker <Rhett.Walker@oneatlas.com>
Sent: Tuesday, November 4, 2025 9:16 AM
To: Cape, Stephen M <stephen.cape@adem.alabama.gov>
Cc: Deepu Dethan <ddethan@wtoffshore.com>; Laurentiu Pirvu <lpirvu@wtoffshore.com>
Subject: Re: W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama

Stephen,

My apologies in my delayed response, we have decided to post pone the drilling until a later date until some of the site activities have settled down, confirm drilling access logistics, can address your questions and confirm an agreed upon approach.

Please find attached the surface soil sample results for five shallow surface soil samples collected on 9/26/2025.

W&T is researching the produce water contents. Are there other parameters that you would anticipate beside VOCs and Semi-VOCs? Petroleum constituents appear to be the primary concern.

We can discuss more soon.

Thank you,
Rhett

Rhett P. Walker,
PG (AL, MS, AR, TN, GA), REM
Program Manager
C: 205-305-9432

From: Cape, Stephen M <stephen.cape@adem.alabama.gov>
Sent: Monday, November 3, 2025 8:41 PM
To: Rhett Walker <Rhett.Walker@oneatlas.com>
Subject: [EXTERNAL] Re: W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama

[External Email] This email originated from outside of the Atlas mail system. Please use caution when opening attachments.

Hey Rhett,

I hope you're doing well. I wanted to follow up on my email from Thursday, October 30th, regarding the sampling lab results, the produce water contents, and the Type II well (2 INCH DIAMETER) installation plan. Since I haven't received a response and it's now late Monday night, I wanted to reach out again, especially with planning to drill wells tentatively scheduled for Wednesday, November 5th.

It's important that we discuss the scope of work before we can approve the work plan you submitted last week. Kindly contact me with the aforementioned details and confirm the date you're planning on installing the Type II groundwater monitoring wells. I would also like to observe the activities on-site. I look forward to hearing back from you as soon as possible so we can address these items.

Many thanks,

Stephen M. Cape
ADEM
Land Division
Hydrogeology Section
1400 Coliseum Blvd.
Montgomery, AL 36110-7792
(334) 270-5603
stephen.cape@adem.alabama.gov

From: Rhett Walker <Rhett.Walker@oneatlas.com>
Sent: Thursday, October 30, 2025 2:00 PM
To: Cape, Stephen M <stephen.cape@adem.alabama.gov>
Cc: Deepu Dethan <ddethan@wtoffshore.com>; Laurentiu Pirvu <lpirvu@wtoffshore.com>; Brett Olive <brett.olive@oneatlas.com>
Subject: W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama

Mr. Cape,

Please find attached the initial site assessment for W&T Offshore - Pipeline Spill (PSN 251 Leak) Initial Assessment Work Plan, Theodore, Mobile County, Alabama.

We are tentatively scheduled to conduct field work on Wednesday, November 5-6, 2025, and request approval to proceed with field work next week described in the attached work plan.

Should you have any additional questions or comments, please advise.
Thank you,
Rhett

Rhett P. Walker
PG (AL, MS, AR, TN, GA), REM
Program Manager

ATLAS

Atlas Technical Consultants
200 Wellington Manor Court, Ste 100
Alabaster, Alabama 35007
C: 205.305.9432
[oneatlas.com]oneatlas.com

THINK 12
In Front, Behind, Beside, Above, Below
12 FEET

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OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

JULY 17, 2025

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

{Reference Permit 3614-05-14} Permit Number (if applicable)

01- . . . API Number (if applicable) {Mary Ann Field}

Fire ☐ Spill ☒ Leak ☐ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 8-6-2025

Address 5718 Westheimer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name MB-112 B Deck 4-inch departing pipeline 2 County Mobile-OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27) 30.257633 Longitude (NAD27) 88.069553

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 7-17-2025

Time: 3:23 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 7-17-2025 Time: 9:50 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred:

Material spilled: produced liquids

Estimated volume of spill or leak: 192.9 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Material was spilled into water but did not contain hydrocarbon material that could be recovered

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: Alabama Public Service Commission Contact Person: Shawn Emmons

Agency: Contact Person:

CAUSE AND ACTIONS

Circumstances causing the incident: Corrosion on bottom of pipeline

Measures taken to control fire, spill, leak or blow out: installed pipeline clamp

Measures taken to clean up: Install clamp and utilize alternate route

Measures taken to prevent reoccurrence of this incident: Alternate pipeline path

Date that cleanup operations completed (if completed):

Remarks:

RECEIVED
AOGB MOBILE
12/3/2025

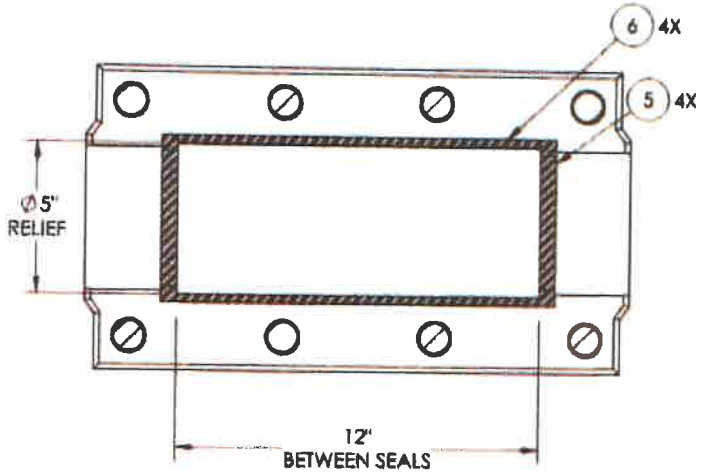
* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

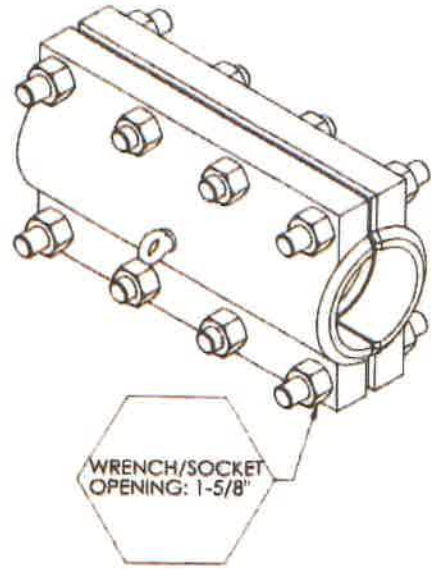
Kendra Sullivan
Signature of Operator's Agent

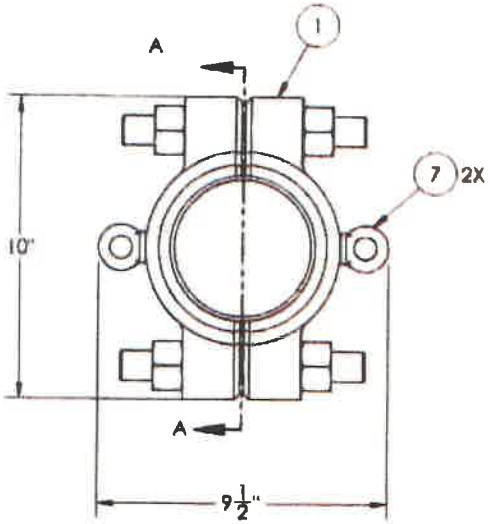
8-6-2025
Date

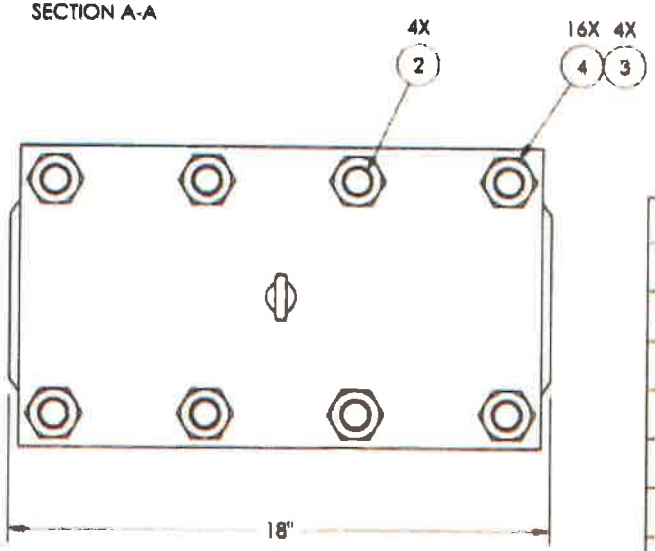
NOTES:
1.) HYDROSTATIC TEST PRESSURE:
1.5x MAOP
2.)RESIDUAL TORQUE VALUE WITH
LIGHT MACHINE OIL = 233 ft-lbs.



SECTION A-A







ITEM NO.	MATERIAL	DESCRIPTION	QTY.
1	SA-350-GR.LF2 CL.1	4" x 18" LG. SPLIT+SLEEVE, 1500 PSI MAOP	1
2	SA-193-GR.B7	1" - 8 x 7" LG. THREADED STUD	4
3	SA-193-GR.B7	1" - 8 x 8" LG. THREADED STUD	4
4	SA-194-GR.2H	1" - 8 HEAVY HEX NUT	16
5		1/2" x 5/8' CIRCUMFERENTIAL PACKING	4
6		1/4" x 3/8" LONGITUDINAL PACKING	4
7	AISI 1035	PAD EYE #2	2

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL INC. ANY REPRODUCTION, DISCLOSURE, OR USE OF ITS CONTENTS OR ANY PART THEREOF IS EXPRESSLY PROHIBITED EXCEPT AS THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL, INC OTHERWISE MAY AGREE IN WRITING.

MATERIAL
WEIGHT 148 LBS. TOTAL
DESIGN CODE ASME SECTION VIII, DIV. 2 API 6H
SCALE DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

PLIDCO THE PIPE LINE DEVELOPMENT CO. STRONGSVILLE, OHIO

TITLE 4" x 18" LG. PLIDCO SPLIT+SLEEVE 1500 PSI MAOP

DRAWN A. NASER DATE 9/8/2020
APPROVED DATE

SIZE	DRAWING NUMBER	SHEET	LEVEL
B	10851-CF	1 of 1	A

PLIDCO®
11792 Alameda Drive Strongsville, OH 44149 USA ·
THE PIPE LINE DEVELOPMENT COMPANY
440-871-5700 · plidco.com · pipeline@plidco.com

Declaration of Compliance

This certifies that the product(s) shipped meets the design, fabrication, and testing requirements of the PLIDCO quality management system. The product(s) meet the requirements of ASME PCC-2. Test certification prepared in accordance with ISO 10474:2013 type 3.1

Product Identification

Product Description	Serial Number	Shell Heat Number
Part Number: SS-4Nx18-1500-VB		
Split+Sleeve Pipe: 4" NPS MAOP: 1500 PSI Between Seals: 12" Seals: Viton B / FKM Temperature Range: -18°F To 250°F Design Code: ASME Section VIII, Div. 2; API 6H Features: Seal GirderRings Attachments: N/A	6776204	DM837

Approved by,
PLIDCO Quality Assurance
Michael Mindyas

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

PRODUCT INFORMATION

Job #	Piece #	Heat/Ingot #	Ingot Size	Ingot Weight (LBS)	Product Size	Weight (LBS)
UA1549	01	DM837-2	40L	39,660	7.13" X 80.13" X 144.75"	23411.00

LADLE CHEMICAL ANALYSIS EQS

Chemistry Analysis performed per ASTM E415 by Ellwood Quality Steel, an ISO 9001-2015 company (not Nadcap accredited), 700 Moravia Street, New Castle, PA 16101

	Composition (wt%)												
Heat No.	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	As
DM837	.18	.87	.011	.006	.17	.38	.18	.10	.028	.16	.023	.001	.006
	Sn	Co	W	Pb	B	Sb	Nb	Ca	Zn	Zr	N	Hppm	
	.009	.011	.009	.0010	.0003	.001	.015	.0009	<.001	.001	.0122	1.2	

PLIDCO QC APPROVED

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE. THE DATA HEREIN REPRESENTS ONLY THE ITEM(S) TESTED. THE SIMPLE ACCEPTANCE AND REJECTION DECISION RULE IS EMPLOYED FOR ALL LABORATORY TEST RESULTS. THIS ECFG TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF ECFG.

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

ROOM TEMPERATURE TENSILE

Test Diameter: 0.505 Specification: ASTM A370

Piece No.	Location	Orientation	Tensile Strength (psi)	0.2% Offset Yield Strength (psi)	0.02% Offset Yield Strength (psi)	0.01% Offset Yield Strength (psi)	4D Elongation (%)	Reduction of Area (%)
01	TOP	LONGIT TENSILE T	73,144	45,681			35	70

SURFACE HARDNESS

Piece No.	Scale	Specification	Results (HBW)
01		a956	130, 127, 134

CHARPY V-NOTCH IMPACT TOUGHNESS

Test Size: 10mm X 10mm Specification: ASTM A370 Striker: 8mm

Piece No.	Location	Orientation	Test Temperature (°F)	Absorbed Energy (ft-lbs)	Shear (%)	Lateral Expansion (mils)	Avg. Absorbed Energy (ft-lbs)
01	TOP	LONGITUDINAL IMPACT	-50	57, 48, 61			

ULTRASONIC INSPECTION RESULTS

Piece No.	Test Date	Inspector and Title	Specification	Standard	Acceptance Criteria	Procedure	Quantity Accepted
01	12/14/2023	JOHN BIRTALAN - NAS 410 / SNT-TC-1A Level II	ASTM A388 19	ASTM A388	1/4 EFBH	ECF-SI-ESS-01-UT	1

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Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

General Comments:

Ellwood City Forge Group is an AS9100:2016 & ISO 9001:2015 certified company registered by ABS Quality Evaluations, Inc. (Certificate #59175).

The Ellwood City Forge Group Materials Testing Lab is ISO 17025:2017 accredited in Mechanical Testing by A2LA (Certificate #3143.01).

The Ellwood City Forge Group Materials Testing Lab is Nadcap accredited for the following test methods: Room Temperature Tensile (test code A), Charpy Impact (test code N), Metallography (test codes L0, L11, L12, XL), Brinell Hardness (test code M1), Test Specimen Preparation (test code Z), and Lab Specimen Heat Treat (test code XG).

During the manufacturing process, examinations, and testing, the material has not come into contact with Mercury, any compound containing Mercury, or with Mercury-containing devices that do not employ secondary containment.

No welding was performed on this material.

Hot forging practice: Open die

RADIOACTIVE FREE MATERIAL

MELTED AND MANUFACTURED IN USA

FORGED TO ACHIEVE A MINIMUM FORGE REDUCTION OF 3:1

MATERIAL SURFACES MILLED TO 500 RMS FINISH

VACCUM DEGASSED, FULLY KILLED FINE GRAIN PRACTICE - CALCIUM TREATED

PLIDCO
—QC—
APPROVED

Alexandra Dunn

Certification Clerk

Country of Origin: U.S.A.

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ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

CERTIFICATION OF COMPLIANCE

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

Parts supplied on Ellwood Specialty Steel Purchase Order number 229374
UA1549 01

This is to certify that the parts supplied have been manufactured, processed, inspected, and tested in accordance with all requirements of the purchase order and any required specifications. Inspection and test results signify that the parts delivered are in conformance to all purchase order requirements.

PLIDCO QC APPROVED

Alexandra Dunn

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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Ellwood City Forge Group
P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166 Fax: 724-752-3449
www.ellwoodcityforge.com

Date: 12/14/2023

Ultrasonic Report

Customer:	Ellwood Specialty Steel	Test Date:	Dec 14 2023 8:32AM
P.O. No.:	229374	Standard:	ASTM A388 REV. 19
Drawing No.:	7" X 80" X 10' - 12' (OK LONG)	Acceptance Criteria:	1/4 EFBH
Grade:	LF2	Procedure:	ECF-SI-ESS-01-UT REV. 1
Description:	FORGED BLOCK 7X80	Inspected By:	JOHN BIRTALAN
Job No.:	UA1549	Inspector Title:	NAS 410 / SNT-TC-1A Level II
Suffix:	01		
Heat No.:	DM837-2		

Instrument:	Olympus Epoch 650			Serial No.:	180574503
Transducer:	Olympus CN2R-24				
Technique:	Contact			Type:	Ceramic
Wave Mode:	Longitudinal	MHz:	2	Size:	24mm
Calibration Method:	DGS				
Reflector Size:	1/4" EFBH				
Couplant:	GEL			RMS:	250

Quantity Inspected:	1	Quantity Accepted:	1	Quantity Rejected:	0

Remarks:

NO RECORDABLE INDS.

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Inspected by JOHN BIRTALAN
NAS 410 / SNT-TC-1A Level II

PLIDCO QC APPROVED

PLIDCO®

THE PIPE LINE DEVELOPMENT COMPANY

Hydrostatic Test Report with Chart

Date Issued	March 7,2016
Revision Date	3/1/2022
Revision #	13
Effective Date	3/5/2022

Form Number: QMF-44

Serial #:	6776204	Job #:	67762	Product:	Split+Sleeve		
Fitting Diameter(s):	4	Units	in	Fitting Length:	18	Units	in
Vent(s) Size:	N/A	Quantity:	N/A	"A" half	N/A	"B" half	
Test Piece Type:	1- piece			Test Piece(s) #:	843		

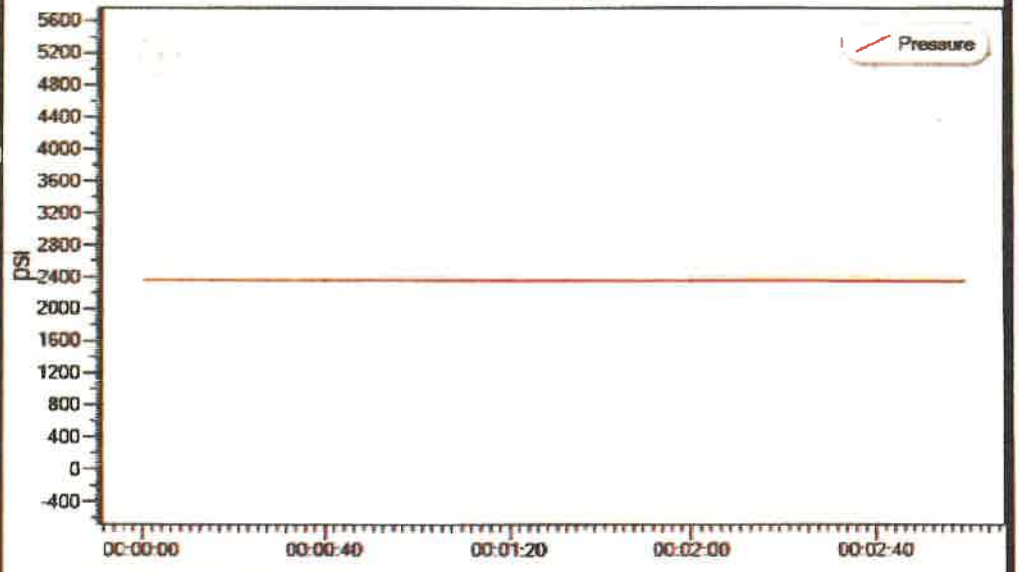
Maximum Allowable Operating Pressure (MAOP):	1500	PSI	Power + Grip Test Type	Required Test Duration:	0:02:00	hr : min : sec
Calculated Min Test Pressure:	2250	PSI	N/A	Actual Test Duration:	0:03:00	hr : min : sec
Calculated Max Test Pressure:	2700	PSI				

Gauge Information	
Model	Additel680
SN	21818190039
Range	(0-15000)PSI
Unit	psi

Record Information	
Start Time	09/23/2024 14:28:13
End Time	09/23/2024 14:31:13
Max Value	2358
Min Value	2354
Avg Value	2356
Pressure Differential	4
Test Number	1

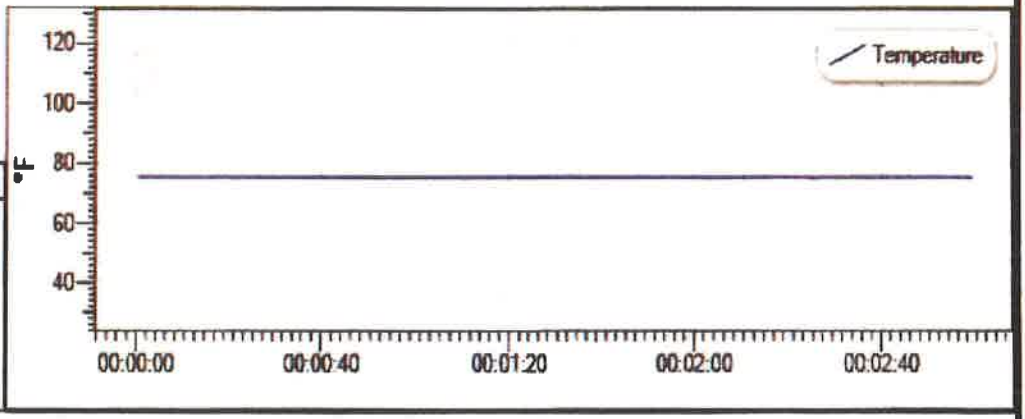
PASS

Pressure Chart



X No visible leakage or permanent material deformation.

Remarks:



Tester/Inspector Signature: Jose Rios Date: 09/23/2024

PLIDCO —QC— APPROVED

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS
TX Reg. # F-000059

Pipeline Leak Estimate
MB 112-B Produced Water Line
July 2025

Document Number:	20250524-04-STUDY-P-001
Client Name:	W&T Offshore
Project Title:	MB 112-B
Job Number:	20250524-04

A	9/3/2025	Issued for Review	SWC	TH		
REV	DATE	DESCRIPTION	ORIG	APPROVALS		

APPROVED BY:	COMPANY APPROVAL:
DATE:	DATE:

PROCESS CALCULATIONS			
Client	W&T Offshore	Project No.	20250524-04
Project	MB 112-B	Rev	A
Calculation Title	Pipeline Leak Estimate MB 112-B Produced Water Line July 2025	By	SWC
Calculation No.	20250524-04-STUDY-P-001	Checked	TH
		Date	9/3/2025

TABLE OF CONTENTS

1. PURPOSE
2. REFERENCES
3. NOTES
4. SUMMARY CALCULATIONS
5. CONCLUSIONS
6. DETAILED CALCULATIONS

1. PURPOSE

This calculation estimates the leak rate for the hole in the 4" MB 112-B produced water pipeline that occurred July 16, 2025.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B.R., Young, D.F. and Okiishi, T. H. 1998, 3ed.

3. NOTES

W&T advised the following

The operator noticed the leak about 9:00 pm on July 16, 2025.
Monitored throughout the night and never shut down pipeline.
Swapped into newly routed pipeline roughly at 7:00 am on July 17, 2025.
The leak occurred at a depth of 22 feet, with 8 feet of water and 14 feet of mud
The estimated hole size is 1/4"

The accuracy of the estimated volume is ± 20%.

4. SUMMARY CALCULATIONS

The pressure trend provided by W&T was used to determine the average pressure in the pipeline for the duration of the leak. The duration of the leak was divided into two time segments; one from 9:00 PM on July 16 to 7:00 AM on July 17 and one from 7:00 AM to 8:02 AM on July 17.

The average pressure for each segment was used to estimate the amount of the leak during that time period and then the total amount was determined by summing the amount form each segment.

	Time	Pressure, psig	Volume Leaked, bbl
Period 1	7/16/25 21:00	171	192.9
	7/17/25 7:00	140	

5. CONCLUSIONS

The duration of the leak was 10 hours.

The estimated amount leaked is 193 bbls.

PROCESS CALCULATIONS			
Client	W&T Offshore	Project No.	20250524-04
Project	MB 112-B	Rev.	A
Calculation Title	Pipeline Leak Estimate MB 112-B Produced Water Line July 2025	By	SWC
Calculation No.	20250524-04-STUDY-P-001	Checked	TH
		Date	9/3/2025

6. DETAILED CALCULATIONS

W&T provided a graph of the pressure measurements for the MB112-B water pipeline.

The pipeline pressure is depicted as a straight line on the trend chart.

A straight line was added to the pressure graphs to approximate the pressure of the pipeline.

Initial Pipeline Pressure = 171 psig
Final Pipeline Pressure = 140 psig

Average Pipeline Pressure = 155.5 psig = 1,071,395 Pa

Duration = 10 hrs

The leak would stop when the pump is turned off to switch the flow to the new pipeline at 7:00 AM on July 17 since this is a liquid filled pipeline.

The average pressure is used with the following formula to estimate the leaked amount.

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m^3/s
C = coefficient of discharge, 0.62
A = Area of the hole, m^2
ΔP = pressure differential, Pa
ρ = liquid density, kg/m^3

C = 0.62
D = 0.25 in = 0.00635 m
A = 3.17E-05 m^2
ρ = 1,030 kg / m^3 (for produced water)

P at 8' =	3.6 psig	=	24,804 Pa	(water pressure)
P w/ 14' of mud =	11.2 psig	=	77,168 Pa	(mud density of 115 lb / ft^3)
P at 22' =	14.8 psig	=	101,972 Pa	

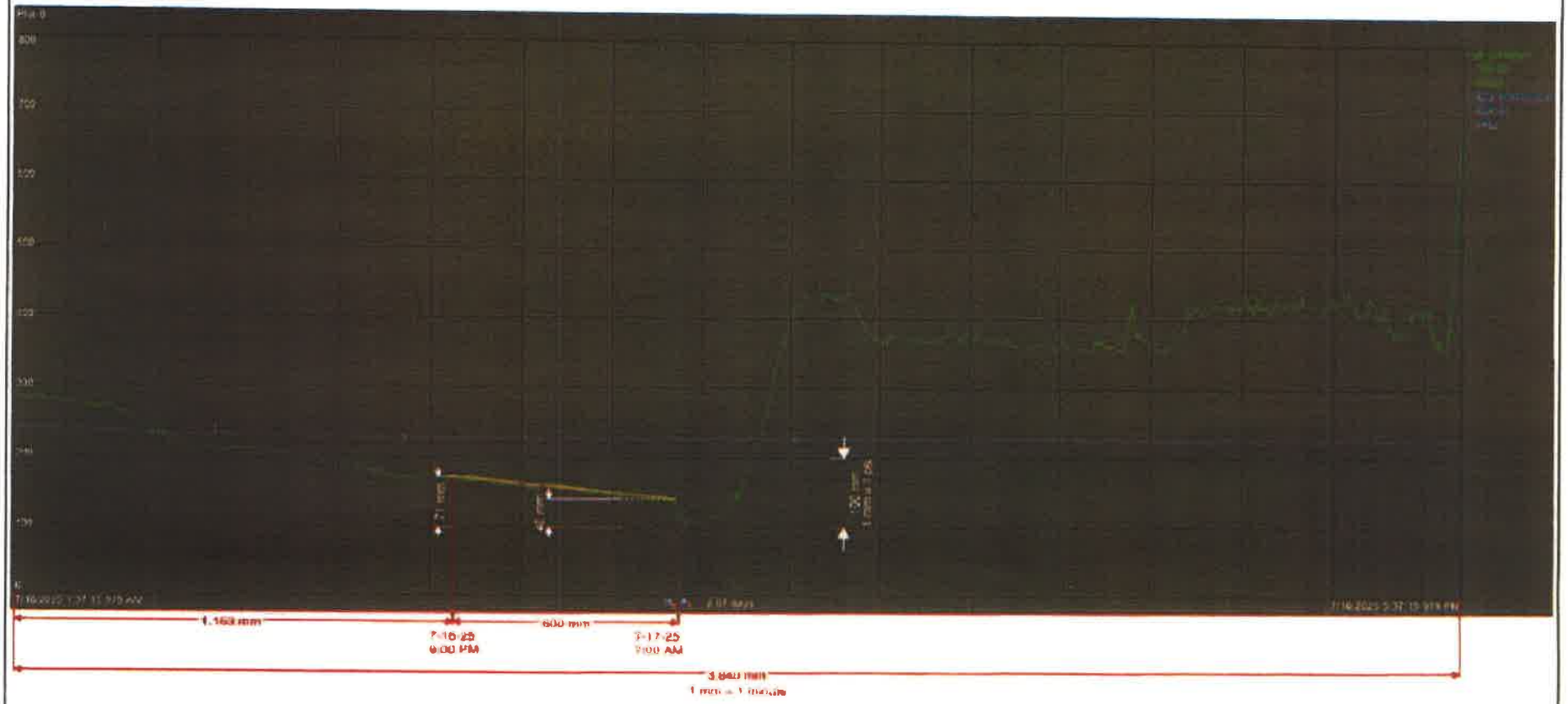
ΔP = 989,423 Pa

Q = 0.00085 m^3/s = 3.07 m^3/h = 19.3 bbl / h Total volume = 192.9 bbls

Client	W&T Offshore
Project	MB 112-B
Calculation Title	Pipeline Leak Estimate MB 112-B Produced Water Line July 2025
Calculation No.	20250524-04-STUDY-P-001

Project No.	20250524-04
Rev.	A
By	BWS
Checked	TH
Date	6/3/2025

The pressure graph provided by W&T is included below.



STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01- _____ - _____ - _____

Fire ☐ Spill ☒ Leak ☐ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 8-6-2025

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name

2. County

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27): 30.257633 Longitude (NAD27): 88.069533

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 7-17-2025

Time: 3:23 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 7-17-2025 Time: 9:50 AM ☒ PM ☐

Did Incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: produced liquids

Estimated volume of spill or leak: 192.9 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Material was spilled into water but did not contain hydrocarbon material that could be recovered

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: Alabama Public Service Commission Contact Person: Shawn Emmons

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Corrosion on bottom of pipeline

Measures taken to control fire, spill, leak or blow out: installed pipeline clamp

Measures taken to clean up: Install clamp and utilize alternate route

Measures taken to prevent reoccurrence of this incident: Alternate pipeline path

Date that cleanup operations completed (if completed): _____

Remarks:

RECEIVED
AOGB MOBILE
11/10/25

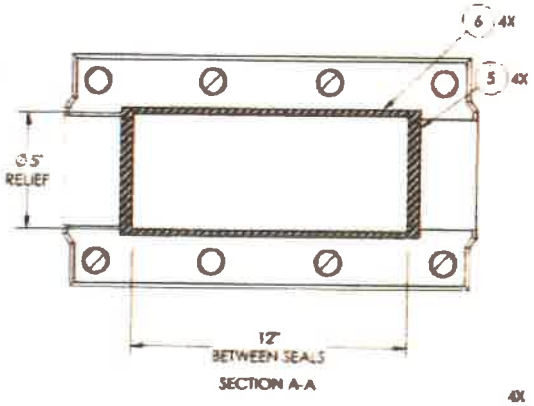
* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

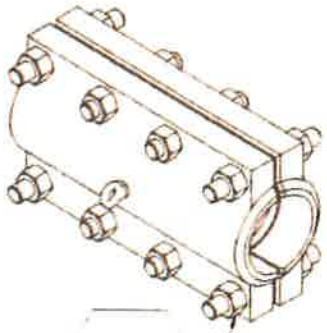
Signature of Operator's Agent

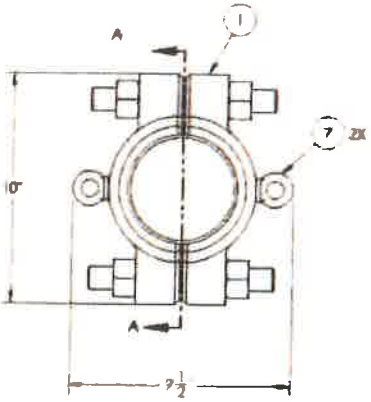
8-6-2025
Date

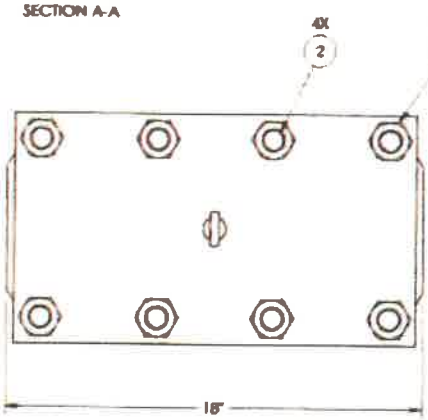
NOTES:
1.) HYDROSTATIC TEST PRESSURE: 1.5x MAOP
2.) RESIDUAL TORQUE VALUE WITH LIGHT MACHINE OIL = 233 ft-lbs.



SECTION A-A







ITEM NO.	MATERIAL	DESCRIPTION	QTY
1	SA-350-GR.LF2 CL.1	4" x 18" LG. SPLIT+SLEEVE, 1500 PSI MAOP	1
2	SA-193-GR.B7	1" - 8 x 7" LG. THREADED STUD	4
3	SA-193-GR.B7	1" - 8 x 8" LG. THREADED STUD	4
4	SA-194-GR.2H	1" - 8 HEAVY HEX NUT	16
5		1/2" x 5/8" CIRCUMFERENTIAL PACKING	4
6		1/4" x 3/8" LONGITUDINAL PACKING	4
7	AISI 1035	PAD EYE #2	2

148 LBS. TOTAL	PLIDCO THE PIPE LINE DEVELOPMENT CO. STRONGSVILLE, OHIO		
ASME SECTION VIII, DIV. 2 API 6H	4" x 18" LG PLIDCO SPLIT+SLEEVE 1500 PSI MAOP	A. NASER	
		B	10851-CF	1 of 1	A

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE PIPE LINE DEVELOPMENT COMPANY (PLIDCO) INTERNATIONAL, INC., MAY REPRODUCTION, DISCLOSURE, OR USE OF ITS CONTENTS OR ANY PART THEREOF IS PROHIBITED EXCEPT AS THE PIPE LINE DEVELOPMENT COMPANY (PLIDCO) INTERNATIONAL, INC. OTHERWISE MAY AGREE IN WRITING

PLIDCO®
11792 Alameda Drive Strongsville, OH 44149 USA
THE PIPE LINE DEVELOPMENT COMPANY
440-871-5700 · plidco.com · pipeline@plidco.com

Declaration of Compliance

This certifies that the product(s) shipped meets the design, fabrication, and testing requirements of the PLIDCO quality management system. The product(s) meet the requirements of ASME PCC-2. Test certification prepared in accordance with ISO 10474:2013 type 3.1

Product Identification

Product Description	Serial Number	Shell Heat Number
Part Number: SS-4Nx18-1500-VB		
Split+Sleeve Pipe: 4" NPS MAOP: 1500 PSI Between Seals: 12" Seals: Viton B / FKM Temperature Range: -18°F To 250°F Design Code: ASME Section VIII, Div. 2; API 6H Features: Seal GirderRings Attachments: N/A	6776204	DM837

Approved by,
PLIDCO Quality Assurance
Michael Mindyas

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

PRODUCT INFORMATION

Job #	Piece #	Heat/Ingot #	Ingot Size	Ingot Weight (LBS)	Product Size	Weight (LBS)
UA1549	01	DM837-2	40L	39,660	7.13" X 80.13" X 144.75"	23411.00

LADLE CHEMICAL ANALYSIS EQS

Chemistry Analysis performed per ASTM E415 by Ellwood Quality Steel, an ISO 9001-2015 company (not Nadcap accredited), 700 Moravia Street, New Castle, PA 16101

	Composition (wt%)												
Heat No.	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	As
DM837	.18	.87	.011	.006	.17	.38	.18	.10	.028	.16	.023	.001	.006
	Sn	Co	W	Pb	B	Sb	Nb	Ca	Zn	Zr	N	Hppm	
	.009	.011	.009	.0010	.0003	.001	.015	.0009	<.001	.001	.0122	1.2	

PLIDCO —QC— APPROVED

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

ROOM TEMPERATURE TENSILE

Test Diameter: 0.505 Specification: ASTM A370

Piece No.	Location	Orientation	Tensile Strength (psi)	0.2% Offset Yield Strength (psi)	0.02% Offset Yield Strength (psi)	0.01% Offset Yield Strength (psi)	4D Elongation (%)	Reduction of Area (%)
01	TOP	LONGIT TENSILE T	73,144	45,681			35	70

SURFACE HARDNESS

Piece No.	Scale	Specification	Results (HBW)
01		a956	130, 127, 134

CHARPY V-NOTCH IMPACT TOUGHNESS

Test Size: 10mm X 10mm Specification: ASTM A370 Striker: 8mm

Piece No.	Location	Orientation	Test Temperature (°F)	Absorbed Energy (ft-lbs)	Shear (%)	Lateral Expansion (mils)	Avg. Absorbed Energy (ft-lbs)
01	TOP	LONGITUDINAL IMPACT	-50	57, 48, 61			

ULTRASONIC INSPECTION RESULTS

Piece No.	Test Date	Inspector and Title	Specification	Standard	Acceptance Criteria	Procedure	Quantity Accepted
01	12/14/2023	JOHN BIRTALAN - NAS 410 / SNT-TC-1A Level II	ASTM A388 19	ASTM A388	1/4 EFBH	ECF-SI-ESS-01-UT	1

Michael Mintzer

PLIDCO —QC— APPROVED

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Alexandra Dunn

Certification Clerk

Country of Origin: U.S.A.

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MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

General Comments:

Ellwood City Forge Group is an AS9100:2016 & ISO 9001:2015 certified company registered by ABS Quality Evaluations, Inc. (Certificate #59175).

The Ellwood City Forge Group Materials Testing Lab is ISO 17025:2017 accredited in Mechanical Testing by A2LA (Certificate #3143.01).

The Ellwood City Forge Group Materials Testing Lab is Nadcap accredited for the following test methods: Room Temperature Tensile (test code A), Charpy Impact (test code N), Metallography (test codes L0, L11, L12, XL), Brinell Hardness (test code M1), Test Specimen Preparation (test code Z), and Lab Specimen Heat Treat (test code XG).

During the manufacturing process, examinations, and testing, the material has not come into contact with Mercury, any compound containing Mercury, or with Mercury-containing devices that do not employ secondary containment.

No welding was performed on this material.

Hot forging practice: Open die

RADIOACTIVE FREE MATERIAL

MELTED AND MANUFACTURED IN USA

FORGED TO ACHIEVE A MINIMUM FORGE REDUCTION OF 3:1

MATERIAL SURFACES MILLED TO 500 RMS FINISH

VACCUM DEGASSED, FULLY KILLED FINE GRAIN PRACTICE - CALCIUM TREATED

PLIDCO
QC
APPROVED

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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ELLWOOD
City Forge Group

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Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

CERTIFICATION OF COMPLIANCE

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

Parts supplied on Ellwood Specialty Steel Purchase Order number 229374
UA1549 01

This is to certify that the parts supplied have been manufactured, processed, inspected, and tested in accordance with all requirements of the purchase order and any required specifications. Inspection and test results signify that the parts delivered are in conformance to all purchase order requirements.

PLIDCO
—QC—
APPROVED

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE. THE DATA HEREIN REPRESENTS ONLY THE ITEM(S) TESTED. THE SIMPLE ACCEPTANCE AND REJECTION DECISION RULE IS EMPLOYED FOR ALL LABORATORY TEST RESULTS. THIS ECFG TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF ECFG.

ELLWOOD City Forge Group

Ellwood City Forge Group
P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166 Fax: 724-752-3449
www.ellwoodcityforge.com

Date: 12/14/2023

Ultrasonic Report

Customer:	Ellwood Specialty Steel	Test Date:	Dec 14 2023 8:32AM
P.O. No.:	229374	Standard:	ASTM A388 REV. 19
Drawing No.:	7" X 80" X 10' - 12' (OK LONG)	Acceptance Criteria:	1/4 EFBH
Grade:	LF2	Procedure:	ECF-SI-ESS-01-UT REV. 1
Description:	FORGED BLOCK 7X80	Inspected By:	JOHN BIRTALAN
Job No.:	UA1549	Inspector Title:	NAS 410 / SNT-TC-1A Level II
Suffix:	01		
Heat No.:	DM837-2		

Instrument:	Olympus Epoch 650			Serial No.:	180574503
Transducer:	Olympus CNZR-24				
Technique:	Contact			Type:	Ceramic
Wave Mode:	Longitudinal	MHz:	2	Size:	24mm
Calibration Method:	DGS				
Reflector Size:	1/4" EFBH				
Couplant:	GEL			RMS:	250

Quantity Inspected:	1	Quantity Accepted:	1	Quantity Rejected:	0

Remarks:

NO RECORDABLE INDS.

Inspected by JOHN BIRTALAN
NAS 410 / SNT-TC-1A Level II

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES THIS EMP TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF EMP

PLIDCO QC APPROVED

PLIDCO®

THE PIPE LINE DEVELOPMENT COMPANY

Hydrostatic Test Report with Chart

Date Issued	March 7,2016
Revision Date	3/1/2022
Revision #	13
Effective Date	3/5/2022

Form Number: QMF-44

Serial #: 6776204 Job #: 67762 Product: Split+Sleeve

Fitting Diameter(s): 4 Units in Fitting Length: 18 Units in

Vent(s) Size: N/A Quantity: N/A "A" half N/A "B" half

Test Piece Type: 1- piece Test Piece(s) #: 843

Maximum Allowable Operating Pressure (MAOP): 1500 PSI

Power + Grip Test Type: N/A

Required Test Duration: 0:02:00 hr : min : sec

Calculated Min Test Pressure: 2250 PSI

Calculated Max Test Pressure: 2700 PSI

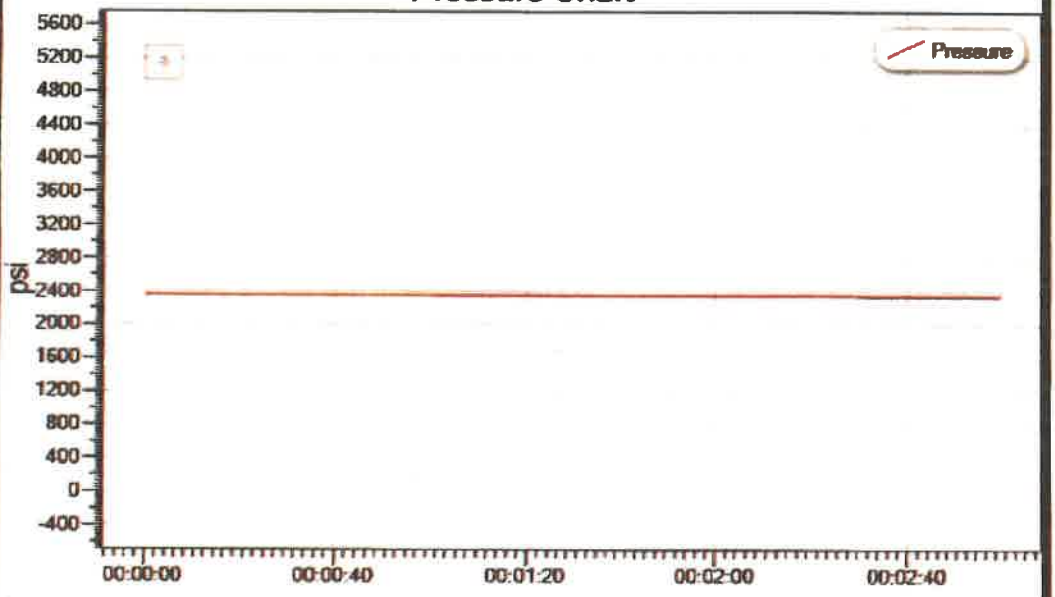
Actual Test Duration: 0:03:00 hr : min : sec

Gauge Information	
Model	Additel680
SN	21818190039
Range	(0-15000)PSI
Unit	psi

Record Information	
Start Time	09/23/2024 14:28:13
End Time	09/23/2024 14:31:13
Max Value	2358
Min Value	2354
Avg Value	2356
Pressure Differential	4
Test Number	1

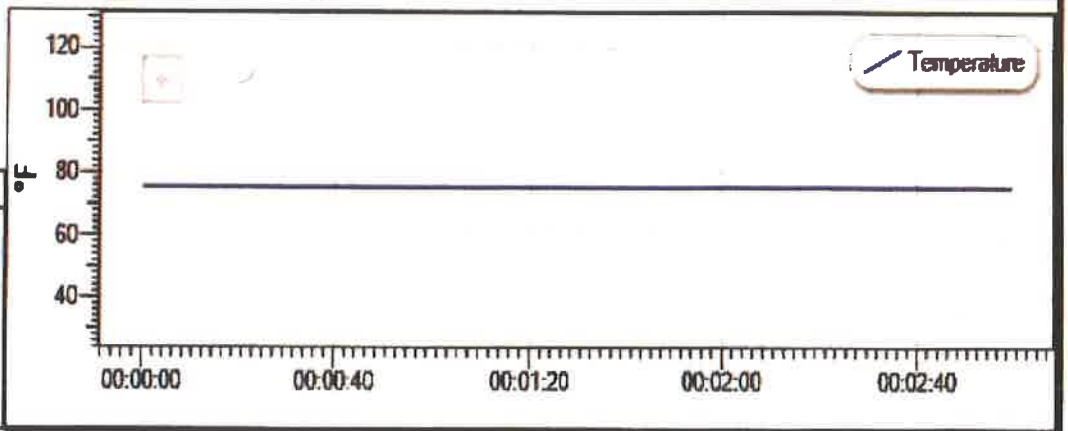
PASS

Pressure Chart



X No visible leakage or permanent material deformation.

Remarks:



Tester/Inspector Signature: Jose Rios Date: 09/23/2024

PLIDCO QC APPROVED

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS
TX Reg. # F-000059

Pipeline Leak Estimate
MB 112-B Produced Water Line
July 2025

Document Number:	20250524-04-STUDY-P-001
Client Name:	W&T Offshore
Project Title:	MB 112-B
Job Number:	20250524-04

A	9/3/2025	Issued for Review	SWC	TH		
REV	DATE	DESCRIPTION	ORIG	APPROVALS		

APPROVED BY:	COMPANY APPROVAL:
DATE:	DATE:

TABLE OF CONTENTS

1. PURPOSE
2. REFERENCES
3. NOTES
4. SUMMARY CALCULATIONS
5. CONCLUSIONS
6. DETAILED CALCULATIONS

1. PURPOSE

This calculation estimates the leak rate for the hole in the 4" MB 112-B produced water pipeline that occurred July 16, 2025.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B.R., Young, D.F. and Okiishi, T. H. 1998, 3ed.

3. NOTES

W&T advised the following

The operator noticed the leak about 9:00 pm on July 16, 2025.
Monitored throughout the night and never shut down pipeline.
Swapped into newly routed pipeline roughly at 7:00 am on July 17, 2025.
The leak occurred at a depth of 22 feet, with 8 feet of water and 14 feet of mud
The estimated hole size is 1/4"

The accuracy of the estimated volume is ± 20%.

4. SUMMARY CALCULATIONS

The pressure trend provided by W&T was used to determine the average pressure in the pipeline for the duration of the leak. The duration of the leak was divided into two time segments; one from 9:00 PM on July 16 to 7:00 AM on July 17 and one from 7:00 AM to 8:02 AM on July 17.

The average pressure for each segment was used to estimate the amount of the leak during that time period and then the total amount was determined by summing the amount form each segment.

	Time	Pressure, psig	Volume Leaked, bbl
Period 1	7/16/25 21:00	171	192.9
	7/17/25 7:00	140	

5. CONCLUSIONS

The duration of the leak was 10 hours.

The estimated amount leaked is 193 bbls.

6. DETAILED CALCULATIONS

W&T provided a graph of the pressure measurements for the MB112-B water pipeline.

The pipeline pressure is depicted as a straight line on the trend chart.

A straight line was added to the pressure graphs to approximate the pressure of the pipeline.

Initial Pipeline Pressure = 171 psig
Final Pipeline Pressure = 140 psig

Average Pipeline Pressure = 155.5 psig = 1,071,395 Pa

Duration = 10 hrs

The leak would stop when the pump is turned off to switch the flow to the new pipeline at 7:00 AM on July 17 since this is a liquid filled pipeline.

The average pressure is used with the following formula to estimate the leaked amount.

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m³/s
C = coefficient of discharge, 0.62
A = Area of the hole, m²
ΔP = pressure differential, Pa
ρ = liquid density, kg/m³

C = 0.62
D = 0.25 in = 0.00635 m
A = 3.17E-05 m²
ρ = 1,030 kg / m³ (for produced water)

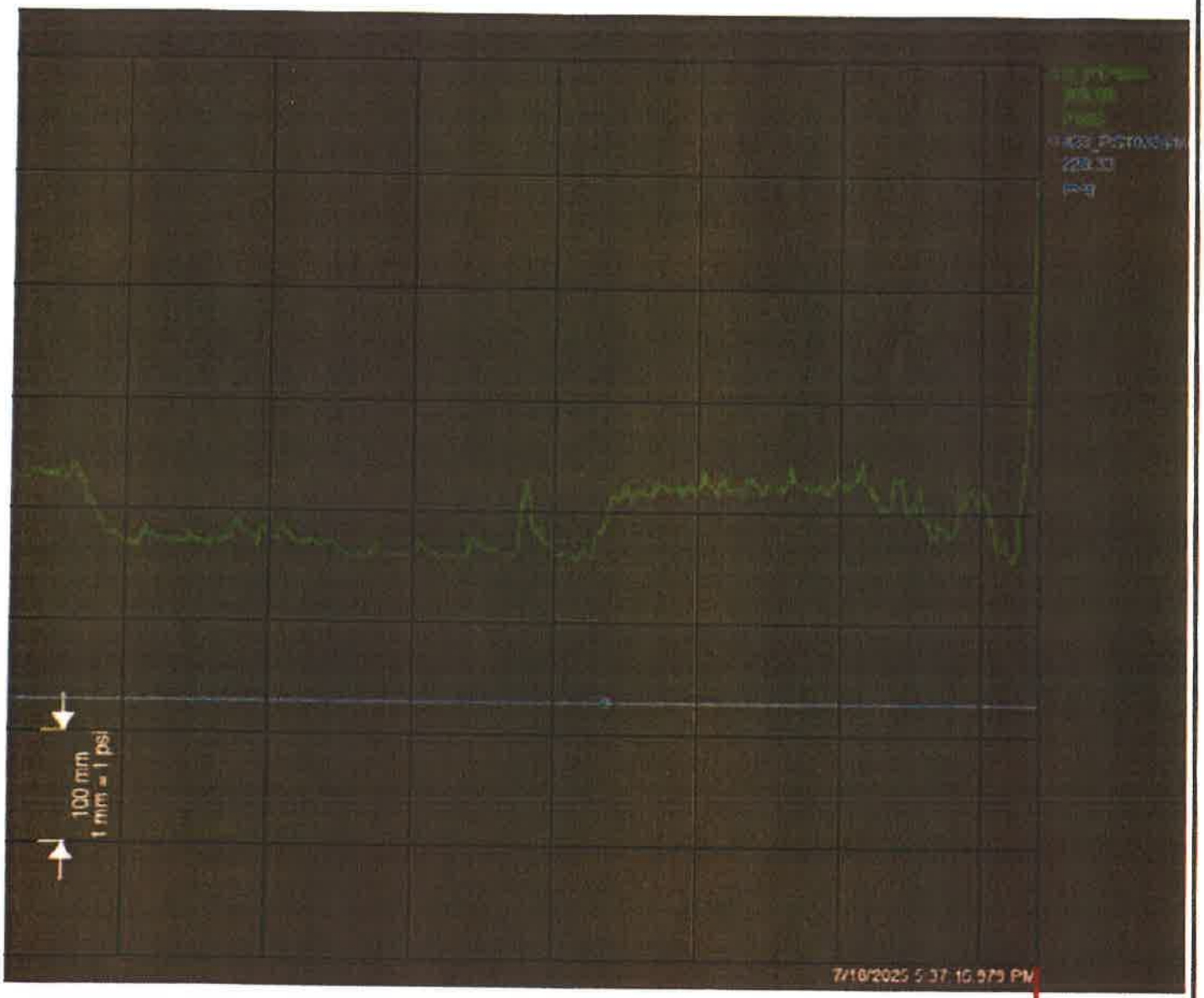
P at 8' =	3.6 psig	=	24,804 Pa	(water pressure)
P w/ 14' of mud =	11.2 psig	=	77,168 Pa	(mud density of 115 lb / ft³)
P at 22' =	14.8 psig	=	101,972 Pa	

ΔP = 969,423 Pa

Q = 0.00085 m³/s = 3.07 m³/h = 19.3 bbl / h Total volume = 192.9 bbls

ATIONS

Project No.	20250524-04
Rev.	A
By	SWC
Checked	TH
Date	9/3/2025



STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

01 - _____ - _____ - _____
API Number (if applicable)

Fire ☐ Spill ☒ Leak ☐ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 8-6-2025

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name

2. County

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27): 30.257637 Longitude (NAD27): 88.069533

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 7-17-2025

Time: 3:23 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 7-17-2025 Time: 9:50 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: produced water

Estimated volume of spill or leak: 192.9 bbls

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Corrosion on bottom of pipeline

Measures taken to control fire, spill, leak or blow out: installed pipeline clamp

Measures taken to clean up: Install clamp and utilize alternate route

Measures taken to prevent reoccurrence of this incident: Alternate pipeline path

Date that cleanup operations completed (if completed): _____

Remarks:

RECEIVED
AOGB MOBILE
9/15/25 via email

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Kendra Sullivan
Signature of Operator's Agent

8-6-2025
Date

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

OGB-27

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

01 - _____ - _____ - _____
API Number (if applicable)

Fire ☐ Spill ☒ Leak ☐ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 8-6-2025

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: _____ 2 County: _____

3. Facility Location* (surface): (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27): 30.25763 Longitude (NAD27): 88.06953

3. Field (If wildcat, so state): _____

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 7-17-2025

Time: 3:23 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 7-17-2025 Time: 9:50 AM ☒ PM ☐

Did Incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: produced water

Estimated volume of spill or leak: _____

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Corrosion on bottom of pipeline

Measures taken to control fire, spill, leak or blow out: installed pipeline clamp

Measures taken to clean up: Install clamp and utilize alternate route

Measures taken to prevent reoccurrence of this incident: Alternate pipeline path

Date that cleanup operations completed (if completed): _____

Remarks:

RECEIVED
AOGB MOBILE
8/6/25 ma
email

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Kendra Sullivan
Signature of Operator's Agent

8-6-2025
Date

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Friday, July 18, 2025 7:43 AM
To: Leigh Blake
Cc: Benjamin Reed; Eric Harbison
Subject: Mobile Bay 112 4-inch Produced Water Line

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning Leigh,

On July 16th, the Control Room reported pressure disturbances on produced water line. The disturbance included a drop in pressure similar to the previous leak events that occurred on the pipeline. A visual inspection for a sheen was attempted on July 17th, but sea conditions were not favorable to spot a sheen.

W&T Offshore, Inc. has a dive crew in route to Tala Dock expected to arrive on Saturday morning. The short term plan is to utilize a clamp to repair the pipeline. The dive crew will be locating the leak by searching for bubbles pushed down the pipeline by the 112-B platform and then perform repairs.

Currently, there is no loss in production to the field. The produced water has been rerouted by using the 6-inch produced water line originating at MB-112-B to MB-115-C platform, then push water from MB-115-C to MB-114-CC into the 4-inch produced water line, and then from MB-114-CC to MB-76-A-Aux from the 4-inch produced water line.

Should you have any questions or require additional information please let us know.

Sincerely,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

W&T OFFSHORE

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Wednesday, August 6, 2025 8:45 AM
To: Leigh Blake
Cc: Clayton Campbell; Butch Gregory; Marvin Rogers; John C. Poole
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss
Attachments: OGB-27 7-17-2025 PL Leak .pdf

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Leigh,

I have asked engineering for the spill calculations and have pulled in my VP to have your request prioritized. Please find attached the OGB-27 Report for the July spill with PLIDCO Clamp Spec Sheets attached. As soon as we receive the spill calculations, the OGB-27 reports previously submitted to your office will be updated with the volumes.

The production lost from the June spill was calculated to be 706.41 MMCF. The July spill caused no loss in production due to the pipeline alternate route path being utilized.

Should you need anything else please let me know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Wednesday, August 6, 2025 7:14 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>
Subject: 4" Produced Liquids OGB-27 Reports and Production Loss

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Kendra,

I never received a June 2025 spill volume as requested below and have received nothing on the July 2025 most recent leak (5th leak on 4" since November 2024). Please provide information on these two pipeline leaks as well as the lost production from the July spill previously requested on June 16 and again on July 17, 2025.

Leigh Blake, P.E.
Manager, South Alabama Field Operations
Alabama Oil and Gas Board
(251) 626-8214 (Office)
(251) 525-3324 (Cell)

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, July 14, 2025 8:36 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: RE: OGB-27 Report

I have asked Alan Grieg to calculate the spill volume.

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Thursday, July 10, 2025 4:29 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: Re: OGB-27 Report

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Where is the spill volume calculations?

> On Jun 25, 2025, at 9:28 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:
>
> Good Morning Leigh,
>
> Please find attached for your review and records the OGB-27 Report for the 4-inch produced water line repair. The pipeline had three leaks that were repaired by clamps. There was a mystery sheen that was investigated on Friday that was determined to be not from the pipeline. The pipeline was pressure tested

on Saturday to 1.25x Operating pressure for a period of 2 hours and has been holding steady at over 500psi while production has been stabilizing.

This makes the fourth clamp repair in total on this pipeline. As part of permanent solutions, W&T Offshore, Inc. is currently investigating rerouting of the produced water system by utilizing other lines in the area.

Should you have any questions regarding the attached please advise.

Sincerely,

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Leigh Blake, P.E.
Manager, South Alabama Field Operations
Alabama Oil and Gas Board
(251) 626-8214 (Office)
(251) 525-3324 (Cell)

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, July 14, 2025 8:36 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: RE: OGB-27 Report

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Kendra Sullivan
Sr. Staff Regulatory Analyst
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ksullivan@wtoffshore.com | www.wtoffshore.com
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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Thursday, July 10, 2025 4:29 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: Re: OGB-27 Report

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Should you have any questions regarding the attached please advise.

Sincerely,

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd. Suite 700 Houston, TX 77057-5734

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Steve Carlson

From: Brent Jean <bjean@wtoffshore.com>
Sent: Wednesday, August 13, 2025 3:20 PM
To: Alan Greig, Jr.
Cc: Steve Carlson
Subject: [EXTERNAL] RE: 4" Liquid Pipeline Leak

Steve what exactly are you looking for?

The leak size was ¼" hole at the 6 o'clock on the 4" pipe.

The depth of the pipe was 8' and 14' below mud line.

Brent Jean
Senior Project Manager
(713) 297-8018 (Direct) 337-298-8821 (Cell)
bjean@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 7 Housto , T 77057-582
00 n X 1

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From: Alan Greig, Jr. <agreig@wtoffshore.com>
Sent: Wednesday, August 13, 2025 10:10 AM
To: Brent Jean <bjean@wtoffshore.com>
Cc: P. E. Steve Carlson (steve.carlson@wsnelson.com) <steve.carlson@wsnelson.com>
Subject: FW: 4" Liquid Pipeline Leak

Brent,

Please provide Steve with the below information for the last pipeline leak in July.

Alan Greig, Jr.
Facilities Engineer Manager
(713) 297-8014 (Direct) +1 281 813 8341 (Cell)
agreig@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 7 Housto , T 77057-578
00 n X 9

W&T OFFSHORE

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From: Steve Carlson <Steve.Carlson@wsnelson.com>
Sent: Tuesday, August 12, 2025 11:00 AM
To: Alan Greig, Jr. <agreig@wtoffshore.com>
Subject: RE: 4" Liquid Pipeline Leak

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Tuesday, October 14, 2025 3:36 PM
To: Leigh Blake; Clayton Campbell
Cc: Butch Gregory; Marvin Rogers; John C. Poole; Eric Harbison; Benjamin Reed; Alan Greig, Jr.; Ryan Duhon, P.E.; David Dean
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Hi Leigh,

I was able to speak with WS Nelson regarding the June spill calculation volume and received a more detailed explanation for their calculations yesterday.

The reason for the low volume of the leak is the 2 hour duration and the hole size of 0.125" diameter. To compare, the 0.25" hole from the July leak had 4 times the area. WS Nelson even added an additional 3 hour interval into their calculations for an extended sample spill volume which amounted to only 22 bbls.

If you are okay with this explanation, I will finish pulling together the revised OGB-27 with all of the additional details as discussed this week.

Sincerely,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Tuesday, October 14, 2025 3:02 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Clayton Campbell <CCampbell@ogb.state.al.us>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Hi Kendra,
Just checking in on the revised OGB-26 forms. Please provide update.
Thanks,
Leigh

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Thursday, September 18, 2025 1:28 PM

To: Clayton Campbell <CCampbell@ogb.state.al.us>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Clayton,

Thank you for taking my call earlier today. As per our discussion, I will correct the OGB-27 reports to reflect produced liquids and uncheck the box for material contained on location. I am pulling the latest water sample of the produced water pipeline to show a breakdown of percentage of condensate/water coming into the OTF plant.

As soon as we have confirmed/corrected the spill calculations for the June 12th spill, I will attach to this email chain the updated OGB-27 reports.

Should you need anything else please let us know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Clayton Campbell <CCampbell@ogb.state.al.us>
Sent: Thursday, September 18, 2025 9:05 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Kendra,

These OGB 27's have been rejected. Our records indicate that these lines are carrying fluids not identified as "produced water". According to pipeline maps provided to AOGB by W&T and previous operators of these assets, these lines carry additional designations suggesting they are carrying oil/condensate/chemical in addition to produced water. Additionally, intake separators and tanks at the pipeline terminations located at OTF currently hold fluid not identified as water. W&T has the ability to track fluid volumes other than water in the OTF control room. Please indicate correctly on the OGB 27's all fluid types that are being transported in the pipelines. As well, indicate the spilled volume of each type of fluid.

The volume reported for the 6/12 spill appears to be incorrect. I believe Leigh has spoken to you regarding this volume.

On both forms you have the box checked for "Material contained on location". If the material was contained on location, it should be recovered and properly disposed of. AOGB will need trucking manifest's and disposal receipts if W&T is going to claim the material was contained on location.

Please call if you have any questions.

Thank you

Clayton Campbell
Petroleum Engineering Specialist, Sr.
28810 Hwy 98
Daphne, Alabama 36526
w. 251.626.8214
c. 251.525.3325
ccampbell@ogb.state.al.us

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, September 15, 2025 10:15 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Leigh,

Please find attached the revised OGB-27 Reports with the calculated spill volumes for each event in the report and the calculation methodology.

Should you need anything else for these two spills please let us know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Monday, September 15, 2025 10:04 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>;

Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: Re: 4" Produced Liquids OGB-27 Reports and Production Loss

Was there a revised OGB-27 filled with the spill volume? Please advise.

> On Aug 6, 2025, at 8:48 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:
>
> Leigh,
>
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> ksullivan@wtoffshore.com | www.wtoffshore.com
> 5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784
>
> ***A U.S. Company safely supplying energy for its Country***
>
> **From:** Leigh Blake <LBlake@ogb.state.al.us>
> **Sent:** Wednesday, August 6, 2025 7:14 AM
> **To:** Kendra Sullivan <ksullivan@wtoffshore.com>
> **Cc:** Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>
> **Subject:** 4" Produced Liquids OGB-27 Reports and Production Loss
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> Alabama Oil and Gas Board

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OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

JUNE 12, 2025

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Reference Permit 3614-05-14
Permit Number (If applicable)

01- - - -
API Number (If applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 06/23/2025

Address 5718 Westheimer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name 4-inch PW Pipeline Originating MB-112-B Deck 2. County Mobile-OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27) 30.260933 Longitude (NAD27) 88.070600

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 6-12-2025

Time: 3:21 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 6-12-2025 Time: 6:32 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred:

Material spilled: produced liquids

Estimated volume of spill or leak: 10 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Material was spilled into water but did not contain hydrocarbon material that could be recovered

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: Alabama Public Service Commission Contact Person: Shawn Emmons

Agency: Contact Person:

CAUSE AND ACTIONS

Circumstances causing the incident: Pin hole leaks on the 6 o'clock position on the pipeline

Measures taken to control fire, spill, leak or blow out: Clamps were utilized to repair pipeline

Measures taken to clean up:

Measures taken to prevent reoccurrence of this incident: W&T is looking to reroute the produced water system and ILI

Date that cleanup operations completed (If completed): 6-22-2025

Remarks:

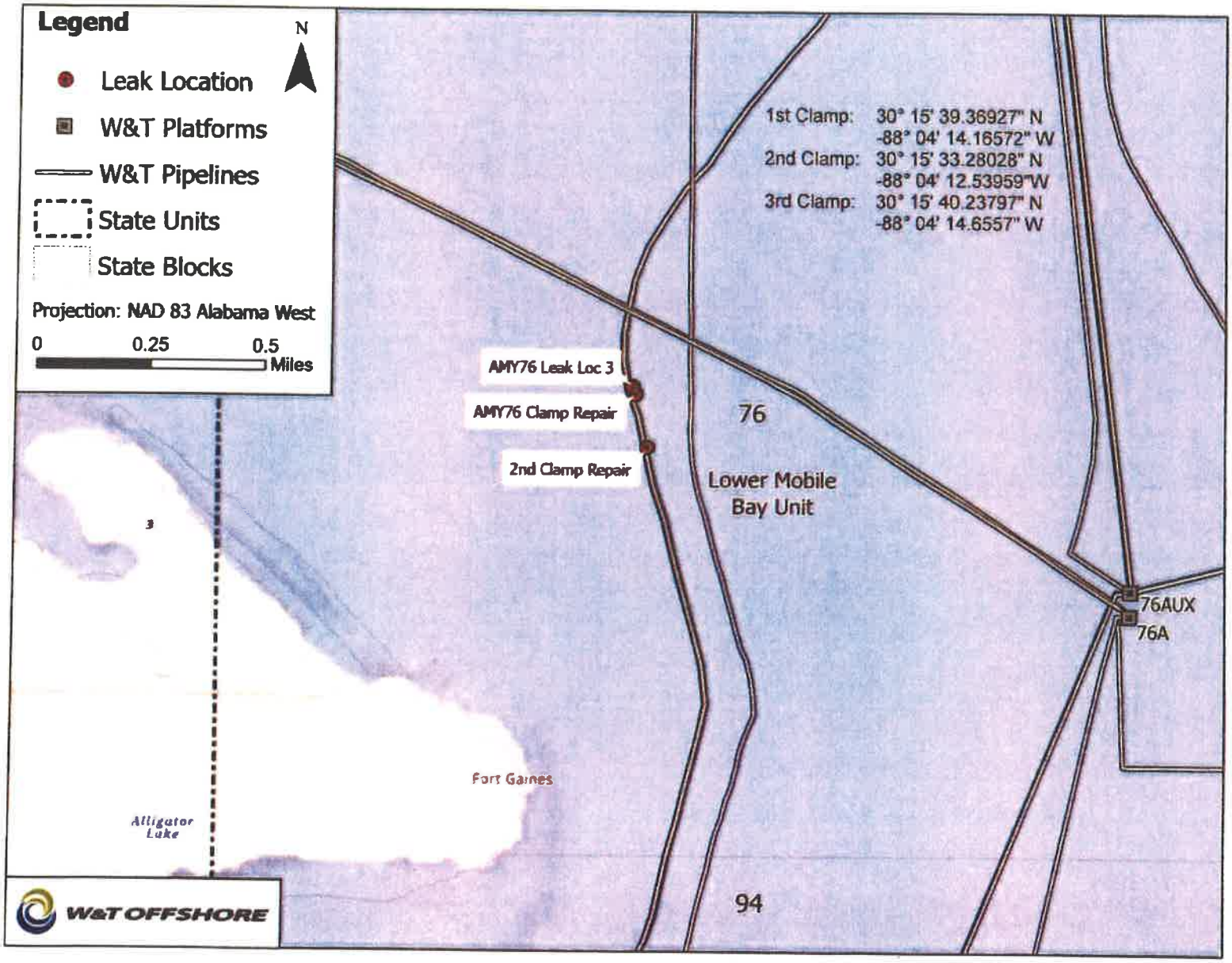
RECEIVED
AOGB MOBILE
11/10/25

* Omit for gathering lines

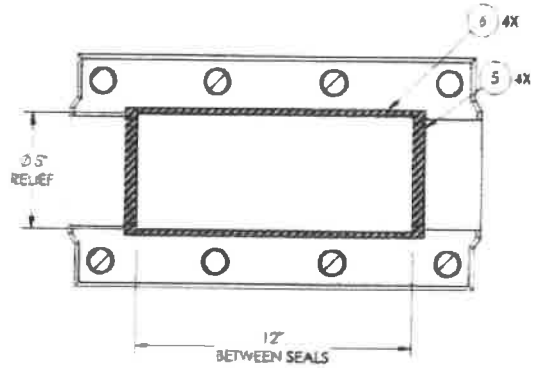
I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

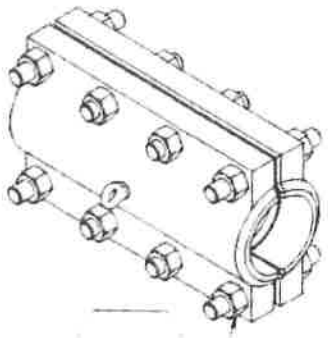
6/25/2025
Date

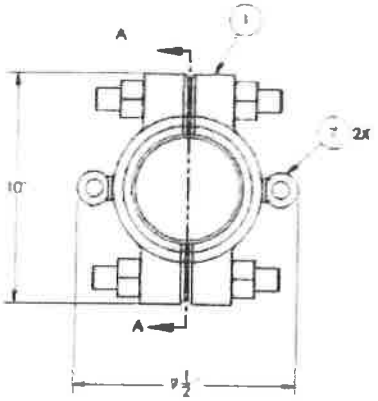

Legend
N
Leak Location
W&T Platforms
W&T Pipelines
State Units
State Blocks
Projection: NAD 83 Alabama West
0
0.25
0.5
Miles
1st Clamp: 30° 15' 39.36927" N
-88° 04' 14.16572" W
2nd Clamp: 30° 15' 33.28028" N
-88° 04' 12.53959"W
3rd Clamp: 30° 15' 40.23797" N
-88° 04' 14.6557" W
AMY76 Leak Loc 3
AMY76 Clamp Repair
2nd Clamp Repair
76
Lower Mobile
Bay Unit
76AUX
76A
Fort Gaines
Alligator
Lake
94
W&T OFFSHORE

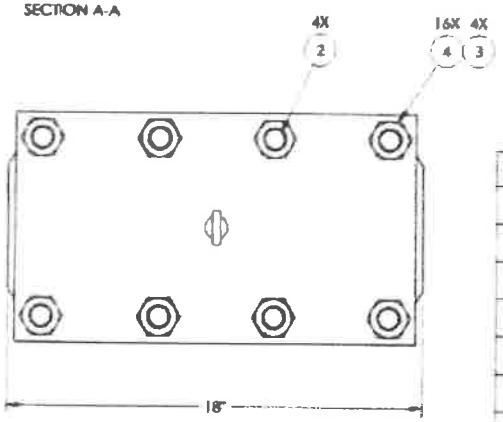
NOTES:
1.) HYDROSTATIC TEST PRESSURE: 1.5x MAOP
2.)RESIDUAL TORQUE VALUE WITH LIGHT MACHINE OIL = 233 ft-lbs.



SECTION A-A







ITEM NO.	MATERIAL	DESCRIPTION	QTY
1	SA-350-GR.LF2 CL.1	4" x 18" LG. SPLIT+SLEEVE. 1500 PSI MAOP	1
2	SA-193-GR.B7	1" - 8 x 7" LG. THREADED STUD	4
3	SA-193-GR.B7	1" - 8 x 8" LG. THREADED STUD	4
4	SA-194-GR.2H	1" - 8 HEAVY HEX NUT	16
5		1/2" x 5/8" CIRCUMFERENTIAL PACKING	4
6		1/4" x 3/8" LONGITUDINAL PACKING	4
7	AISI 1035	PAD EYE #2	2

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE PIPE LINE DEVELOPMENT COMPANY/PUDCO INTERNATIONAL INC. ANY REPRODUCTION, DISCLOSURE, OR USE OF ITS CONTENTS OR ANY PART THEREOF IS EXPRESSLY PROHIBITED EXCEPT AS THE PIPE LINE DEVELOPMENT COMPANY/PUDCO INTERNATIONAL INC. OTHERWISE MAY AGREE IN WRITING

MATERIAL	
WEIGHT	148 LBS. TOTAL
DESIGN CODE	ASME SECTION VIII, DIV. 2 API 6H
SCALE	DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

PUDCO THE PIPE LINE DEVELOPMENT CO STRONGSVILLE, OHIO

4" x 18" LG.
PUDCO SPLIT+SLEEVE
1500 PSI MAOP

DESIGN A. NASER
DRAWN
CHECKED
DATE 11/21/2022

SIZE	DRAWING NUMBER	SHEET	LEVEL
B	10851-CF	1 of 1	A

PLIDCO®
11792 Alameda Drive Strongsville, OH 44149 USA ·
THE PIPE LINE DEVELOPMENT COMPANY
440-871-5700 · plidco.com · pipeline@plidco.com

Declaration of Compliance

This certifies that the product(s) shipped meets the design, fabrication, and testing requirements of the PLIDCO quality management system. The product(s) meet the requirements of ASME PCC-2. Test certification prepared in accordance with ISO 10474:2013 type 3.1

Product Identification

Product Description	Serial Number	Shell Heat Number
Part Number: SS-4Nx18-1500-VB Split+Sleeve Pipe: 4" NPS MAOP: 1500 PSI Between Seals: 12" Seals: Viton B / FKM Temperature Range: -18°F To 250°F Design Code: ASME Section VIII, Div. 2; API 6H Features: Seal GirderRings Attachments: N/A	6776204	DM837

Approved by,
PLIDCO Quality Assurance
Michael Mindyas

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

PRODUCT INFORMATION

Job #	Piece #	Heat/Ingot #	Ingot Size	Ingot Weight (LBS)	Product Size	Weight (LBS)
UA1549	01	DM837-2	40L	39,660	7.13" X 80.13" X 144.75"	23411.00

LADLE CHEMICAL ANALYSIS EQS

Chemistry Analysis performed per ASTM E415 by Ellwood Quality Steel, an ISO 9001-2015 company (not Nadcap accredited), 700 Moravia Street, New Castle, PA 16101

	Composition (wt%)												
Heat No.	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	As
DM837	.18	.87	.011	.006	.17	.38	.18	.10	.028	.16	.023	.001	.006
	Sn	Co	W	Pb	B	Sb	Nb	Ca	Zn	Zr	N	Hppm	
	.009	.011	.009	.0010	.0003	.001	.015	.0009	<.001	.001	.0122	1.2	

PLIDCO
QC
APPROVED

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

ROOM TEMPERATURE TENSILE

Test Diameter: 0.505 Specification: ASTM A370

Piece No.	Location	Orientation	Tensile Strength (psi)	0.2% Offset Yield Strength (psi)	0.02% Offset Yield Strength (psi)	0.01% Offset Yield Strength (psi)	4D Elongation (%)	Reduction of Area (%)
01	TOP	LONGIT TENSILE T	73,144	45,681			35	70

SURFACE HARDNESS

Piece No.	Scale	Specification	Results (HBW)
01		a956	130, 127, 134

CHARPY V-NOTCH IMPACT TOUGHNESS

Test Size: 10mm X 10mm Specification: ASTM A370 Striker: 8mm

Piece No.	Location	Orientation	Test Temperature (°F)	Absorbed Energy (ft-lbs)	Shear (%)	Lateral Expansion (mils)	Avg. Absorbed Energy (ft-lbs)
01	TOP	LONGITUDINAL IMPACT	-50	57, 48, 61			

ULTRASONIC INSPECTION RESULTS

Piece No.	Test Date	Inspector and Title	Specification	Standard	Acceptance Criteria	Procedure	Quantity Accepted
01	12/14/2023	JOHN BIRTALAN - NAS 410 / SNT-TC-1A Level II	ASTM A388 19	ASTM A388	1/4 EFBH	ECF-SI-ESS-01-UT	1

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Certification Clerk

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MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

General Comments:

Ellwood City Forge Group is an AS9100:2016 & ISO 9001:2015 certified company registered by ABS Quality Evaluations, Inc. (Certificate #59175).

The Ellwood City Forge Group Materials Testing Lab is ISO 17025:2017 accredited in Mechanical Testing by A2LA (Certificate #3143.01).

The Ellwood City Forge Group Materials Testing Lab is Nadcap accredited for the following test methods: Room Temperature Tensile (test code A), Charpy Impact (test code N), Metallography (test codes L0, L11, L12, XL), Brinell Hardness (test code M1), Test Specimen Preparation (test code Z), and Lab Specimen Heat Treat (test code XG).

During the manufacturing process, examinations, and testing, the material has not come into contact with Mercury, any compound containing Mercury, or with Mercury-containing devices that do not employ secondary containment.

No welding was performed on this material.

Hot forging practice: Open die

RADIOACTIVE FREE MATERIAL

MELTED AND MANUFACTURED IN USA

FORGED TO ACHIEVE A MINIMUM FORGE REDUCTION OF 3:1

MATERIAL SURFACES MILLED TO 500 RMS FINISH

VACCUM DEGASSED, FULLY KILLED FINE GRAIN PRACTICE - CALCIUM TREATED

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Alexandra Dunn

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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CERTIFICATION OF COMPLIANCE

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

Parts supplied on Ellwood Specialty Steel Purchase Order number 229374
UA1549 01

This is to certify that the parts supplied have been manufactured, processed, inspected, and tested in accordance with all requirements of the purchase order and any required specifications. Inspection and test results signify that the parts delivered are in conformance to all purchase order requirements.

PLIDCO
QC
APPROVED

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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ELLWOOD City Forge Group

Ellwood City Forge Group
P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166 Fax: 724-752-3449
www.ellwoodcityforge.com

Date: 12/14/2023

Ultrasonic Report

Customer:	Ellwood Specialty Steel	Test Date:	Dec 14 2023 8:32AM
P.O. No.:	229374	Standard:	ASTM A388 REV. 19
Drawing No.:	7" X 80" X 10' - 12' (OK LONG)	Acceptance Criteria:	1/4 EFBH
Grade:	LF2	Procedure:	ECF-SI-ESS-01-UT REV. 1
Description:	FORGED BLOCK 7X80	Inspected By:	JOHN BIRTALAN
Job No.:	UA1549	Inspector Title:	NAS 410 / SNT-TC-1A Level II
Suffix:	01		
Heat No.:	DM837-2		

Instrument:	Olympus Epoch 650			Serial No.:	180574503
Transducer:	Olympus CNZR-24				
Technique:	Contact			Type:	Ceramic
Wave Mode:	Longitudinal	MHz:	2	Size:	24mm
Calibration Method:	DGS				
Reflector Size:	1/4" EFBH				
Couplant:	GEL			RMS:	250

Quantity Inspected:	1	Quantity Accepted:	1	Quantity Rejected:	0

Remarks:

NO RECORDABLE INDS.

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Inspected by JOHN BIRTALAN
NAS 410 / SNT-TC-1A Level II

PLIDCO QC APPROVED

PLIDCO®

THE PIPE LINE DEVELOPMENT COMPANY

Hydrostatic Test Report with Chart

Date Issued	March 7,2016
Revision Date	3/1/2022
Revision #	13
Effective Date	3/5/2022

Form Number: QMF-44

Serial #: 6776204 Job #: 67762 Product: Split+Sleeve

Fitting Diameter(s): 4 Units in Fitting Length: 18 Units in

Vent(s) Size: N/A Quantity: N/A "A" half N/A "B" half

Test Piece Type: 1- piece Test Piece(s) #: 843

Maximum Allowable Operating Pressure (MAOP): 1500 PSI

Power + Grip Test Type: N/A

Required Test Duration: 0:02:00 hr : min : sec

Calculated Min Test Pressure: 2250 PSI

Calculated Max Test Pressure: 2700 PSI

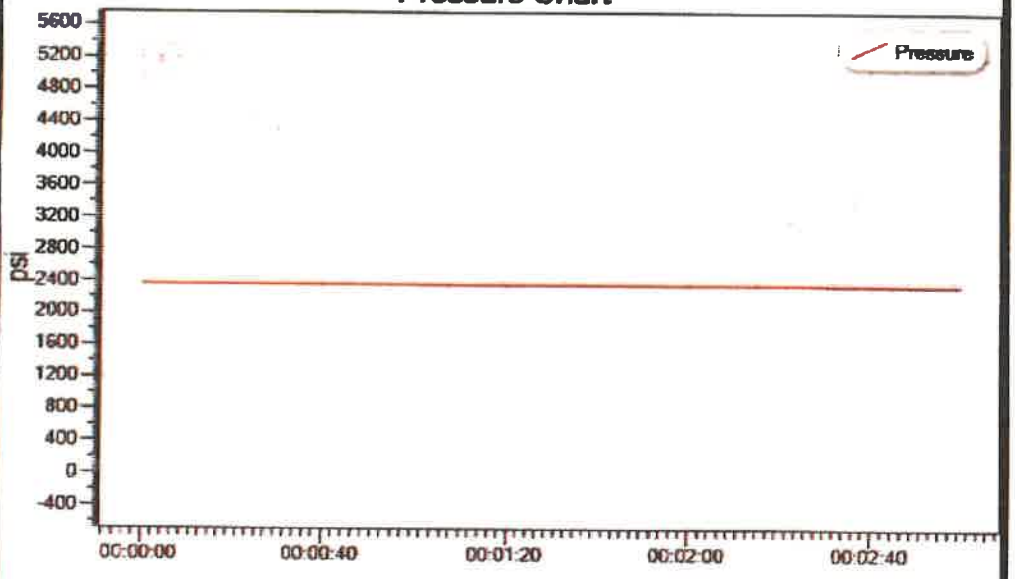
Actual Test Duration: 0:03:00 hr : min : sec

Gauge Information	
Model	Additel680
SN	21818190039
Range	(0-15000)PSI
Unit	psi

Record Information	
Start Time	09/23/2024 14:28:13
End Time	09/23/2024 14:31:13
Max Value	2358
Min Value	2354
Avg Value	2356
Pressure Differential	4
Test Number	1

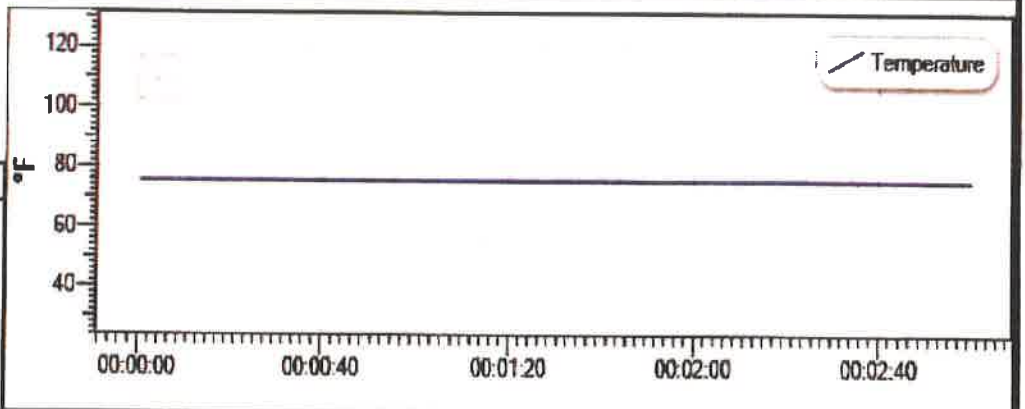
PASS

Pressure Chart



X No visible leakage or permanent material deformation.

Remarks:



Tester/Inspector Signature: Jose Rios Date: 09/23/2024

PLIDCO QC APPROVED

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS
TX Reg. # F-000059

Pipeline Leak Estimate
MB 112-B Produced Water Line
June 2025

Document Number:	20250524-03-STUDY-P-001
Client Name:	W&T Offshore
Project Title:	MB 112-B
Job Number:	20250524-04

A	9/3/2025	Issued for Review	SWC	TH		
REV	DATE	DESCRIPTION	ORIG	APPROVALS		
APPROVED BY: DATE:			COMPANY APPROVAL: DATE:			

TABLE OF CONTENTS

1. PURPOSE
2. REFERENCES
3. NOTES
4. SUMMARY CALCULATIONS
5. CONCLUSIONS
6. DETAILED CALCULATIONS

1. PURPOSE

This calculation estimates the leak rate for the hole in the 4" MB 112-B produced water pipeline that occurred June 12, 2025.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B.R., Young, D.F, and Okiishi, T. H. 1998, 3ed.

3. NOTES

W&T advised the following

The operator noticed the leak at 1:30 am on June 12, 2025.
Field was shut in at 3:30 am on June 12, 2025
The leak occurred at a depth of 12 feet of water
The estimated hole size is 3mm (1/8")

The accuracy of the estimated volume is ± 20%.

4. SUMMARY CALCULATIONS

The pressure trend provided by W&T was used to determine the average pressure in the pipeline for the duration of the leak. The duration of the leak was from 1:30 AM to 3:30 AM on June 12. The duration of the leak was broken into two segments based on the pressure trend.

The average pressure for each segment was used to estimate the amount of the leak during that time period and then the total amount was determined by summing the amount form each segment.

	Time	Pressure, psig	Volume Leaked, bbl
Period 1	6/12/25 1:30	188	5.5
	6/12/25 2:30	188	
Period 2	6/12/25 2:30	188	4.2
	6/12/25 3:30	33	
		Total Amount Leaked	10

5. CONCLUSIONS

The duration of the leak was 2 hours.

The estimated amount leaked is 10 bbls.

Client	W&T Offshore	Project No.	20250524-04
Project	MB 112-B	Rev.	A
Calculation Title	Pipeline Leak Estimate MB 112-B Produced Water Line June	By	SWC
Calculation No.	20250524-03-STUDY-P-001	Checked	TH
		Date	9/3/2025

6. DETAILED CALCULATIONS

W&T provided the pressure trends for the MB112-B water pipeline.

Based on the pressure trend, the leak is broken into two sections. The first is a constant pressure section and the second is a pressure decline section. Each section has a 1 hour duration.

Section 1
This pressure in the first sections is approximated based on the trend chart.

Pipeline Pressure = 188 psig = 1,296,222 Pa

Duration = 1 hrs

Section 2
This pressure in the second section is from the average pressure.

Initial Pipeline Pressure = 188 psig
Final Pipeline Pressure = 33 psig

Average Pipeline Pressure = 110.5 psig = 761,875 Pa

Duration = 1 hrs

The average pressure is used with the following formula to estimate the leaked amount.

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m³/s
C = coefficient of discharge, 0.62
A = Area of the hole, m²
ΔP = pressure differential, Pa
ρ = liquid density, kg/m³

C = 0.62
D = 0.125 in = 0.003175 m
A = 7.92E-06 m²
ρ = 1,030 kg / m³ (for produced water)

P at 12' = 5.4 psig = 37,232 Pa (water pressure)

Section 1
ΔP = 1,258,990 Pa

Q = 0.00024 m³/s = 0.87 m³/h = 5.5 bbl / h Total volume = 5.5 bbls

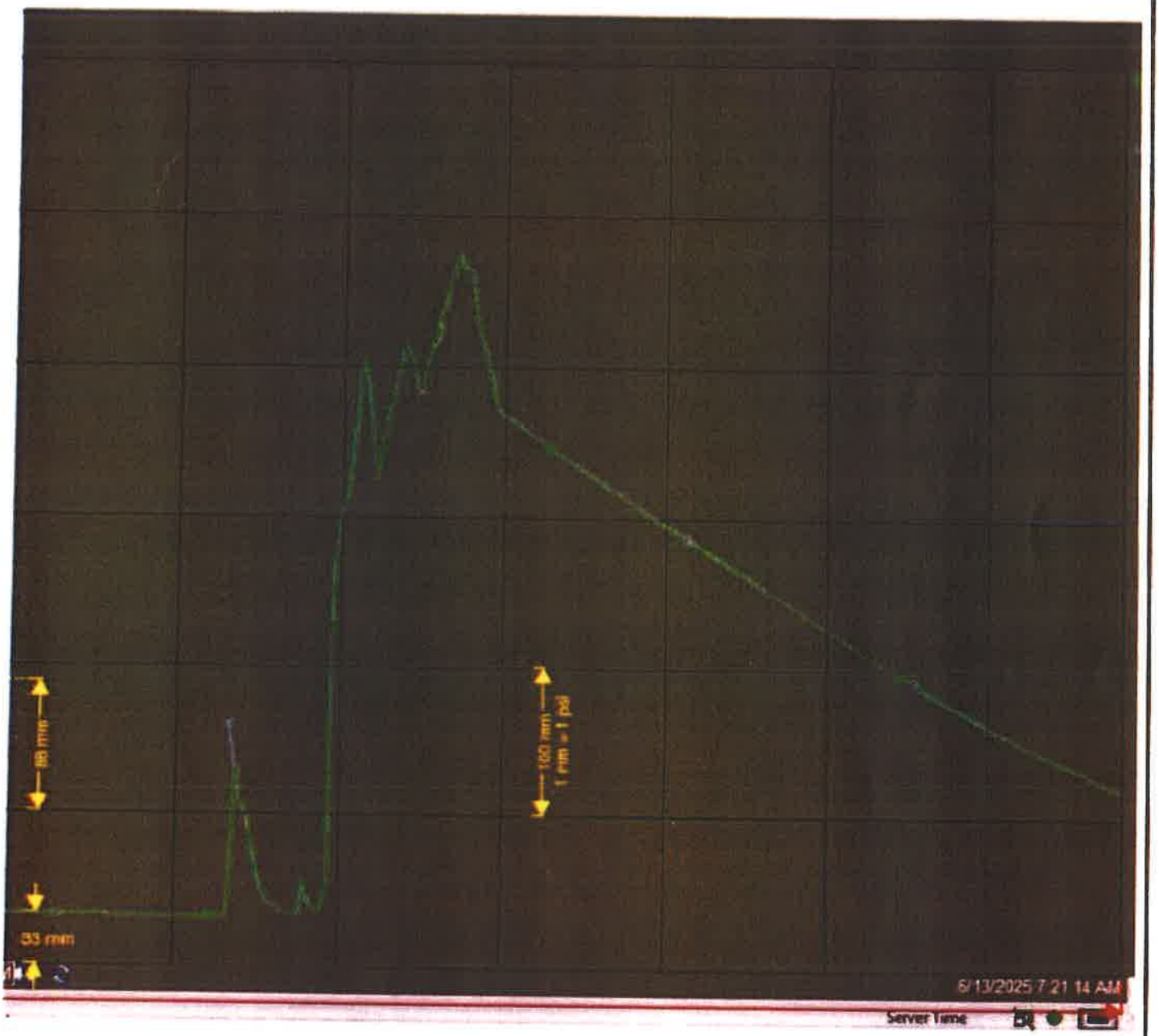
Section 2
ΔP = 724,643 Pa

Q = 0.00018 m³/s = 0.66 m³/h = 4.2 bbl / h Total volume = 4.2 bbls

Total amount of leak = 9.7 bbls

ATIONS

Project No.	20250524-04
Rev.	A
By	SWC
Checked	TH
Date	9/3/2025



STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (If applicable): _____

API Number (If applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 06/23/2025

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: 4-inch PW Pipeline Originating MB-112-B Deck 2. County: Mobile-OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27): 30.26093 Longitude (NAD27): 88.07060

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 6-12-2025

Time: 3:21 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 6-12-2025 Time: 6:32 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: 10 bbls

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Pin hole leaks on the 6 o'clock position on the pipeline

Measures taken to control fire, spill, leak or blow out: Clamps were utilized to repair pipeline

Measures taken to clean up: _____

Measures taken to prevent reoccurrence of this incident: W&T is looking to reroute the produced water system and ILI

Date that cleanup operations completed (if completed): 6-22-2025

Remarks:

RECEIVED
AOGB MOBILE
9/15/25 via email

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

6/25/2025
Date

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

OGB-27

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (If applicable) _____ 01- _____ - _____ - _____ - _____
API Number (If applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 06/23/2025

Address 5718 Westhelmer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name 4-inch PW Pipeline Originating MB-112-B Deck 2. County Mobile-OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27) 30.260933 Longitude (NAD27) 88.070660

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 6-12-2025

Time: 3:21 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 6-12-2025 Time: 6:32 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Pin hole leaks on the 6 o'clock position on the pipeline

Measures taken to control fire, spill, leak or blow out: Clamps were utilized to repair pipeline

Measures taken to clean up: _____

Measures taken to prevent reoccurrence of this incident: W&T is looking to reroute the produced water system and ILI

Date that cleanup operations completed (if completed): 6-22-2025

Remarks:

RECEIVED
AOGB MOBILE
6/25/25 via email

* Omit for gathering lines

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Signature of Operator's Agent

6/25/2025
Date

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable) _____

01 - _____ - _____ - _____
API Number (if applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 06/23/2025

Address 5718 Westheimer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name MB-112-B Deck 4-inch departing pipeline 2. County Mobile-OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27) 30.26093 Longitude (NAD27) 88.07060

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 6-12-2025

Time: 3:21 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 6-12-2025 Time: 6:32 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: produced liquids

Estimated volume of spill or leak: 10 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Material was spilled into water but did not contain hydrocarbon material that could be recovered

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: Alabama Public Service Commission Contact Person: Shawn Emmons

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Pin hole leaks on the 6 o'clock position on the pipeline

Measures taken to control fire, spill, leak or blow out: Clamps were utilized to repair pipeline

Measures taken to clean up: _____

Measures taken to prevent reoccurrence of this incident: W&T is looking to reroute the produced water system and ILI

Date that cleanup operations completed (if completed): 6-22-2025

Remarks:

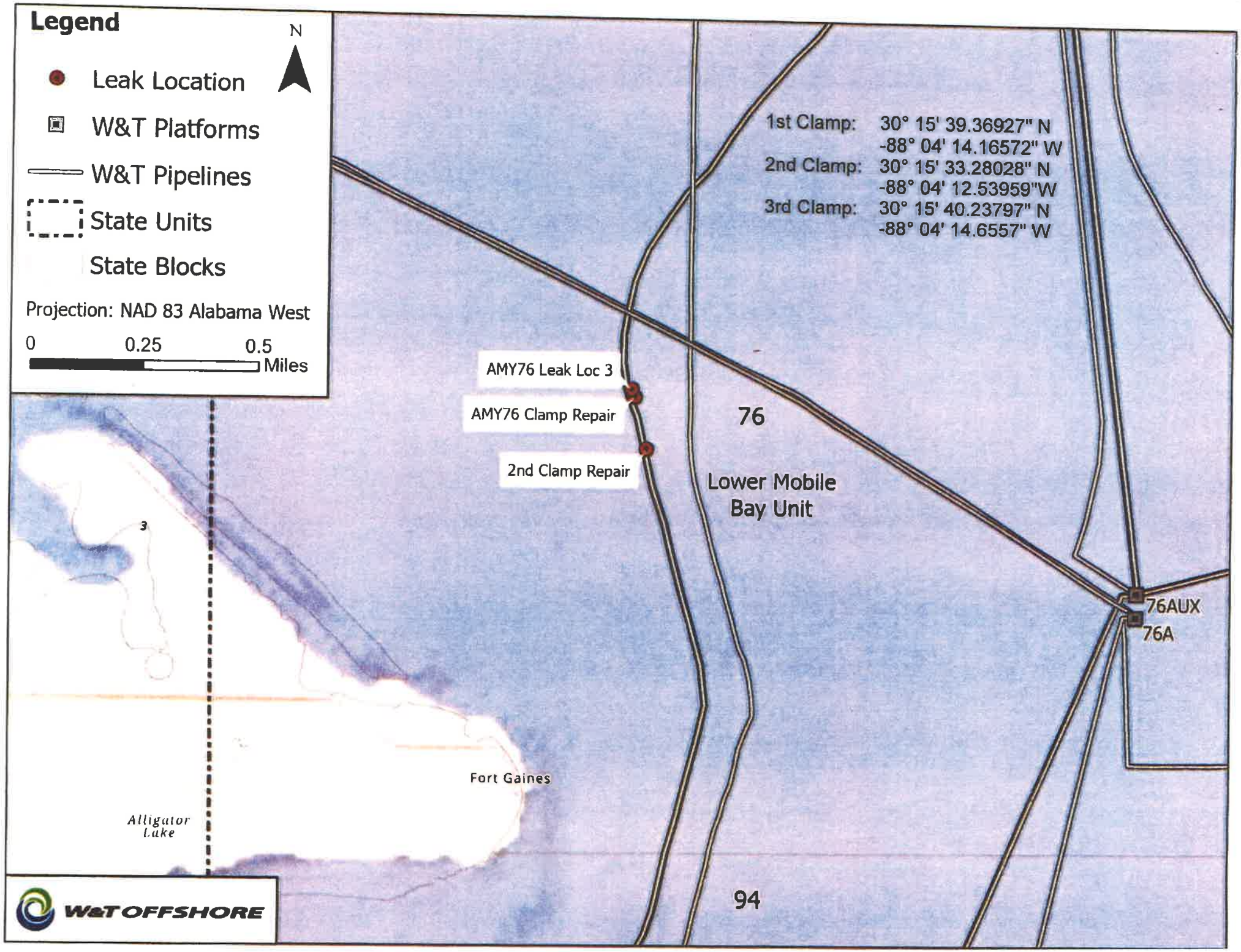
RECEIVED
AOGB MOBILE
12/3/2025

* Omit for gathering lines

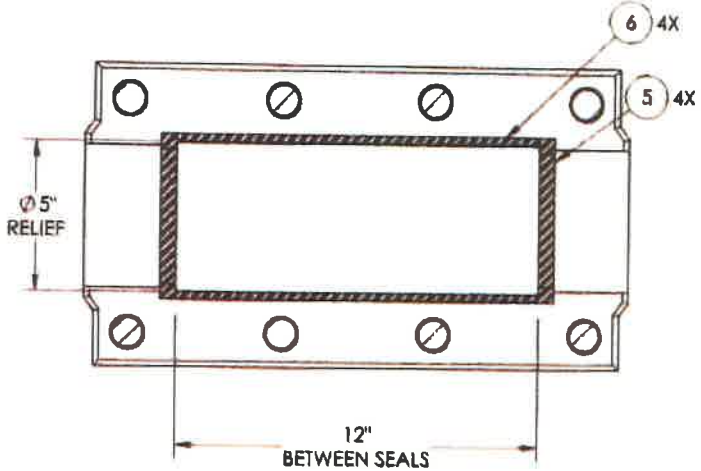
I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

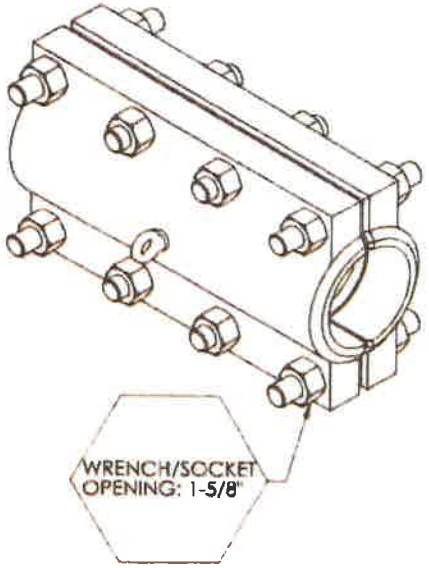
6/25/2025
Date

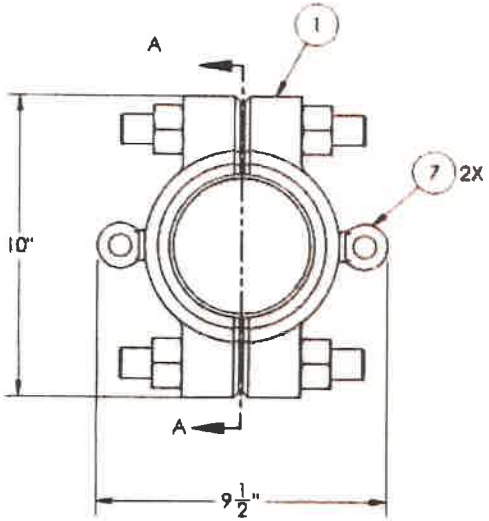

Legend
N
Leak Location
W&T Platforms
W&T Pipelines
State Units
State Blocks
Projection: NAD 83 Alabama West
0
0.25
0.5
Miles
1st Clamp: 30° 15' 39.36927" N
-88° 04' 14.16572" W
2nd Clamp: 30° 15' 33.28028" N
-88° 04' 12.53959"W
3rd Clamp: 30° 15' 40.23797" N
-88° 04' 14.6557" W
AMY76 Leak Loc 3
AMY76 Clamp Repair
2nd Clamp Repair
76
Lower Mobile
Bay Unit
76AUX
76A
3
Fort Gaines
Alligator
Lake
94
W&T OFFSHORE

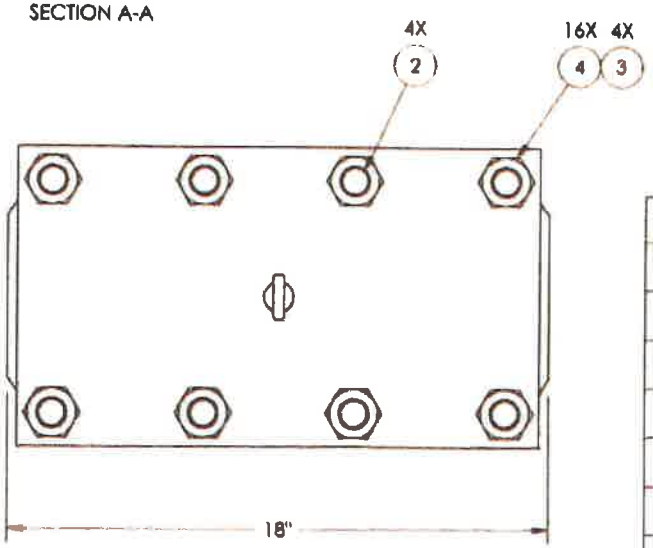
NOTES:
1.) HYDROSTATIC TEST PRESSURE:
1.5x MAOP
2.)RESIDUAL TORQUE VALUE WITH
LIGHT MACHINE OIL = 233 ft-lbs.



SECTION A-A







ITEM NO.	MATERIAL	DESCRIPTION	QTY.
1	SA-350-GR.LF2 CL.1	4" x 18" LG. SPLIT+SLEEVE, 1500 PSI MAOP	1
2	SA-193-GR.B7	1" - 8 x 7" LG. THREADED STUD	4
3	SA-193-GR.B7	1" - 8 x 8" LG. THREADED STUD	4
4	SA-194-GR.2H	1" - 8 HEAVY HEX NUT	16
5		1/2" x 5/8" CIRCUMFERENTIAL PACKING	4
6		1/4" x 3/8" LONGITUDINAL PACKING	4
7	AISI 1035	PAD EYE #2	2

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL, INC. ANY REPRODUCTION, DISCLOSURE, OR USE OF ITS CONTENTS OR ANY PART THEREOF IS EXPRESSLY PROHIBITED EXCEPT AS THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL, INC OTHERWISE MAY AGREE IN WRITING.

MATERIAL
WEIGHT 148 LBS. TOTAL
DESIGN CODE ASME SECTION VIII, DIV. 2 API 6H
SCALE
DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

PLIDCO THE PIPE LINE DEVELOPMENT CO. STRONGSVILLE, OHIO

TITLE
4" x 18" LG.
PLIDCO SPLIT+SLEEVE
1500 PSI MAOP

DRAWN A. NASER DATE 5/24/2022
APPROVED DATE

SIZE	DRAWING NUMBER	SHEET	LEVEL
B	10851-CF	1 of 1	A

PLIDCO®
11792 Alameda Drive Strongsville, OH 44149 USA
THE PIPE LINE DEVELOPMENT COMPANY
440-871-5700 · plidco.com · pipeline@plidco.com

Declaration of Compliance

This certifies that the product(s) shipped meets the design, fabrication, and testing requirements of the PLIDCO quality management system. The product(s) meet the requirements of ASME PCC-2. Test certification prepared in accordance with ISO 10474:2013 type 3.1

Product Identification

Product Description	Serial Number	Shell Heat Number
Part Number: SS-4Nx18-1500-VB Split+Sleeve Pipe: 4" NPS MAOP: 1500 PSI Between Seals: 12" Seals: Viton B / FKM Temperature Range: -18°F To 250°F Design Code: ASME Section VIII, Div. 2; API 6H Features: Seal GirderRings Attachments: N/A	6776204	DM837

Approved by,
PLIDCO Quality Assurance
Michael Mindyas

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

PRODUCT INFORMATION

Job #	Piece #	Heat/Ingot #	Ingot Size	Ingot Weight (LBS)	Product Size	Weight (LBS)
UA1549	01	DM837-2	40L	39,660	7.13" X 80.13" X 144.75"	23411.00

LADLE CHEMICAL ANALYSIS EQS

Chemistry Analysis performed per ASTM E415 by Ellwood Quality Steel, an ISO 9001-2015 company (not Nadcap accredited), 700 Moravia Street, New Castle, PA 16101

	Composition (wt%)												
Heat No.	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	As
DM837	.18	.87	.011	.006	.17	.38	.18	.10	.028	.16	.023	.001	.006
	Sn	Co	W	Pb	B	Sb	Nb	Ca	Zn	Zr	N	Hppm	
	.009	.011	.009	.0010	.0003	.001	.015	.0009	<.001	.001	.0122	1.2	

PLIDCO QC APPROVED

Alexandra Dunn

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE. THE DATA HEREIN REPRESENTS ONLY THE ITEM(S) TESTED. THE SIMPLE ACCEPTANCE AND REJECTION DECISION RULE IS EMPLOYED FOR ALL LABORATORY TEST RESULTS. THIS ECFG TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF ECFG.

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

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MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

ROOM TEMPERATURE TENSILE

Test Diameter: 0.505 Specification: ASTM A370

Piece No.	Location	Orientation	Tensile Strength (psi)	0.2% Offset Yield Strength (psi)	0.02% Offset Yield Strength (psi)	0.01% Offset Yield Strength (psi)	4D Elongation (%)	Reduction of Area (%)
01	TOP	LONGIT TENSILE T	73,144	45,681			35	70

SURFACE HARDNESS

Piece No.	Scale	Specification	Results (HBW)
01		a956	130, 127, 134

CHARPY V-NOTCH IMPACT TOUGHNESS

Test Size: 10mm X 10mm Specification: ASTM A370 Striker: 8mm

Piece No.	Location	Orientation	Test Temperature (°F)	Absorbed Energy (ft-lbs)	Shear (%)	Lateral Expansion (mils)	Avg. Absorbed Energy (ft-lbs)
01	TOP	LONGITUDINAL IMPACT	-50	57, 48, 61			

ULTRASONIC INSPECTION RESULTS

Piece No.	Test Date	Inspector and Title	Specification	Standard	Acceptance Criteria	Procedure	Quantity Accepted
01	12/14/2023	JOHN BIRTALAN - NAS 410 / SNT-TC-1A Level II	ASTM A388 19	ASTM A388	1/4 EFBH	ECF-SI-ESS-01-UT	1

PLIDCO —QC— APPROVED

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Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

ELLWOOD
City Forge Group

P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166

www.ellwoodcityforge.com

MATERIAL CERTIFICATION REPORT

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12" (OK LONG)
Description:	FORGED BLOCK 7X80		

General Comments:

Ellwood City Forge Group is an AS9100:2016 & ISO 9001:2015 certified company registered by ABS Quality Evaluations, Inc. (Certificate #59175).

The Ellwood City Forge Group Materials Testing Lab is ISO 17025:2017 accredited in Mechanical Testing by A2LA (Certificate #3143.01).

The Ellwood City Forge Group Materials Testing Lab is Nadcap accredited for the following test methods: Room Temperature Tensile (test code A), Charpy Impact (test code N), Metallography (test codes L0, L11, L12, XL), Brinell Hardness (test code M1), Test Specimen Preparation (test code Z), and Lab Specimen Heat Treat (test code XG).

During the manufacturing process, examinations, and testing, the material has not come into contact with Mercury, any compound containing Mercury, or with Mercury-containing devices that do not employ secondary containment.

No welding was performed on this material.

Hot forging practice: Open die

RADIOACTIVE FREE MATERIAL

MELTED AND MANUFACTURED IN USA

FORGED TO ACHIEVE A MINIMUM FORGE REDUCTION OF 3:1

MATERIAL SURFACES MILLED TO 500 RMS FINISH

VACCUM DEGASSED, FULLY KILLED FINE GRAIN PRACTICE - CALCIUM TREATED

PLIDCO
QC
APPROVED

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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City Forge Group

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Phone: 800-843-0166

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CERTIFICATION OF COMPLIANCE

Date:	12/14/2023	P.O. No.:	229374
Customer:	Ellwood Specialty Steel 499 Honeybee Lane New Castle, PA 16105	Part No.:	
		Job No.:	UA1549
		Piece No.:	01
Grade:	A350 LF2	Drawing No.:	7" X 80" X 10' - 12' (OK LONG)
Description:	FORGED BLOCK 7X80		

SPECIFICATIONS

Customer Spec	Customer Spec Rev	Customer Spec Date
ASME SA350 LF2 CLASS 1 ASME BPV 2021 EDITION.		
ASTM A350 LF2 CLASS 1 REV 18		

Parts supplied on Ellwood Specialty Steel Purchase Order number 229374
UA1549 01

This is to certify that the parts supplied have been manufactured, processed, inspected, and tested in accordance with all requirements of the purchase order and any required specifications. Inspection and test results signify that the parts delivered are in conformance to all purchase order requirements.

Michael Mindyas

PLIDCO QC APPROVED

Alexandra Dunn

Alexandra Dunn
Certification Clerk

Country of Origin: U.S.A.

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Ellwood City Forge Group
P.O. Box 31
Ellwood City, PA 16117
Phone: 800-843-0166 Fax: 724-752-3449
www.ellwoodcityforge.com

Date: 12/14/2023

Ultrasonic Report

Customer:	Ellwood Specialty Steel	Test Date:	Dec 14 2023 8:32AM
P.O. No.:	229374	Standard:	ASTM A388 REV. 19
Drawing No.:	7" X 80" X 10' - 12' (OK LONG)	Acceptance Criteria:	1/4 EFBH
Grade:	LF2	Procedure:	ECF-SI-ESS-01-UT REV. 1
Description:	FORGED BLOCK 7X80	Inspected By:	JOHN BIRTALAN
Job No.:	UA1549	Inspector Title:	NAS 410 / SNT-TC-1A Level II
Suffix:	01		
Heat No.:	DM837-2		

Instrument:	Olympus Epoch 650			Serial No.:	180574503
Transducer:	Olympus CN2R-24				
Technique:	Contact			Type:	Ceramic
Wave Mode:	Longitudinal	MHz:	2	Size:	24mm
Calibration Method:	DGS				
Reflector Size:	1/4" EFBH				
Couplant:	GEL			RMS:	250

Quantity Inspected:	1	Quantity Accepted:	1	Quantity Rejected:	0

Remarks:

NO RECORDABLE INDS.

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES. THIS EMP TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF EMP

Inspected by JOHN BIRTALAN
NAS 410 / SNT-TC-1A Level II

PLIDCO QC APPROVED

PLIDCO® THE PIPE LINE DEVELOPMENT COMPANY

Hydrostatic Test Report with Chart

Date Issued	March 7,2016
Revision Date	3/1/2022
Revision #	13
Effective Date	3/5/2022

Form Number: QMF-44

Serial #: 6776204 Job #: 67762 Product: Split+Sleeve

Fitting Diameter(s): 4 Units in Fitting Length: 18 Units in

Vent(s) Size: N/A Quantity: N/A "A" half N/A "B" half

Test Piece Type: 1- piece Test Piece(s) #: 843

Maximum Allowable Operating Pressure (MAOP): 1500 PSI

Power + Grip Test Type: N/A

Required Test Duration: 0:02:00 hr : min : sec

Calculated Min Test Pressure: 2250 PSI

Calculated Max Test Pressure: 2700 PSI

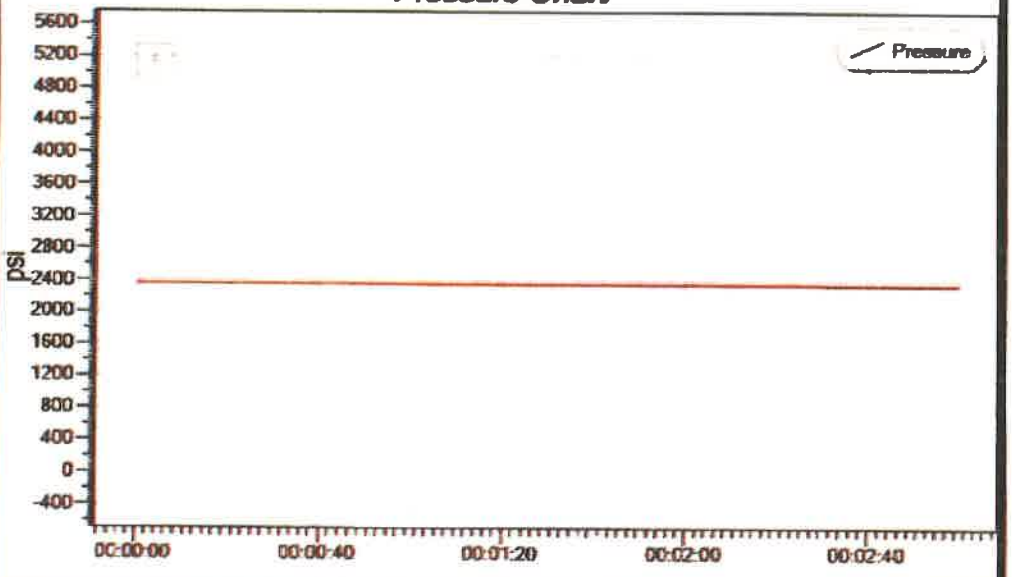
Actual Test Duration: 0:03:00 hr : min : sec

Gauge Information	
Model	Additel680
SN	21818190039
Range	(0-15000)PSI
Unit	psi

Record Information	
Start Time	09/23/2024 14:28:13
End Time	09/23/2024 14:31:13
Max Value	2358
Min Value	2354
Avg Value	2356
Pressure Differential	4
Test Number	1

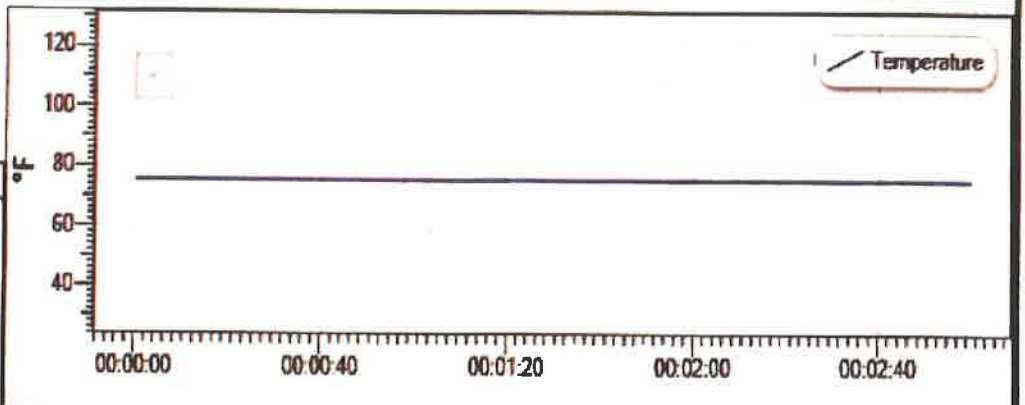
PASS

Pressure Chart



X No visible leakage or permanent material deformation.

Remarks:



Tester/Inspector Signature: Jose Rios Date: 09/23/2024

PLIDCO QC APPROVED

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS
TX Reg. # F-000059

Pipeline Leak Estimate
MB 112-B Produced Water Line
June 2025

Document Number:	20250524-03-STUDY-P-001
Client Name:	W&T Offshore
Project Title:	MB 112-B
Job Number:	20250524-04

A	9/3/2025	Issued for Review	SWC	TH		
REV	DATE	DESCRIPTION	ORIG	APPROVALS		
APPROVED BY: DATE:			COMPANY APPROVAL: DATE:			

TABLE OF CONTENTS

1. PURPOSE
2. REFERENCES
3. NOTES
4. SUMMARY CALCULATIONS
5. CONCLUSIONS
6. DETAILED CALCULATIONS

1. PURPOSE

This calculation estimates the leak rate for the hole in the 4" MB 112-B produced water pipeline that occurred June 12, 2025.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B.R., Young, D.F, and Okiishi, T. H. 1998, 3ed.

3. NOTES

W&T advised the following

The operator noticed the leak at 1:30 am on June 12, 2025.
Field was shut in at 3:30 am on June 12, 2025
The leak occurred at a depth of 12 feet of water
The estimated hole size is 3mm (1/8")

The accuracy of the estimated volume is ± 20%.

4. SUMMARY CALCULATIONS

The pressure trend provided by W&T was used to determine the average pressure in the pipeline for the duration of the leak. The duration of the leak was from 1:30 AM to 3:30 AM on June 12. The duration of the leak was broken into two segments based on the pressure trend.

The average pressure for each segment was used to estimate the amount of the leak during that time period and then the total amount was determined by summing the amount form each segment.

	Time	Pressure, psig	Volume Leaked, bbl
Period 1	6/12/25 1:30	188	5.5
	6/12/25 2:30	188	
Period 2	6/12/25 2:30	188	4.2
	6/12/25 3:30	33	
		Total Amount Leaked	10

5. CONCLUSIONS

The duration of the leak was 2 hours.

The estimated amount leaked is 10 bbls.

PROCESS CALCULATIONS			
Client	W&T Offshore	Project No.	20250524-04
Project	MB 112-B	Rev.	A
Calculation Title	Pipeline Leak Estimate MB 112-B Produced Water Line June	By	SWC
Calculation No.	20250524-03-STUDY-P-001	Checked	TH
		Date	9/3/2025

6. DETAILED CALCULATIONS

W&T provided the pressure trends for the MB112-B water pipeline.

Based on the pressure trend, the leak is broken into two sections. The first is a constant pressure section and the second is a pressure decline section. Each section has a 1 hour duration.

Section 1
This pressure in the first sections is approximated based on the trend chart.

Pipeline Pressure = 188 psig = 1,296,222 Pa

Duration = 1 hrs

Section 2
This pressure in the second section is from the average pressure.

Initial Pipeline Pressure = 188 psig
Final Pipeline Pressure = 33 psig

Average Pipeline Pressure = 110.5 psig = 761,875 Pa

Duration = 1 hrs

The average pressure is used with the following formula to estimate the leaked amount.

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m³/s
C = coefficient of discharge, 0.62
A = Area of the hole, m²
ΔP = pressure differential, Pa
ρ = liquid density, kg/m³

C = 0.62
D = 0.125 in = 0.003175 m
A = 7.92E-06 m²
ρ = 1,030 kg / m³ (for produced water)

P at 12' = 5.4 psig = 37,232 Pa (water pressure)

Section 1
ΔP = 1,258,990 Pa

Q = 0.00024 m³/s = 0.87 m³/h = 5.5 bbl / h Total volume = 5.5 bbls

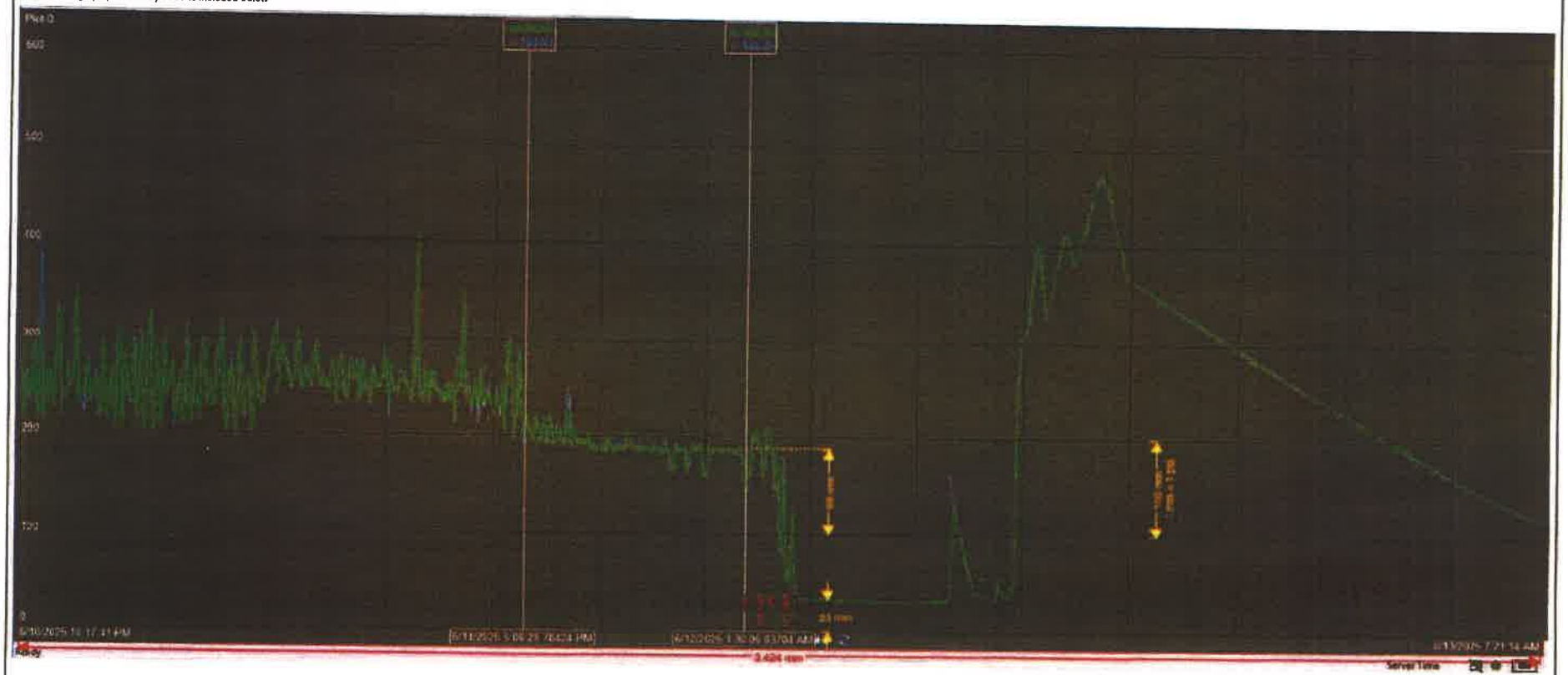
Section 2
ΔP = 724,643 Pa

Q = 0.00018 m³/s = 0.66 m³/h = 4.2 bbl / h Total volume = 4.2 bbls

Total amount of leak = 9.7 bbls

Nelson	Client W&T Offshore Project MB 112-B Calculation Title Pipeline Leak Estimate MB 112-B Produced Water Line June 2025 Calculation No. 20250524-01-STUDY-P-001	PROCESS CALCULATIONS	Project No. 20250524-01 Rev A By BWC Checked TH Date 6/3/2025

The pressure graph provided by W&T is included below



Marvin Rogers

From: Butch Gregory
Sent: Monday, September 22, 2025 10:30 AM
To: Marvin Rogers
Subject: FW: 4" Produced Liquids OGB-27 Reports and Production Loss

From: Clayton Campbell <CCampbell@ogb.state.al.us>
Sent: Thursday, September 18, 2025 9:05 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Kendra,

These OGB 27's have been rejected. Our records indicate that these lines are carrying fluids not identified as "produced water". According to pipeline maps provided to AOGB by W&T and previous operators of these assets, these lines carry additional designations suggesting they are carrying oil/condensate/chemical in addition to produced water. Additionally, intake separators and tanks at the pipeline terminations located at OTF currently hold fluid not identified as water. W&T has the ability to track fluid volumes other than water in the OTF control room. Please indicate correctly on the OGB 27's all fluid types that are being transported in the pipelines. As well, indicate the spilled volume of each type of fluid.

The volume reported for the 6/12 spill appears to be incorrect. I believe Leigh has spoken to you regarding this volume.

On both forms you have the box checked for "Material contained on location". If the material was contained on location, it should be recovered and properly disposed of. AOGB will need trucking manifest's and disposal receipts if W&T is going to claim the material was contained on location.

Please call if you have any questions.

Thank you

Clayton Campbell
Petroleum Engineering Specialist, Sr.
28810 Hwy 98
Daphne, Alabama 36526
w. 251.626.8214
c. 251.525.3325
ccampbell@ogb.state.al.us

Marvin Rogers

From: Marvin Rogers
Sent: Monday, July 14, 2025 9:51 AM
To: Nick Tew
Subject: FW: OGB-27 Report
Attachments: image001.png; 6-12-2025 Leak Report OGB-27 Report.pdf

Nick,
Leigh just sent this information about the pipeline.
I note that the leak occurred for ten days. W&T did not complete the line on the amount of the leak.
I assume that when Leigh says there will be a revised form that the form will include the amount of the leak.
Marvin

From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Monday, July 14, 2025 9:34 AM
To: Marvin Rogers <mrogers@ogb.state.al.us>; Ganiu Alabi <galabi@ogb.state.al.us>; Kirk McQuillan <kmcquillan@ogb.state.al.us>
Subject: Fwd: OGB-27 Report

see attached. I will update when revised.

Begin forwarded message:

> **From:** Kendra Sullivan <ksullivan@wtoffshore.com>
> **Date:** June 25, 2025 at 9:28:03 AM CDT
> **To:** Leigh Blake <LBlake@ogb.state.al.us>
> **Subject: OGB-27 Report**
>
> Good Morning Leigh,
>
> Please find attached for your review and records the OGB-27 Report for the 4-inch produced water line repair. The pipeline had three leaks that were repaired by clamps. There was a mystery sheen that was investigated on Friday that was determined to be not from the pipeline. The pipeline was pressure tested on Saturday to 1.25x Operating pressure for a period of 2 hours and has been holding steady at over 500psi while production has been stabilizing.
>
> This makes the fourth clamp repair in total on this pipeline. As part of permanent solutions, W&T Offshore, Inc. is currently investigating rerouting of the produced water system by utilizing other lines in the area.
>
> Should you have any questions regarding the attached please advise.
>
> Sincerely,
>
> Kendra Sullivan
> Sr. Staff Regulatory Analyst
> (713) 513-8629 (Direct) 346-316-5615 (Cell)
> ksullivan@wtoffshore.com | www.wtoffshore.com

Marvin Rogers

From: Leigh Blake
Sent: Monday, July 14, 2025 9:34 AM
To: Marvin Rogers; Ganiu Alabi; Kirk McQuillan
Subject: Fwd: OGB-27 Report
Attachments: image001.png; 6-12-2025 Leak Report OGB-27 Report.pdf

see attached. I will update when revised.

Begin forwarded message:

> **From:** Kendra Sullivan <ksullivan@wtoffshore.com>
> **Date:** June 25, 2025 at 9:28:03 AM CDT
> **To:** Leigh Blake <LBlake@ogb.state.al.us>
> **Subject: OGB-27 Report**
>
> Good Morning Leigh,
>
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>
> This makes the fourth clamp repair in total on this pipeline. As part of permanent solutions, W&T Offshore, Inc. is currently investigating rerouting of the produced water system by utilizing other lines in the area.
>
> Should you have any questions regarding the attached please advise.
>
> Sincerely,
>
> Kendra Sullivan
> Sr. Staff Regulatory Analyst
> (713) 513-8629 (Direct) 346-316-5615 (Cell)
> ksullivan@wtoffshore.com | www.wtoffshore.com
> 5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784
>
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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, June 16, 2025 2:32 PM
To: Leigh Blake
Subject: RE: 4" inch pipeline leak

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon Leigh,

We have patched the leak. While pressure testing the first leak spot a second pin hole leak was discovered. This is the current status as of this afternoon:

DSV is on location still uncovering the pipeline (currently 6' of cover)
Started jetting again at 0200hsr this morning/ Should have everything uncovered by 1000hrs
Ditch walls keep filling back in the ditch and having to use the air lift and hand jet (currently still jetting the hole larger to prevent the ditch from filling in)
Should have the jetting completed by 1600hrs
Clean the mastic from the pipeline and start the sleeve installation

I have asked for lat/long locations for both points to begin the OGB-27 form.

Sincerely,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5745
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-----Original Message-----
From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Monday, June 16, 2025 11:32 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: 4" inch pipeline leak

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Please provide update on pipeline leak.

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Wednesday, June 18, 2025 9:48 AM
To: Leigh Blake
Cc: Clayton Campbell; Joshua Young
Subject: W&T Offshore, Inc. Update

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning Leigh,

W&T Offshore, Inc. began pressuring the 4-inch produced water line last night and noted an incremental 14psi drop in pressure. It was assumed in part that it was bleed off from the valves, however; this morning when repressuring the line it was noted that bubbles were coming from 50' north of the first leak location on the pipeline. This will be the third leak on the pipeline. W&T will be installing a clamp on the pipeline of the third leak location.

I am preparing the OGB-27 Report to cover all the leaks discovered and fixed in the area. I am awaiting Lat/Long locations from the Dive Contractor to create an overview map of the leak locations.

W&T is now looking at reroute options using existing produced water lines through Mobile Bay. Field personnel are currently inspecting check and pressure valves to see if this is a viable option. Also, we are looking into permanent repair options for the produced water line as well.

The Daniels Meter at 112-B Deck has been installed as of Monday June 16th. As I understand, our measurement tech and AOGB inspectors have agreed to send in the calibration paperwork from 112-B for now and reschedule in person calibration for the first week of July 2025.

The last item is with all of the repair work ongoing and meter installation, we respectfully request if the 112-1 and 114-2 KX Valve inspections could be pushed to the first week of July 2025.

Should you have any questions regarding the above information please advise.

Sincerely,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Saturday, June 21, 2025 5:19 PM
To: Emmons, Shawn; Kimbril, Jonathan; Leigh Blake; Cochran, Brett; Childs, Kyle
Subject: Re: NRC Report

Good Afternoon Shawn,

I have checked with the dive vessel crew, field personnel and our project manager. There is dredging work out in the area near that location and we had run the line while pressure testing. When initially reported to the Coast Guard, they reached out and we let them know we were pressure testing pipelines in Mobile Bay. We did not receive coordinates at that time, but looking at the location and after speaking with everyone this is not associate with our pipelines.

Sincerely,

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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From: Emmons, Shawn <shawn.emmons@psc.alabama.gov>
Sent: Saturday, June 21, 2025 4:40:36 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Kimbril, Jonathan <Jonathan.Kimbril@psc.alabama.gov>; Blake, Leigh <lblake@ogb.state.al.us>; Cochran, Brett <brett.cochran@psc.alabama.gov>; Childs, Kyle <kyle.childs@psc.alabama.gov>
Subject: NRC Report

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Good Afternoon Kendra,

AID received an NRC report indicating the following:

Gas bubbling observed releasing from a pipeline in the Pelican Bay.
The caller has video evidence. Coordinates provided in the attachment.
Please verify if this may be in the area of your assets as soon as possible.

Respectfully,

Get Outlook for Android

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Steve Carlson

From: Brent Jean <bjean@wtoffshore.com>
Sent: Monday, August 18, 2025 2:36 PM
To: Steve Carlson; Alan Greig, Jr.
Subject: [EXTERNAL] RE: 4" Liquid Pipeline Leak

Do you have the June leak details; hole size, position, depth (water and mud)? 3mm at 7 o'clock position in 12fsw. Bottom condition is sugar sand.

Also, do you have the time / date when the leaks were repaired? I will have to go back and research the dates.

Brent Jean
Senior Project Manager
(713) 297-8018 (Direct) 337-298-8821 (Cell)
bjean@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 7 Housto , T 77057-582
00 n X 1

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From: Steve Carlson <Steve.Carlson@wsnelson.com>
Sent: Monday, August 18, 2025 2:31 PM
To: Brent Jean <bjean@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>
Subject: RE: 4" Liquid Pipeline Leak

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Brent,

Do you have the June leak details; hole size, position, depth (water and mud)?

Also, do you have the time / date when the leaks were repaired?

Thanks,

Steve Carlson P.E. (NM, TX), P.Eng (AB)
Process Engineer
Vice President
Waldemar S. Nelson and Co.
phone: 281-902-4242
email: steve.carlson@wsnelson.com

From: Brent Jean <bjean@wtoffshore.com>
Sent: Wednesday, August 13, 2025 3:20 PM

Steve Carlson

From: Philip McLain <pmclain@wtoffshore.com>
Sent: Friday, August 29, 2025 12:58 PM
To: Steve Carlson; Steve Clavin
Cc: Alan Greig, Jr.; Benjamin Reed; Eric Harbison; Ryan Duhon, P.E.; Chuck West; Brent Jean
Subject: RE: [EXTERNAL] New Voice Message from Steve Clavin 5598 on 08/27/2025 1:32 PM
Attachments: June 12 produced liquids leak PST 766 NWG

As per the attached trend:

There are two alarms that will alert board operators potential issues:

1 – Advisory Alarm set at 150#
2 – Critical Alarm set at 145#

As per the attached trend at 1:30am (6/12/25) board operators were alerted to a critical alarm (142.94#). The boards operators checked all locations and once it was determined the pipeline could possibly have a hole the pipeline pumps were shut down at 3:30am and the departing 4" produce liquid from B deck was isolated. From the time the critical alarm was received till the time pipeline pump was shut down is 2-hour period. As per the board operator that was on tower the time, the pipeline pump were not restarted.

Philip McLain
Lead Operator
+1 251 973 4611 (Direct) +1 985 688 8298 (Cell)
pmclain@wtoffshore.com | www.wtoffshore.com
13700 Dauphin Island Pkwy MB-1128, LA 36523-2920



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From: Steve Carlson <Steve.Carlson@wsnelson.com>
Sent: Friday, August 29, 2025 9:58 AM
To: Steve Clavin <steve.clavin@wsnelson.com>; Philip McLain <pmclain@wtoffshore.com>
Cc: Alan Greig, Jr. <agreig@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>; Chuck West <cwest@wtoffshore.com>; Brent Jean <bjean@wtoffshore.com>
Subject: RE: [EXTERNAL] New Voice Message from Steve Clavin 5598 on 08/27/2025 1:32 PM

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Philip,

When was the leak repaired or the pump stopped? Need to know how long the pipeline was flowing. Trend 1 looks like the pump started and stopped a few times.

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Thursday, September 18, 2025 1:28 PM
To: Clayton Campbell; Leigh Blake
Cc: Butch Gregory; Marvin Rogers; John C. Poole; Eric Harbison; Benjamin Reed; Alan Greig, Jr.; Ryan Duhon, P.E.
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Clayton,

Thank you for taking my call earlier today. As per our discussion, I will correct the OGB-27 reports to reflect produced liquids and uncheck the box for material contained on location. I am pulling the latest water sample of the produced water pipeline to show a breakdown of percentage of condensate/water coming into the OTF plant.

As soon as we have confirmed/corrected the spill calculations for the June 12th spill, I will attach to this email chain the updated OGB-27 reports.

Should you need anything else please let us know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Clayton Campbell <CCampbell@ogb.state.al.us>
Sent: Thursday, September 18, 2025 9:05 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Kendra,

These OGB 27's have been rejected. Our records indicate that these lines are carrying fluids not identified as "produced water". According to pipeline maps provided to AOGB by W&T and previous operators of these assets, these lines carry additional designations suggesting they are carrying oil/condensate/chemical in addition to produced water. Additionally, intake separators and tanks at the pipeline terminations located at OTF currently hold fluid not identified as water. W&T has the ability to track fluid volumes other than water in the OTF control room. Please indicate correctly on the OGB 27's all fluid types that are being transported in the pipelines. As well, indicate the spilled volume of each type of fluid.

The volume reported for the 6/12 spill appears to be incorrect. I believe Leigh has spoken to you regarding this volume.

On both forms you have the box checked for "Material contained on location". If the material was contained on location, it should be recovered and properly disposed of. AOGB will need trucking manifest's and disposal receipts if W&T is going to claim the material was contained on location.

Please call if you have any questions.

Thank you

Clayton Campbell
Petroleum Engineering Specialist, Sr.
28810 Hwy 98
Daphne, Alabama 36526
w. 251.626.8214
c. 251.525.3325
ccampbell@ogb.state.al.us

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, September 15, 2025 10:15 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Leigh,

Please find attached the revised OGB-27 Reports with the calculated spill volumes for each event in the report and the calculation methodology.

Should you need anything else for these two spills please let us know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Monday, September 15, 2025 10:04 AM

To: Kendra Sullivan <ksullivan@wtoffshore.com>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: Re: 4" Produced Liquids OGB-27 Reports and Production Loss

Was there a revised OGB-27 filled with the spill volume? Please advise.

On Aug 6, 2025, at 8:48 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:

Leigh,

I have asked engineering for the spill calculations and have pulled in my VP to have your request prioritized. Please find attached the OGB-27 Report for the July spill with PLIDCO Clamp Spec Sheets attached. As soon as we receive the spill calculations, the OGB-27 reports previously submitted to your office will be updated with the volumes.

The production lost from the June spill was calculated to be 706.41 MMCF. The July spill caused no loss in production due to the pipeline alternate route path being utilized.

Should you need anything else please let me know.

Regards,

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Wednesday, August 6, 2025 7:14 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>
Subject: 4" Produced Liquids OGB-27 Reports and Production Loss

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Kendra,

I never received a June 2025 spill volume as requested below and have received nothing on the July 2025 most recent leak (5th leak on 4" since November 2024). Please provide information on these two pipeline leaks as well as the lost production from the July spill previously requested on June 16 and again on July 17, 2025.

Leigh Blake, P.E.
Manager, South Alabama Field Operations
Alabama Oil and Gas Board
(251) 626-8214 (Office)
(251) 525-3324 (Cell)

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, July 14, 2025 8:36 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: RE: OGB-27 Report

I have asked Alan Grieg to calculate the spill volume.

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Thursday, July 10, 2025 4:29 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: Re: OGB-27 Report

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Where is the spill volume calculations?

> On Jun 25, 2025, at 9:28 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:
>
> Good Morning Leigh,
>
> Please find attached for your review and records the OGB-27 Report for the 4-inch produced water line repair. The pipeline had three leaks that were repaired by clamps. There was a mystery sheen that was investigated on Friday that was determined to be not from the pipeline. The pipeline was pressure tested on Saturday to 1.25x Operating pressure for a period of 2 hours and has been holding steady at over 500psi while production has been stabilizing.

This makes the fourth clamp repair in total on this pipeline. As part of permanent solutions, W&T Offshore, Inc. is currently investigating rerouting of the produced water system by utilizing other lines in the area.

Should you have any questions regarding the attached please advise.

Sincerely,

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Tuesday, October 14, 2025 3:36 PM
To: Leigh Blake; Clayton Campbell
Cc: Butch Gregory; Marvin Rogers; John C. Poole; Eric Harbison; Benjamin Reed; Alan Greig, Jr.; Ryan Duhon, P.E.; David Dean
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Hi Leigh,

I was able to speak with WS Nelson regarding the June spill calculation volume and received a more detailed explanation for their calculations yesterday.

The reason for the low volume of the leak is the 2 hour duration and the hole size of 0.125" diameter. To compare, the 0.25" hole from the July leak had 4 times the area. WS Nelson even added an additional 3 hour interval into their calculations for an extended sample spill volume which amounted to only 22 bbls.

If you are okay with this explanation, I will finish pulling together the revised OGB-27 with all of the additional details as discussed this week.

Sincerely,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

W&T OFFSHORE

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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Tuesday, October 14, 2025 3:02 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Clayton Campbell <CCampbell@ogb.state.al.us>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Hi Kendra,
Just checking in on the revised OGB-26 forms. Please provide update.
Thanks,
Leigh

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Thursday, September 18, 2025 1:28 PM

To: Clayton Campbell <CCampbell@ogb.state.al.us>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Clayton,

Thank you for taking my call earlier today. As per our discussion, I will correct the OGB-27 reports to reflect produced liquids and uncheck the box for material contained on location. I am pulling the latest water sample of the produced water pipeline to show a breakdown of percentage of condensate/water coming into the OTF plant.

As soon as we have confirmed/corrected the spill calculations for the June 12th spill, I will attach to this email chain the updated OGB-27 reports.

Should you need anything else please let us know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Clayton Campbell <CCampbell@ogb.state.al.us>
Sent: Thursday, September 18, 2025 9:05 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Kendra,

These OGB 27's have been rejected. Our records indicate that these lines are carrying fluids not identified as "produced water". According to pipeline maps provided to AOGB by W&T and previous operators of these assets, these lines carry additional designations suggesting they are carrying oil/condensate/chemical in addition to produced water. Additionally, intake separators and tanks at the pipeline terminations located at OTF currently hold fluid not identified as water. W&T has the ability to track fluid volumes other than water in the OTF control room. Please indicate correctly on the OGB 27's all fluid types that are being transported in the pipelines. As well, indicate the spilled volume of each type of fluid.

The volume reported for the 6/12 spill appears to be incorrect. I believe Leigh has spoken to you regarding this volume.

On both forms you have the box checked for "Material contained on location". If the material was contained on location, it should be recovered and properly disposed of. AOGB will need trucking manifest's and disposal receipts if W&T is going to claim the material was contained on location.

Please call if you have any questions.

Thank you

Clayton Campbell
Petroleum Engineering Specialist, Sr.
28810 Hwy 98
Daphne, Alabama 36526
w. 251.626.8214
c. 251.525.3325
ccampbell@ogb.state.al.us

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, September 15, 2025 10:15 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: RE: 4" Produced Liquids OGB-27 Reports and Production Loss

Leigh,

Please find attached the revised OGB-27 Reports with the calculated spill volumes for each event in the report and the calculation methodology.

Should you need anything else for these two spills please let us know.

Regards,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Monday, September 15, 2025 10:04 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>; John C. Poole <jpoole@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>;

Benjamin Reed <breed@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Ryan Duhon, P.E. <rduhon@wtoffshore.com>
Subject: Re: 4" Produced Liquids OGB-27 Reports and Production Loss

Was there a revised OGB-27 filled with the spill volume? Please advise.

> On Aug 6, 2025, at 8:48 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:
>
> Leigh,
>
> I have asked engineering for the spill calculations and have pulled in my VP to have your request prioritized. Please find attached the OGB-27 Report for the July spill with PLIDCO Clamp Spec Sheets attached. As soon as we receive the spill calculations, the OGB-27 reports previously submitted to your office will be updated with the volumes.
>
> The production lost from the June spill was calculated to be 706.41 MMCF. The July spill caused no loss in production due to the pipeline alternate route path being utilized.
>
> Should you need anything else please let me know.
>
> Regards,
>
> Kendra Sullivan
> Sr. Staff Regulatory Analyst
> (713) 513-8629 (Direct) 346-316-5615 (Cell)
> ksullivan@wtoffshore.com | www.wtoffshore.com
> 5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784
>
> *A U.S. Company safely supplying energy for its Country*
>
> **From:** Leigh Blake <LBlake@ogb.state.al.us>
> **Sent:** Wednesday, August 6, 2025 7:14 AM
> **To:** Kendra Sullivan <ksullivan@wtoffshore.com>
> **Cc:** Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>
> **Subject:** 4" Produced Liquids OGB-27 Reports and Production Loss

WARNING: This message has originated from an External Source. This may be a phishing email that can result in unauthorized access to W&T systems. Please use proper judgment and caution when opening attachments, clicking links or responding. If in doubt, please reach out to the service desk for assistance.

Kendra,

I never received a June 2025 spill volume as requested below and have received nothing on the July 2025 most recent leak (5th leak on 4" since November 2024). Please provide information on these two pipeline leaks as well as the lost production from the July spill previously requested on June 16 and again on July 17, 2025.

Leigh Blake, P.E.
Manager, South Alabama Field Operations
Alabama Oil and Gas Board

(251) 626-8214 (Office)
(251) 525-3324 (Cell)

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, July 14, 2025 8:36 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: RE: OGB-27 Report

I have asked Alan Grieg to calculate the spill volume.

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Thursday, July 10, 2025 4:29 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: Re: OGB-27 Report

WARNING: This message has originated from an External Source. This may be a phishing email that can result in unauthorized access to W&T systems. Please use proper judgment and caution when opening attachments, clicking links or responding. If in doubt, please reach out to the service desk for assistance.

Where is the spill volume calculations?

> On Jun 25, 2025, at 9:28 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:
>
> Good Morning Leigh,
>
> Please find attached for your review and records the OGB-27 Report for the 4-inch produced water line repair. The pipeline had three leaks that were repaired by clamps. There was a mystery sheen that was investigated on Friday that was determined to be not from the pipeline. The pipeline was pressure tested on Saturday to 1.25x Operating pressure for a period of 2 hours and has been holding steady at over 500psi while production has been stabilizing.
>
> This makes the fourth clamp repair in total on this pipeline. As part of permanent solutions, W&T Offshore, Inc. is currently investigating rerouting of the produced water system by utilizing other lines in the area.
>
> Should you have any questions regarding the attached please advise.

Sincerely,

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784

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OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

NOVEMBER 11, 2024

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

REFERENCE : PM 4131-05-22
Permit Number (if applicable)

01 - - - -
API Number (if applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 11/27/2024

Address 5718 Westheimer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name: Mobile Bay 112 B Platform
2. County: Mobile-OS

3. Facility Location* (surface)
(give footage from nearest section or offshore tract lines): 6000 FNL and 3600 FWL
Section-Township-Range or Tract: MB-112

Latitude (NAD27): 30.18833
Longitude (NAD27): 80.12166

3. Field (If wildcat, so state): Northwest Gulf

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 11/11/2024

Time: 9:50 AM Reported By (Company Representative): John Poole

When Did Incident Occur? Date: 11/11/2024 Time: 9:00 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred:

Material spilled: Produced Water

Estimated volume of spill or leak: 849 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area:

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: Contact Person:

Agency: Contact Person:

CAUSE AND ACTIONS

Circumstances causing the incident: 1/4" pin hole leak on the underside of the pipeline

Measures taken to control fire, spill, leak or blow out: clamp was installed on pipeline

Measures taken to clean up: produced water pipeline that did not cause a sheen

Measures taken to prevent reoccurrence of this incident: clamp installed on pipeline

Date that cleanup operations completed (if completed): 11/14/2024

RECEIVED
DEC 09 2024
STATE OIL AND GAS BOARD OF ALABAMA

Remarks:

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

11/27/2024
Date

✓ 11/28/25

RECEIVED
DEC 09 2024
STATE OIL AND GAS BOARD
OF ALABAMA

W&T Offshore, Inc.
Mobile Bay 112-B
Pipeline Repair Procedure
Rev.0; 11/12/2024

A. General

Regulatory Contact / Phone	Kendra Sullivan; 713-513-8629
Technical Contact / Phone	Alan Greig, Jr.; 713-297-8014
Segment number	4"-PW-238
Work Location – platform or Latitude / Longitude	Mobile Bay 112-B Platform Lat 30 12.327'N / Long 088 06.240'W Approximate location is 1.5 Miles from MB 112-B platform
Product Code	Produced Water
Approximate length	121,840 ft
Water depth at repair location	25 ft
MAOP	1,480 psig
Operating pressure range	400 psig
Failure Description	Pipeline leak
General repair description	**Repair** 1. Make the appropriate regulatory notifications. 2. Isolate the pipeline from pressure sources at MB 112-B, MO 823-A, and MB 62-A. 3. Temporarily pressurize the pipeline with processed sweet gas to create a visual indication of the leak source. 4. Jump divers and physically locate the leak source. 5. Jet out the pipeline and separate it from the other pipelines, if necessary. 6. Perform NDE around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 7. Install a 1,500 psi PLIDCO 4" x 18" LG. Split + Sleeve clamp onto the pipeline and prepare as-built drawing. 8. Utilizing sweet fuel gas, pressurize the pipeline to 400 psig, perform a 15-minute visual leak test. 9. Using sweet gas, pressurize the pipeline to 1.5 x Normal Average Operating Pressure, or 600 psig. 10. Perform 2-hour pressure test with sweet gas. Record and print the pressure test data from existing pressure transmitters. 11. Write the date, pipeline size, pipeline ID, start test time, end test time, start pressure, end pressure, and signature by W&T Rep. 12. Email a picture of the data to eharbison@wtoffshore.com; breed@wtoffshore.com, agreig@wtoffshore.com and rduhon@wtoffshore.com.
Alternate Compliance	N/A
Date leak detected	11/11/2024
Planned date for start of repair	11/13/2024
Planned date for start of leak test	11/16/2024
Planned date to return to production	11/17/2024
Signature / Date of reviewing Facilities Engineer	BR Duhon 11/12/24
Signature / Date of Facilities Manager or alternate reviewer	Alan Greig Digitally signed by 3ae54f16-9aed-4b63-8cb4-7c6025f0c80a DN: cn=3ae54f16-9aed-4b63-8cb4-7c6025f0c80a Date: 2024.11.12 19:44:12 -06'00'

B. Materials Specifications

Pipe outer diameter:	4.500"
Wall thickness / grade of replacement pipe:	0.237" / A106 Gr.X-52
Minimum wall thickness required for MAOP	0.235" with 0.125" Corrosion Allowance
Design factor (0.72 or 0.60)	0.60
Flange size / rating / face type:	4" / ANSI 600 / RTJ
Coating:	16-Mils Fusion Bond Epoxy
Repair clamp manufacturer / pressure rating / coverage length	PLIDCO / 2,200 psi / 4" nom. x 12" L
Subsea connectors	N/A

C. Shop Fabrication Procedures

Welding Code:	N/A
NDE	N/A
Pressure testing	N/A

D. Mechanical Integrity Check Procedures

Wall thickness check	The pipe will be ultrasonically tested (UT) for wall thickness at two (2), five (5), and ten (10) feet on each side of the leak point at 3, 6, 9, and 12 o'clock positions.

E. Purging / Decommissioning Prior to Disassembly

Purging / Pigging	Pipeline is currently depressurized
Energy Isolation	• MB 112-B • MO 823-A • MB 62-A • Onshore Treating Facility (OTF)
Handling method for vented gas and displaced liquid hydrocarbons	HP / LP Flare Tip at MB 112-B
Allocation plan for fluids downstream of sales meters removed from pipeline	N/A

F. Offshore Disassembly Procedure

Regulatory Notification	Courtesy notification to AOGB
Cutting method for removal of pipe material	N/A
Pollution prevention measures (pollution dome, absorbent pads, etc)	N/A, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per diving contractor's standard procedures

G. Offshore Installation and Testing Procedures

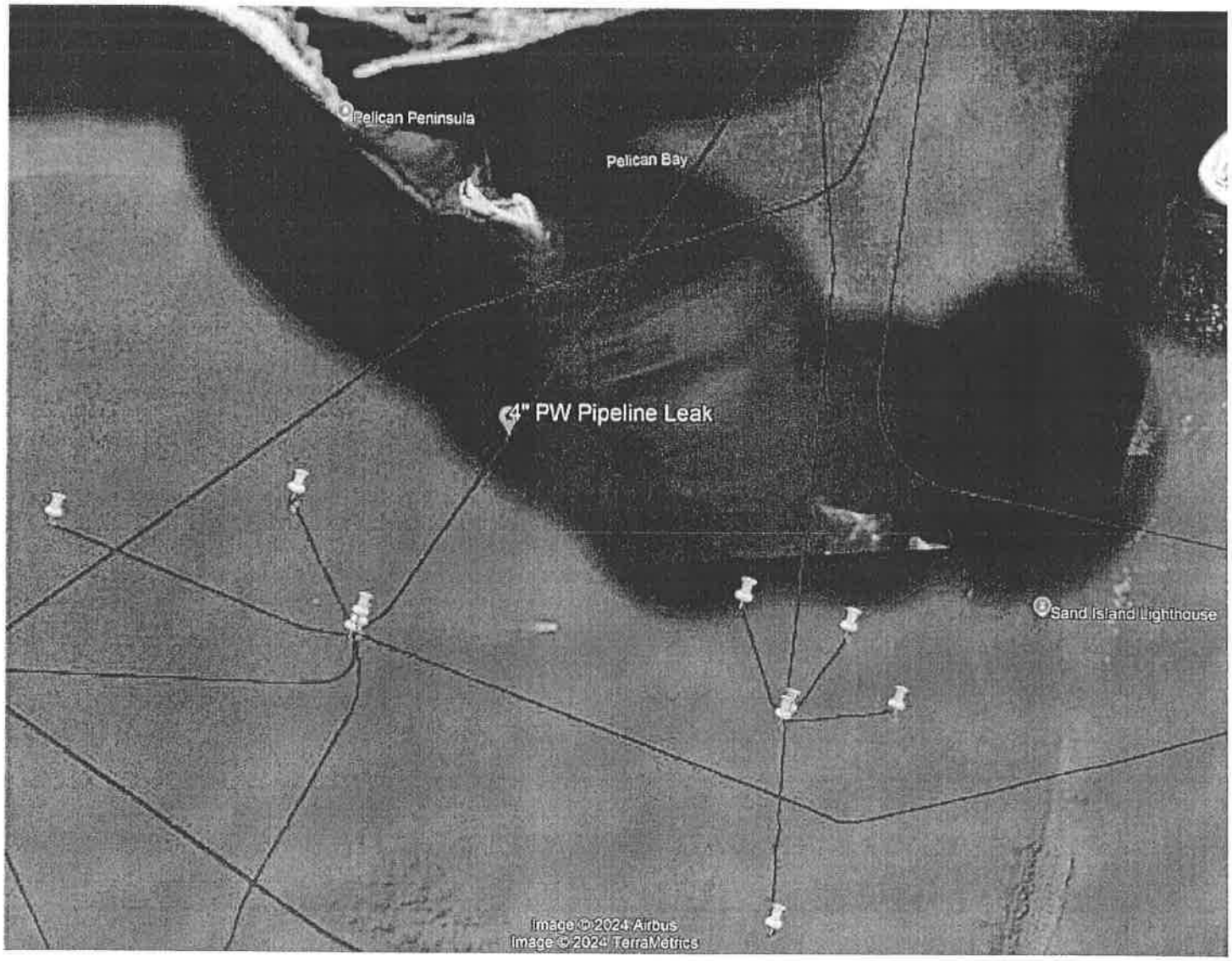
Safe rigging practices	Per diving contractor's standard procedures. Contractor approved deviations to standard procedures may be required upon water depth and rigging constraints.
Welding Code:	N/A
Welding and burning safe practices	N/A
NDE	N/A
Weld area coating repair	N/A
Subsea connectors	N/A
Flange make-up	N/A
Riser protection from marine vessel impact (replacement risers)	N/A
Pressure / leak testing	Once repair is completed, perform two (2) hour leak test with sweet fuel gas to 1.5 x Normal Operating Pressure or 600 psig

H. Return to Service

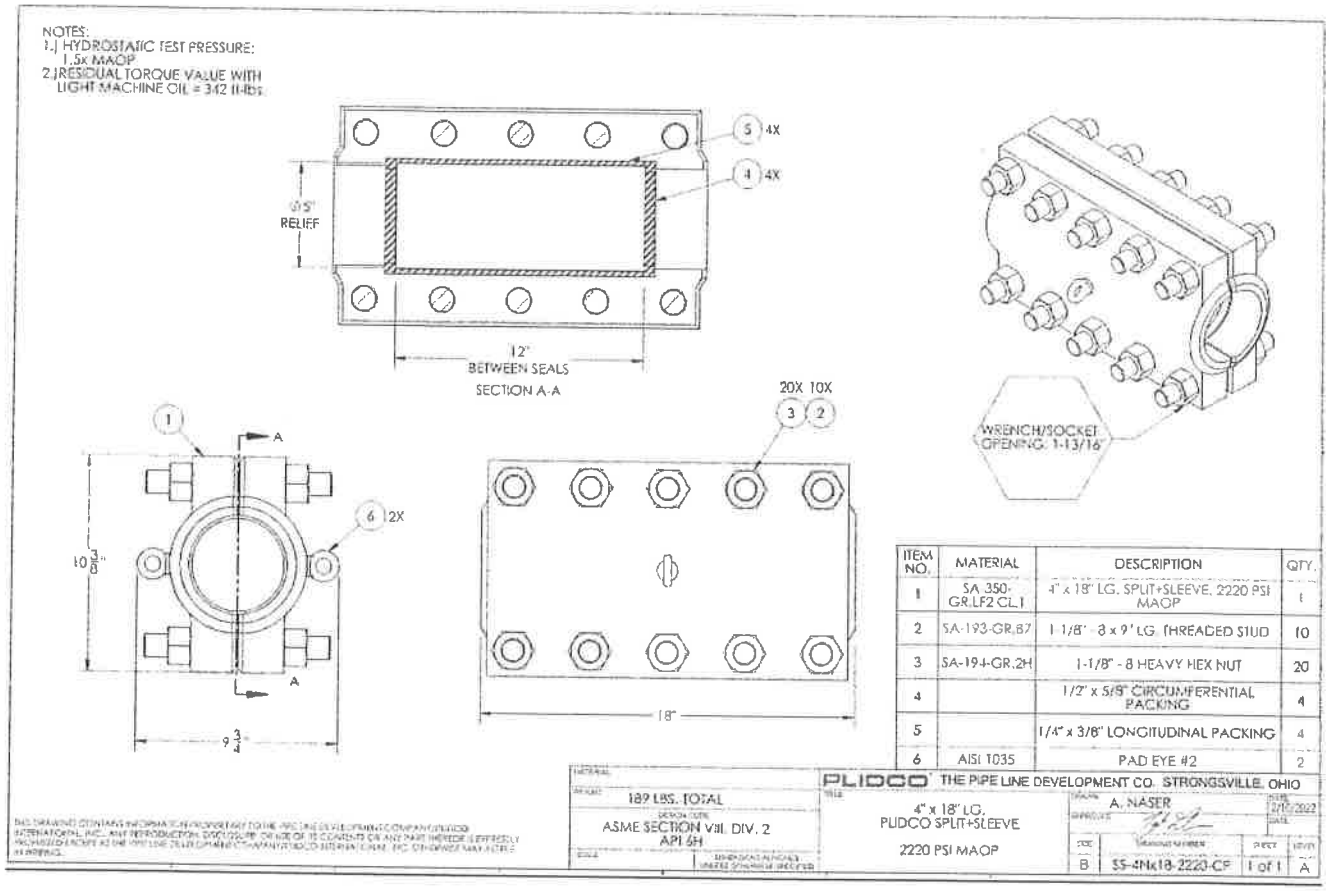
Regulatory Approval	None required
Handling method for hydro test water	N/A
Hydrate prevention for dry gas pipelines	N/A; not a dry gas system
Pipeline recover / reburial	Natural reburial

I. Attachments

Map



Repair Clamp



STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 11/27/2024

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: Mobile Bay 112 B Platform 2. County: Mobile-OS

3. Facility Location* (surface): (give footage from nearest section or offshore tract lines) 6000 FNL and 3600 FWL; Section-Township-Range or Tract: MB-112

Latitude (NAD27): 30.188333 Longitude (NAD27): 80.121666

3. Field (If wildcat, so state): Northwest Gulf

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 11/11/2024

Time: 9:50 AM Reported By (Company Representative): John Poole

When Did Incident Occur? Date: 11/11/2024 Time: 9:00 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: 849 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: 1/4" pin hole leak on the underside of the pipeline

Measures taken to control fire, spill, leak or blow out: clamp was installed on pipeline

Measures taken to clean up: produced water pipeline that did not cause a sheen

Measures taken to prevent reoccurrence of this incident: clamp installed on pipeline

Date that cleanup operations completed (if completed): 11/14/2024

Remarks:

RECEIVED
AOGB MOBILE
11/27/24

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

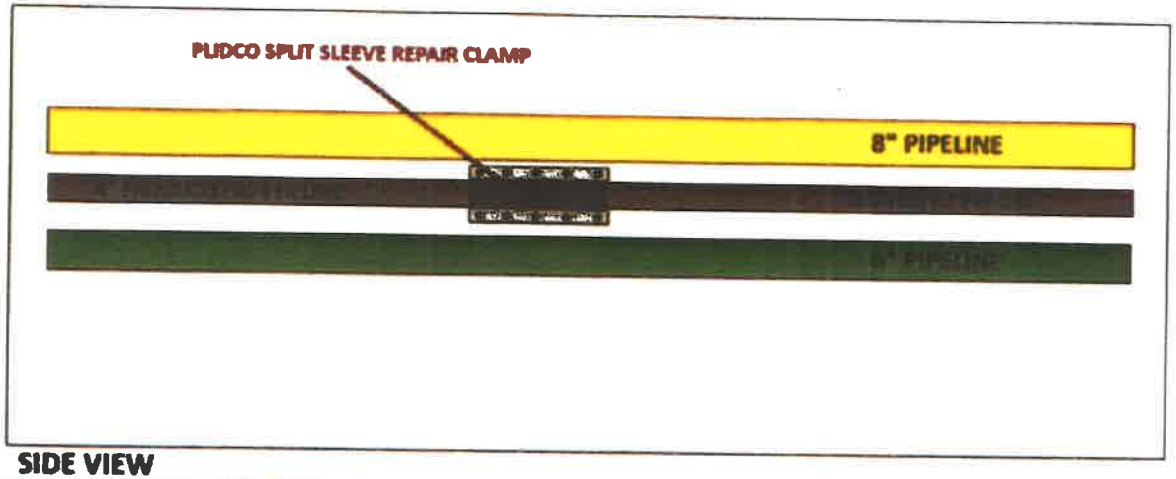
Signature of Operator's Agent

11/27/2024
Date

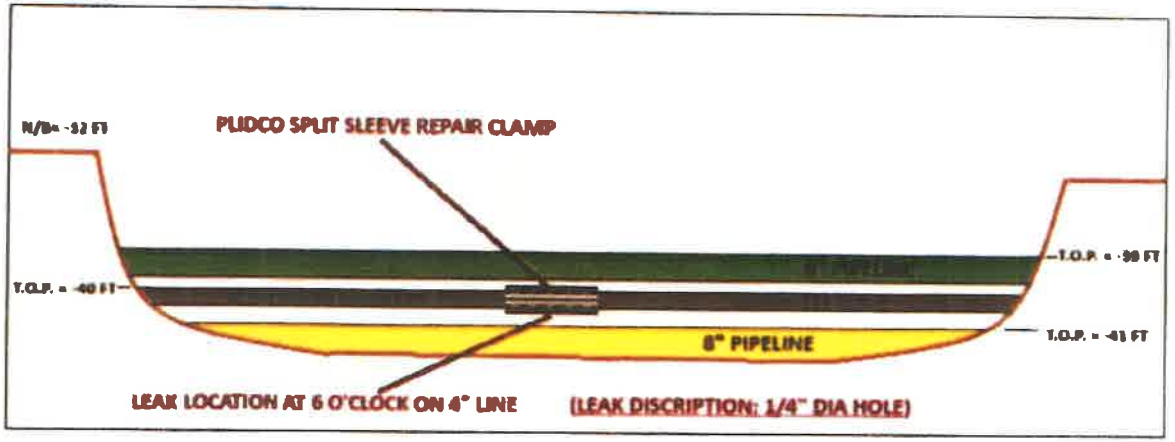
CLIENT: W & T
TYPE: AS LEFT FIELD DWG.
PROJECT: 4" PIPELINE LEAK REPAIR
DATE: 11-19-24
ASSET: DSV-TRITON PATRIOT
BY: B. HIGBY

(NOTE: DWG NOT TO SCALE)

TOP VIEW



SIDE VIEW



WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS
TX Reg. # F-000059

Pipeline Leak Estimate
MB 112-B Produced Water Line

Document Number:	20240528-STUDY-P-001
Client Name:	W&T Offshore
Project Title:	MB 112-B
Job Number	20240528-00

A	11/26/2024	Issued for Review	SWC			
REV	DATE	DESCRIPTION	ORIG	APPROVALS		

APPROVED BY:	COMPANY APPROVAL:
DATE:	DATE:

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1. PURPOSE

This calculation estimates the leak rate for the hole in the 4" MB 112-B produced water pipeline

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B R., Young, D.F, and Okiishi, T H. 1998, 3ed

3. NOTES

W&T advised the following

The leak began about 2:30 AM on November 10, 2024
Pressure in the pipeline was provided on a pressure trend chart
The leak continued until the pressure dropped to the hydrostatic pressure of the bay
The leak occurred at a depth of 40 feet, with 32 feet of water and 8 feet of mud
The estimated hole size is 1/4"

The accuracy of the estimated volume is ± 20%.

4. SUMMARY CALCULATIONS

The pressure data from W&T was graphed to see the trends for the pipeline. The time periods were broken into five distinct periods based on the pressure increasing or decreasing during that period. The five Periods are shown in the table below.

	Time	Pressure, psig
Period 1	11/10/24 2:30	172
	11/11/24 11:00	140
Period 2	11/11/24 11:00	238
	11/11/24 14:00	238
Period 3	11/11/24 14:00	238
	11/11/24 15:00	145
Period 4	11/11/24 15:00	145
	11/12/24 1:30	33

The average pressure for each period was determined and then used to estimate the leakage rate for that period. The total leak for each period was then determined. See the table below for a summary of the leakage rate during each period.

Period	Duration, hrs	Period Q, m³	
1	32.5	97.77	
2	3	11.44	
3	1	3.38	
4	10.5	22.44	
	Total Amount	135.03	m³
		849.4	bbl

5. CONCLUSIONS

The leak continued for approximately 47 hours.

The estimated volume leaked from the pipieline was 849.4 barrels

PROCESS CALCULATIONS

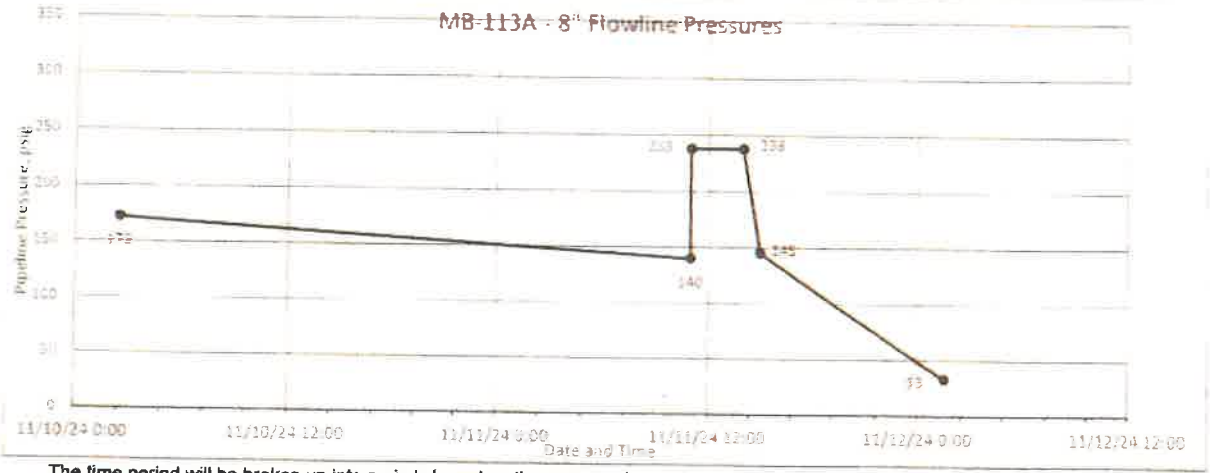
Client	W&T Offshore	Project No.	20240528-00
Project	MB 112-B	Rev.	A
Calculation Title	Pipeline Leak Estimate MB 112-B Produced Water Line	By	SWC
Calculation No.	20240528-STUDY-P-001	Checked	
		Date	11/26/2024

6. DETAILED CALCULATIONS

The time and pressure data from the W&T pressure trend is tabulated from the start of the leak in the table below.

Time	Pressure, psig	Comments
11/10/24 2:30	172	Leak started
11/11/24 11:00	140	823 Shut in
11/11/24 11:00	238	
11/11/24 14:00	238	MB 112-B shut in
11/11/24 14:00	238	
11/11/24 15:00	145	
11/12/24 1:30	33	Leak stopped

The data is graphed to see trends to better understand the pressure in the pipeline at the various times during the leak.



The time period will be broken up into periods based on the pressure increasing or decreasing.

Period 1: 172 to 140 psig
Period 2: 238 psig average
Period 3: 238 psig to 145 psig
Period 4: 145 psig to 33 psig

The average pressure for each period is determined and then used with the following formula to estimate the leaked amount for the given period.

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m³/s
C = coefficient of discharge, 0.62
A = Area of the hole, m²
ΔP = pressure differential, Pa
ρ = liquid density, kg/m³

C = 0.62
ρ = 1 030 kg / m³ (for seawater)
D = 0.25 in = 0.00635 m
A = 3.17E-05 m²
P at 32' = 14 3 psig (water pressure)
P at 8' of mud = 6.4 psig (mud density of 115 lb / ft³)
P at 40 = 20.7 psig

The pressure differential has to take into account the water and depth. From the diver's report, the leak point is at 40' depth with 32' of water and 8' of mud.

The volume estimates are included in the table below.

Period	Duration, hrs	Ave P, psig	ΔP, psi	ΔP, Pa	Q, m³ / s	Q, m³ / h	Period Q, m³
1	32.5	156	135.3	932,860	0.00084	3.008	97.77
2	3	238.0	217.3	1,498,229	0.00106	3.813	11.44
3	1	191.5	170.8	1,177,623	0.00094	3.380	3.38
4	10.5	89.0	68.3	470,911	0.00059	2.137	22.44
						Total Amount	135.03 m³
							849.4 bbl

PROCESS CALCULATIONS

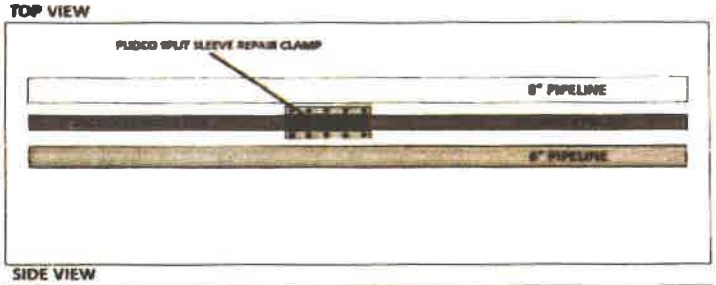
Client	W&T Offshore	Project No.	20240528-00
Project	MB 112-B	Rev	A
Calculation Title	Pipeline Leak Estimate MB 112-B Produced Water Line	By	SWC
Calculation No.	20240528-STUDY-P-001	Checked	
		Date	11/28/2024

Drawing From Dive Team

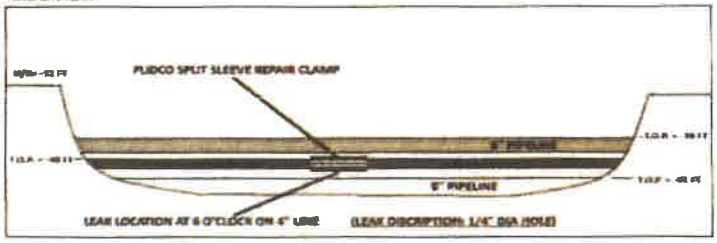
CLIENT: W & T
TYPE: AS LEFT FIELD DWG.
PROJECT: 4" PIPELINE LEAK REPAIR
DATE: 11-19-24
ASSET: DSV-TRITON PATROL
BY: B. HIGBY

(NOTE: DWG NOT TO SCALE)

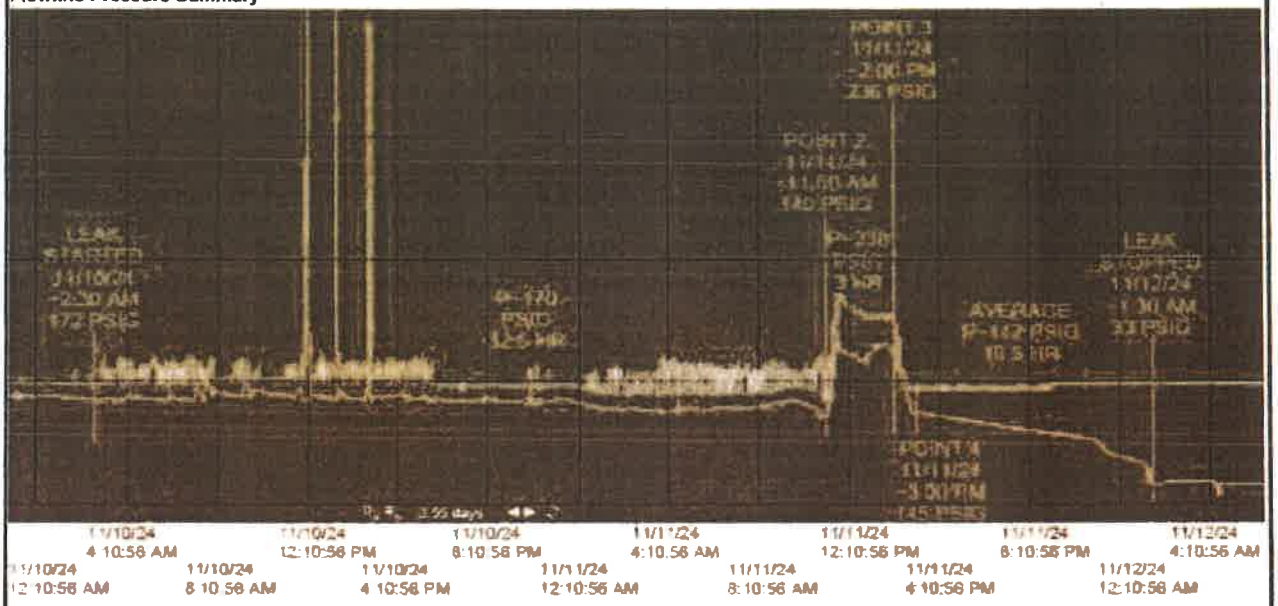
TOP VIEW



SIDE VIEW



Flowline Pressure Summary



OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

SEPTEMBER 3, 2024

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

OGB-27

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____ API Number (if applicable): 01- . . . .

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 10/2/2024

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: 12-inch Gas Pipeline MB-76-A-Aux 2. County: Mobile-OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract: Mobile Block 76

Latitude (NAD27): 30.25361 Longitude (NAD27): 88.05222

3. Field (If wildcat, so state): Mary Ann Field Unit

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 09/04/2024

Time: 10:00 AM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 09/03/2024 Time: 5:00 AM ☐ PM ☒

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: _____

Estimated volume of spill or leak: _____

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: Alabama Public Service Commission Contact Person: Jonathan Kimbril/ Shawn Emmons

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Corrosion on pipeline

Measures taken to control fire, spill, leak or blow out: Blowdown pipeline by sending gas to flare

Measures taken to clean up: Deployed dive vessel and placed clmap around pipeline

Measures taken to prevent reoccurrence of this incident: Clamp was placed around corroded area

Date that cleanup operations completed (if completed): 09/18/2024

Remarks:

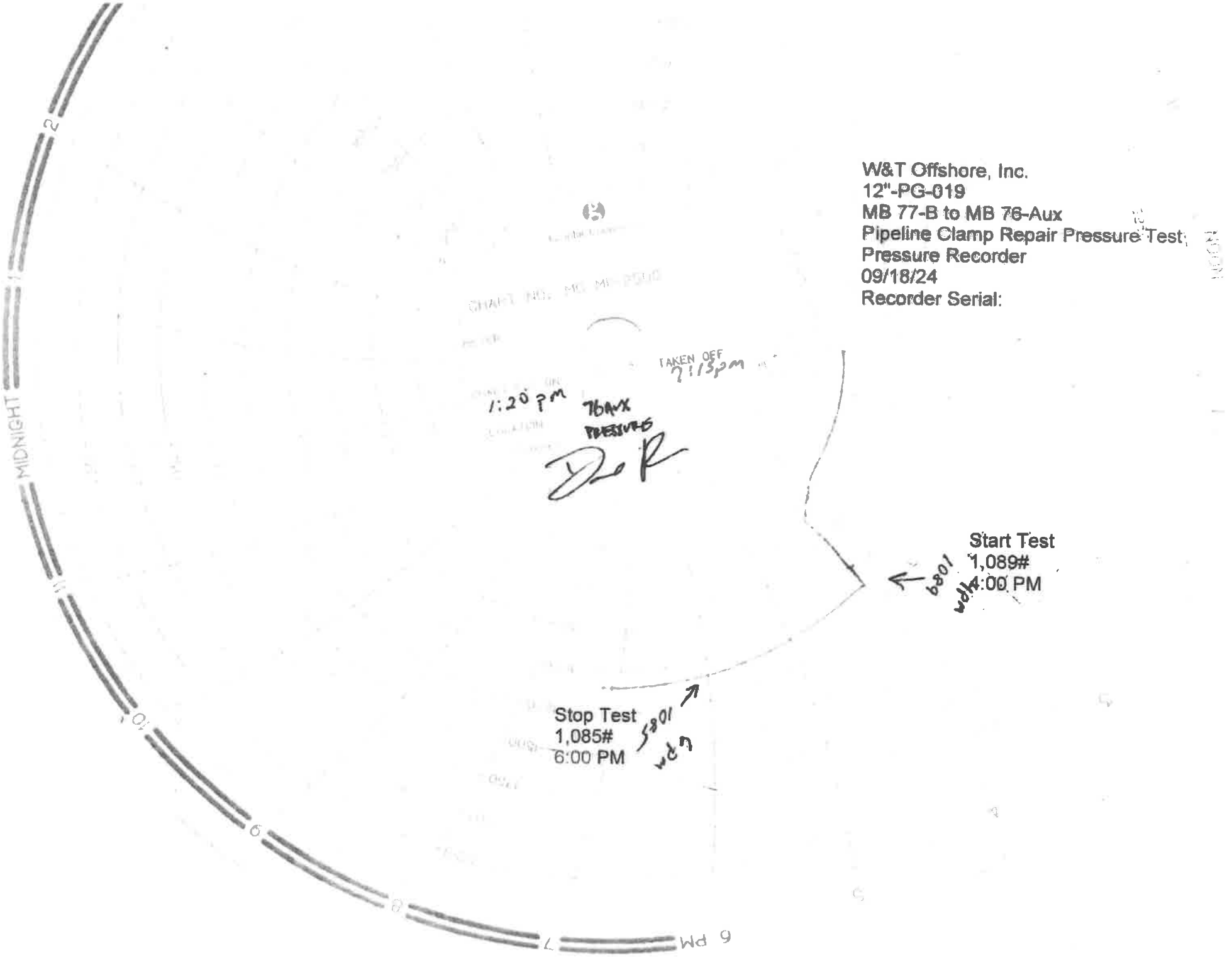
RECEIVED
AOGB MOBILE
10/2/2024

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

9/24/2024
Date



W&T Offshore, Inc.
12"-PG-019
MB 77-B to MB 76-Aux
Pipeline Clamp Repair Pressure Test
Pressure Recorder
09/18/24
Recorder Serial:

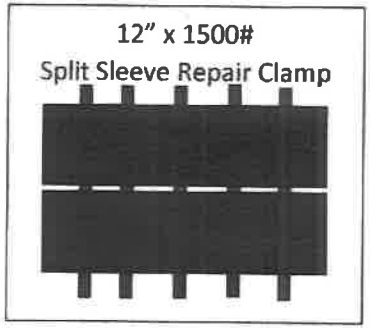
W&T Offshore, Inc.
12"-PG-019 Gas Pipeline
MB 77-B to MB 76-Aux
Pipeline Clamp Repair Pressure Test
Temperature Recorder
09/18/2024
Recorder Serial #:

12:54pm
76AUX
TEMP
10:20pm

Start Test
83F
4:00 PM

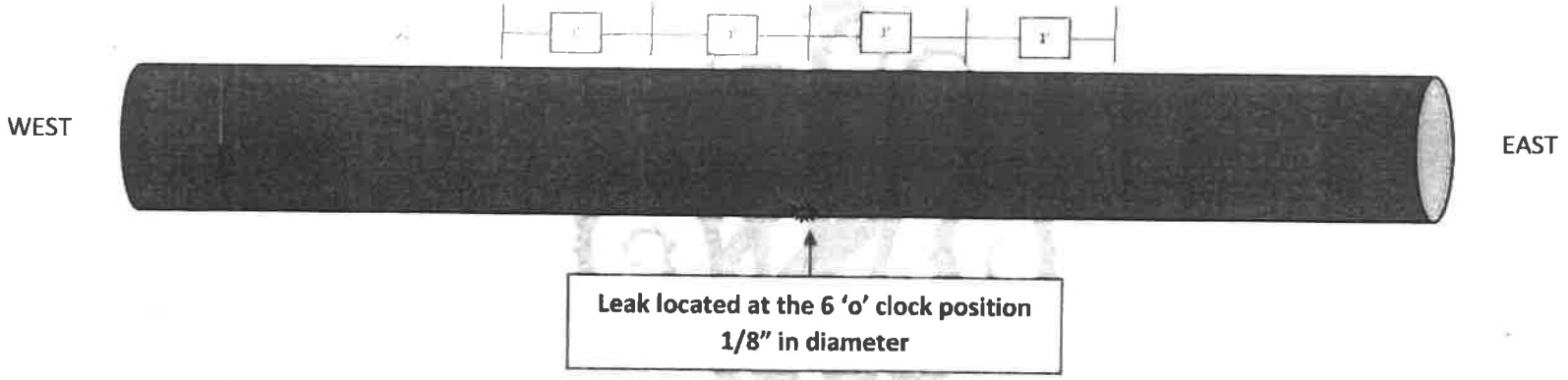
Stop Test
84F
6:00 PM

Leviathan Offshore LLC Phone (985) 746-5898 300 Bridge Rd. Houma LA. 70363 www.leviathanoffshorellc.com	Document Title AMY 76-A Aux 12" P/L Leak Field Drawing	Drawing Not to Scale
	Document Number N/A Project Specific	Rev Date: 9-15-24



AMY 76-A Aux 12" P/L Repair

X =325894.44 Y=93126.50



Cygnus U/T Readings (MM) - All diver measurements taken facing E.				
Location	12 'o' Clock	3 'o' Clock	6 'o' Clock	9 'o' Clock
West 2'	12.70	12.65	12.65	12.65
West 1'	12.65	12.80	12.55	12.45
Leak Location	12.70	12.65	12.60	12.55
East 1'	12.80	12.75	12.40	12.35
East 2'	12.65	12.75	12.40	12.15

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

AUGUST 4, 2024

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable)

01 - - - -
API Number (if applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 08/04/2024

Address 5718 Westheimer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name MB 114 CC Deck 2. County Baldwin-OS

3. Facility Location* (surface)
(give footage from nearest section or offshore tract lines) 5900 FNL and 5200 FWL
Section-Township-Range or Tract MB-114 Block
Latitude (NAD27) 30.18889 Longitude (NAD27) 88.02166

3. Field (If wildcat, so state) North Central Gulf - Mobile Area

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 08/05/2024

Time: 11:50 AM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 08/04/2024 Time: 10:17 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred:

Material spilled: Condenstate

Estimated volume of spill or leak: Less than half gallon

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: The water below MB-114 CC deck

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: National Response Center Contact Person:

Agency: ADEM Contact Person: Angie Smith

CAUSE AND ACTIONS

Circumstances causing the incident: Sump drain line was being cleaned out when contents fell into water

Measures taken to control fire, spill, leak or blow out: Buckets were used

Measures taken to clean up: Dissapate

Measures taken to prevent reoccurrence of this incident: Deck drain cleaning will have back up oil catch system

Date that cleanup operations completed (if completed): 08/04/2024

Remarks: While draining a line for the oil side deck drain sump, an obstruction was found on the valve of the bridle on the line. While attempting to free obstruction from the valve, the contents of the line overflowed the bucket before personnel were able to switch it out.

RECEIVED
AOGB MOBILE
10/24/24

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

10/24/2024
Date

Facility Incident Report

Date Call Received: 08/04/2024 10:17 (GMT-06:00) Central Time (US & Canada)		Call Received by: Tonya Munns
☐ Drill ☑ Actual Incident	Incident Name 114 Mobile Bay-24 - NRC#1406841	NRC Number : 1406841

Responsible Party	Reporting Party	Suspected Responsible Party
	Name: Chuck West	Company: W & T Offshore
	Position: Lead Operator	Name: Chuck West
	Phone: 251-973-4611 Fax:	Phone: 251-973-4611 Fax:
	Company: W & T Offshore	Notified: ☐ Not Notified ☑ Notified
	Email: cwest@wtoffshore.com	Email: cwest@wtoffshore.com
	Address: 5718 Westheimer Rd Ste 700	Address: 5718 Westheimer Rd Ste 700
	City: Houston State: Texas	City: Houston State: Texas
	Zip: 77057 Country: United States of America	Zip: 77057 Country: United States of America

Time and Location	
	Incident Date: 08/04/2024 10:17 Time Zone: (GMT-06:00) Central Time (US & Canada)
	Incident Reported to OMC: 08/04/2024 10:17 Time Zone: (GMT-06:00) Central Time (US & Canada)
	Area Name: Mobile Bay Block: 114 Area Abv#:
	Facility Type: E & P Platform Facility: CC OCS#: Pipeline Segment#: State Lease#: 0624
	Latitude: 30°11' 20"N Longitude: 88°01'17"W
	Nearest City: Fort Morgan AL Miles To City: 2.50 Miles To Shore: 2.20
	Incident Type: Oil Spill
	Incident Description: Chuck West Lead Operator called to advise that while draining a line for the oil side deck drain sump an obstruction was found on the valve of the bridle on the line. While attempting to free obstruction from the valve, the contents of the line overflowed the bucket before crewman were able to switch it out.

Materials Discharged							
	Amt Discharged: Quantity: Material Discharged: Arabian - Light API Gravity:						
	Body Of Water Affected: Gulf of Mexico						
	Groundwater Affected: ☑ No ☐ Yes Water Intake Affected: ☑ No ☐ Yes						
	Spill Size: Length : 20 Feet Width : 40 Feet						
	Slick Size: Estimated percentage of area covered by slick: 85%						
	Spill Source: ☑ Source Secured Date And Time Date: 08/04/2024 Time: 09:35 (GMT-06:00) Central Time (US & Canada)						
	☐ Source Continuous-Estimated Rate Rate: each						
	Color Of Slick:		Barely visible		Silvery		Slight color
	Appearance Percentage:	5%	Brightly colored		Dull	95%	Dark

Facility Incident Report

Weather	Air Temp: 85 °F	Water Temp: 90 °F
	Ceiling: unlimited Feet	Visibility: unlimited Meters
	Wind Dir: E ° Heading	Wind Velocity: 10 knots
	Seas: 2 Feet	High Tide Time: 00:00
	Current Dir: WSW	Current Speed: 2 knots
Response Action	Actions Taken To Correct/ Mitigate Incident:	Crewmen removed the valve to clear obstruction and were able to place line back into operation. Spill is naturally dissipating.
Additional Information	Injuries: 0	Fatalities: 0
	Evacuated: ☑ No ☐ Yes	
	Damage: ☑ No ☐ Yes	

Company Notifications

Reported By	Reported To(name)	Reported To(position)	Update 201-2	Time	Date
Tonya Munns	Max Maldonado	Oil / ERC	☑	10:47	08/04/2024

Agency Notifications

Reported By	Reported to(name)	Agency/Notification	Assigned#	Time	Date
Tonya Munns	Will	National Response Center	1406841	10:59	08/04/2024
Tonya Munns	Angie Smith	Alabama State Warning for ADEM	52173	11:36	08/04/2024

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

APRIL 17, 2024

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

01 - _____ - _____ - _____
API Number (if applicable)

Fire ☐ Spill ☒ Leak ☐ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 04/18/2024

Address: 5718 Westheimer Rd., Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: MB-112-B Deck
2. County: Mobile

3. Facility Location* (surface)
(give footage from nearest section or offshore tract lines): 3810' FWL MB 112 (SL 537)
Section-Township-Range or Tract: MB-112

Latitude (NAD27): 30.189039 Longitude (NAD27): 88.121057

3. Field (If wildcat, so state): Northwest Gulf

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 04/18/2024

Time: 6:59 AM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 04/17/2024 Time: 7:15 AM ☐ PM ☒

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Lube Oil

Estimated volume of spill or leak: < gallon

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Small amount of lube oil dripped into state waters

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: ADEM Contact Person: Steve Summersell

Agency: USCG Contact Person: Petty Officer Spurgen

CAUSE AND ACTIONS

Circumstances causing the incident: Leak on the drain line going to the sump system

Measures taken to control fire, spill, leak or blow out: Drain line was tested to find pin hole leak and epoxy applied

Measures taken to clean up: Amount was so small allowed to dissapate

Measures taken to prevent reoccurrence of this incident: New drain line will be fabricated to replace

Date that cleanup operations completed (if completed): _____

Remarks: During operations, employee was walking along catwalk and noticed spot in water. Crew investigated and found drain line headed to sump from generator skid had pin hole leak. Crew tested line with soap and water found pin hole leak. Temporary epoxy has been applied to prevent futher leaks. Construction crew will head out and replace drain line.

RECEIVED
AOGB MOBILE
4/18/24

NRC was called (NRC # 1396705) and report is attached.

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Kendra J Sullivan
Signature of Operator's Agent

4/18/2024
Date

Facility Incident Report

Date Call Received: 04/17/2024 19:48 (GMT-06:00) Central Time (US & Canada)		Call Received by: Devin Nguyen
☐ Drill ☑ Actual Incident	Incident Name : 112 Mobile Bay-24 - NRC#1396705	NRC Number : 1396705

Responsible Party	Reporting Party	Suspected Responsible Party
	Name: Chuck West	Company: W & T Offshore
	Position: Lead Operator	Name: Chuck West
	Phone: 251-973-4611 Fax:	Phone: 251-973-4611 Fax:
	Company: W & T Offshore	Notified: ☐ Not Notified ☑ Notified
	Email: cwest@wtoffshore.com	Email: cwest@wtoffshore.com
	Address: 9 Greenway Plaza Suite 300	Address: 9 Greenway Plaza Suite 300
	City: Houston State: Texas	City: Houston State: Texas
	Zip: 77046 Country: United States of America	Zip: 77046 Country: United States of America

Time and Location	
	Incident Date: 04/17/2024 18:48 Time Zone: (GMT-06:00) Central Time (US & Canada)
	Incident Reported to QI/IC: 04/17/2024 19:48 Time Zone: (GMT-06:00) Central Time (US & Canada)
	Area Name: Mobile Bay Block: 112 Area Abv#: MB
	Facility Type: E & P Platform Facility: B-Deck OCS#: Pipeline Segment#: State Lease#: 537
	Latitude: 30 11' 17"N Longitude: 88 7'17"W
	Nearest City: Dauphin Island Miles To City: 3.20 Miles To Shore: 3.20
	Incident Type: Product Release
	Incident Description: Caller reports that one of the employees was walking along the catwalk and noticed a spot in the water. Crew investigated it, tracked it down and found the leak on a generator engine oil/water drain line/catch pan/skid (above water) under the lower platform deck. Quantity spilled is unknown, but is so small that it isn't measureable noticed as missing from the total lube oil in the engine. Capacity of the engine is 30 gallons lube oil.

Materials Discharged							
	Amt Discharged: Quantity: 1 each Material Discharged: Engine Oil API Gravity:						
	Body Of Water Affected: GOM						
	Groundwater Affected: ☑ No ☐ Yes Water Intake Affected: ☑ No ☐ Yes						
	Spill Size: Length : 50 Feet Width : 2 Feet						
	Slick Size: Estimated percentage of area covered by slick: 55%						
	Spill Source: ☑ Source Secured Date And Time Date: 04/17/2024 Time: 19:15 (GMT-06:00) Central Time (US & Canada)						
	☐ Source Continuous-Estimated Rate Rate: each						
	Color Of Slick:	75%	Barely visible	25%	Silvery		Slight color
	Appearance Percentage:		Brightly colored		Dull		Dark

Facility Incident Report

Weather	Air Temp: 72 F	Water Temp: F
	Ceiling: Feet	Visibility: 12 Miles
	Wind Dir: NW Heading	Wind Velocity: 10 kph
	Seas: 1-3 Feet	High Tide Time: 00:00
	Current Dir: WNW	Current Speed: knots
Response Action	Actions Taken To Correct/ Mitigate Incident:	Secured the pinhole in the drain line with epoxy material and wrap
Additional Information	Injuries: 0	Fatalities: 0
	Evacuated: ☑ No ☐ Yes	
	Damage: ☑ No ☐ Yes	

Company Notifications

Reported By	Reported To(name)	Reported To(position)	Update 201-2	Time	Date
Devin Nguyen	Mike Nosbaum	Duty IC	☑	20:01	04/17/2024
Mike Nosbaum	Stephen Jeu	QI	☑	20:56	04/17/2024
Mike Nosbaum	Chuck West	Reporting Party	☑	20:19	04/17/2024

Agency Notifications

Reported By	Reported to(name)	Agency/Notification	Assigned#	Time	Date
Devin Nguyen	PCO Andrews	Alabama Emergency Management Agency		20:10	04/17/2024
Devin Nguyen	Threalt	USCG National Response Center	1396705	20:17	04/17/2024

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

JULY 11, 2023

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 7/17/2023

Address: 5718 Westheimer Road, Suite 700 City: Housotn State: TX Zip: 77057

1. Facility name: 6" Fuel Gas Pipeline 2. County: Mobile - OS

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract

Latitude (NAD27): 30.36972 Longitude (NAD27): 88.05133

3. Field (if wildcat, so state): N/A

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Clayton Campbell Reporting Date: 7/12/2023

Time: 3:30 PM Reported By (Company Representative): Kendra Sullivan

When Did Incident Occur? Date: 7/11/2023 Time: _____ AM ☐ PM ☒

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: No material spilled, gas leak from 6" fuel gas pipeline.

Estimated volume of spill or leak: _____

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Pin hole leak developed at 6 o' clock position on pipeline.

Measures taken to control fire, spill, leak or blow out: Mobilized dive vessel, pipeline clamp and dive crew

Measures taken to clean up: Gas leak with no H2S, no clean up required

Measures taken to prevent reoccurrence of this incident: Pipeline clamp has been installed around pipeline

Date that cleanup operations completed (if completed): 7/15/2023

Remarks: Pipeline was successfully repaired with a clamp and pressure tested for a period of 4 hours.

RECEIVED
AOGB MOBILE
7/26/23

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Kendra K Sull
Signature of Operator's Agent

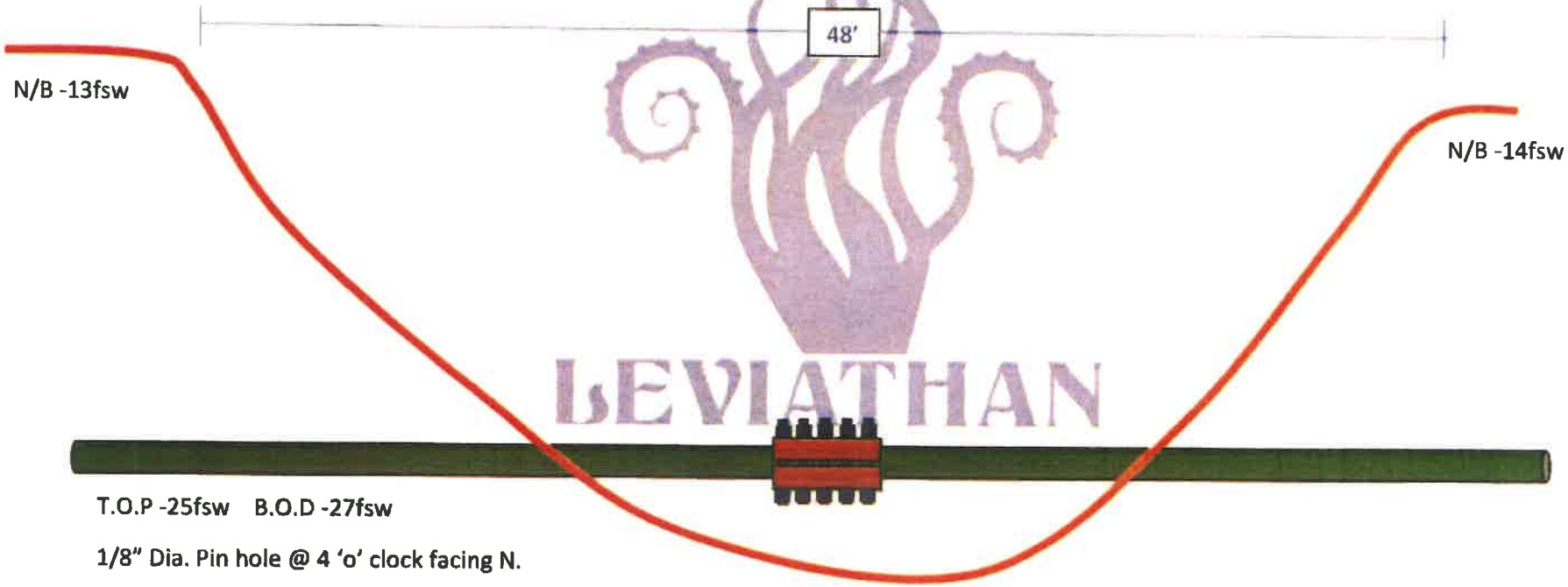
7/25/2023
Date

Leviathan Offshore LLC Phone (985) 746-5898 300 Bridge Rd. Houma LA. 70363 www.leviathanoffshorellc.com	Document Title Field Drawing 6in Fuel P/L Leak	Revision #: original
	Document Number Internal	Rev Date: 7/16/23

AMY 44 Field Drawing

6" Fuel P/L Leak

x=315,369.01ftUS E y=134420.56ftUS N



T.O.P -25fsw B.O.D -27fsw

1/8" Dia. Pin hole @ 4 'o' clock facing N.

Clayton Campbell

From: Leigh Blake
Sent: Wednesday, July 26, 2023 7:59 AM
To: Kendra Sullivan; Clayton Campbell; Butch Gregory
Subject: Re: 6-inch Fuel Gas Leak Report
Attachments: image001.png; July 2023 Fuel Gas Leak Report.pdf; AMY-44 6in PL fuel leak field drawing.pdf

Thank you. We will review. Has W&T been discussing the 78-1 issue. We need to set up a meeting to discuss. I never got a response from anyone.

Sent from my iPhone

> On Jul 26, 2023, at 7:06 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:
>
> Good Morning Leigh/Clayton,
>
> Attached for your review and records is the leak report form for the 6-inch fuel gas pipeline leak and diver field drawing showing clamp placement. I am waiting on final SCF calculation from our engineering consultant and will forward as soon as it is received.
>
> Should you have any questions or concerns please let me know.
>
> Sincerely,
>
> Kendra Sullivan
> Sr Regulatory Analyst
> +1 713 513 8629 (Direct) 346-316-5615 (Cell)
> ksullivan@wtoffshore.com | www.wtoffshore.com
> 5718 Westheimer Rd, Suite 700, Houston, TX, US, 77057-5745

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, November 18, 2024 3:21 PM
To: Leigh Blake; Clayton Campbell
Cc: Eric Harbison; Benjamin Reed
Subject: RE: 6-inch Fuel Gas Leak Report
Attachments: MB-76A-AUX Leak Estimate Rev B.pdf

Leigh,

Please see the attached leak estimation from WS Nelson for the 6-inch fuel gas pipeline leak. This was the 6-inch supply line originating at OTF and going to MB-76-Aux.

Sincerely,
Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5745



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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Monday, November 18, 2024 3:10 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Clayton Campbell <CCampbell@ogb.state.al.us>
Cc: Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>
Subject: RE: 6-inch Fuel Gas Leak Report

WARNING: This message has originated from an External Source. This may be a phishing email that can result in unauthorized access to W&T systems. Please use proper judgment and caution when opening attachments, clicking links or responding. If in doubt, please reach out to the service desk for assistance.

Did you ever get the final SCF calculation for this and which fuel gas line was this? From where to where?

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Wednesday, July 26, 2023 7:04 AM
To: Clayton Campbell <CCampbell@ogb.state.al.us>; Leigh Blake <LBlake@ogb.state.al.us>
Cc: Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>
Subject: 6-inch Fuel Gas Leak Report

Good Morning Leigh/Clayton,

Attached for your review and records is the leak report form for the 6-inch fuel gas pipeline leak and diver field drawing showing clamp placement. I am waiting on final SCF calculation from our engineering consultant and will forward as soon as it is received.

Should you have any questions or concerns please let me know.

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS AND ARCHITECTS
TX Reg. # F-000059

MB-76A-AUX Gas Pipeline
Leak Estimate
July 15, 2023



Document Number:	20230520-STUDY-P-001
Client Name:	W&T Offshore
Project Title:	MB-76A-AUX Pipeline
Job Number:	20230520-01

B	7/26/2023	Issued for Use	SWC	WDT		
A	7/18/2023	Issued for Review	SWC	WDT		
REV	DATE	DESCRIPTION	ORIG	APPROVALS		
APPROVED BY:		COMPANY APPROVAL:				
DATE:		DATE:				

PROCESS CALCULATIONS			
Client	W&T Offshore	Project No.	20230520-01
Project	MB-76A-AUX Pipeline	Rev.	B
Calculation Title	MB-76A-AUX Gas Pipeline Leak Estimate July 15, 2023	By	SWC
Calculation No.	20230520-STUDY-P-001	Checked	WDT
		Date	7/26/2023

1. PURPOSE

This calculation estimates the leak rate from the recent hole in the W&T produced gas pipeline. The pipeline is 6" diameter carbon steel and routes gas from MB 76A-AUX to the OTF.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B.R., Young, D.F., and Okiishi, T. H. 1998, 3ed.

3. NOTES

W&T provided the pressure and hole size for the leak in an email on July 17, 2023. The data has been summarised as follows:

The leak began on July 11, 2023 at about 16:00
The leak continued until a clamp was put on the pipeline on July 15 at 17:13
The leak occurred at a depth of 25 feet
The hole in the pipeline was estimated as 1/8"
Pipeline pressure was 450 psig

The accuracy of the estimated leak volume is ± 20%

4. SUMMARY CALCULATIONS

The flow through a hole in a pipeline can be estimated using the following formula:

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m³/s
C = coefficient of discharge, 0.62
A = Area of the hole, m²
ΔP = pressure differential, Pa
ρ = liquid density, kg/m³

C = 0.62
D = 0.125 in = 0.003175 m
A = 7.92E-06 m²

ΔP = the pressure difference across the hole in the pipe. In this instance, the flow through the hole is choked so the outlet pressure is about 50% of the inlet pressure.

Pin =	450 psig =	464.7 psia =	3,203,990 Pa
Pout =	225 psig =	239.7 psia =	1,652,672 Pa

Since this is a gas, the density can be found from the following formula:

$$\rho = \frac{P\,MW}{z\,R\,T}$$

ρ = gas density, g / m³
MW = molecular weight, g / mol
z = gas compressibility
R = 8.314 m³ Pa / mol K
T = temperature of the gas, K

MW = 18.6 g / mol (from the latest gas HYSYS model)
z = 0.92 (from the latest gas HYSYS model)
R = 8.314
T = 74 °F = 533.67 R = 296.5 k

ρ = 26,279 g / m³ = 26.28 kg / m³

Substituting into the first formula, the leak rate can be estimated.

Q = 0.00169 m / s³ = 6.07 m³ / h = 214.4 ft³ / h

The actual volume found above needs to be converted to standard cubic feet using the following

$$Vscf = \frac{Vact * Pact * Tstd}{zact * Pstd * Tact}$$

Vact = actual volume, ft³
Pact = actual pressure, psia
Pstd = standard pressure = 14.7 psia
Tact = actual temperature, °R
Tstd = standard temperature = 60 °F = 519.67 °R
zact = actual gas compressibility

Vscf = 7,173.9 SCFH

The leak continued for 94 hours so the total volume leaked is:

Vtot = 7,173.9 SCFH * 97 h

Vtot = 695,869 SCF

5. CONCLUSIONS

The total volume of gas that leaked out of the pipeline from July 11 through July 15, 2023 is estimated at 0.7 MMSCF.

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

FEBRUARY 4, 2023

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

OGB-27

5-10-2023

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable) _____

01- - GA LB
API Number (if applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 2/27/2023

Address 5718 Westheimer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name Yellowhammer 6-inch Produced Water Line 2. County Mobile

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) Section-Township-Range or Tract T7S R2W

Latitude (NAD27) 30.39985 Longitude (NAD27) 88.11885

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 2/4/2023

Time: 1:52 PM Reported By (Company Representative): Eric Harbison

When Did Incident Occur? Date: 2/4/2023 Time: 11:35 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced liquids

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☒ ? No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: _____

Material entered a stream, creek, swamp, or and water area? Yes ☐ No ☒

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: 3/8-inch L x 1/4-inch W hole on bottom of pipeline

Measures taken to control fire, spill, leak or blow out: Booms

Measures taken to clean up: Absorbent pads and excavation of area

Measures taken to prevent reoccurrence of this incident: RTP liner will be placed inside of the pipeline

Date that cleanup operations completed (if completed): Operations are ongoing

Remarks:

RECEIVED
AOGB MOBILE
2/28/23

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

2/28/2023
Date

Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Monday, February 6, 2023 8:27 AM
To: Leigh Blake; Clayton Campbell
Cc: Kendra Sullivan
Subject: 6" line issue

Follow Up Flag: Follow up
Flag Status: Flagged

All,
We have a issue on the 6" line we have it isolated and are in the process of excavating to identify the point. We will keep you update as we are able to better identify the exact problem.
Please reach out to me and I will answer questions going forward.
Thank you,

Eric Harbison
Mobile Bay district Supervisor
1-251-973-4601 (Direct) 1-251-509-2992 (Cell)
eharbison@wtoffshore.com | www.wtoffshore.com
13700 Dauphin Island Pkwy, Coden, AL, US, 36523-2920

W&T OFFSHORE

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Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Wednesday, February 8, 2023 10:47 AM
To: Clayton Campbell; Leigh Blake
Cc: Kendra Sullivan
Subject: 6" produced water line

Leigh and Clayton,
We have the clamp installed and are getting ready to preform the pressure test.
Thank you,

Eric Harbison
Mobile Bay district Supervisor
1-251-973-4601 (Direct) 1-251-509-2992 (Cell)
eharbison@wtoffshore.com | www.wtoffshore.com
13700 Dauphin Island Pkwy, Coden, AL, US, 36523-2920



W&T OFFSHORE

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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Thursday, February 9, 2023 2:26 PM
To: Leigh Blake; Clayton Campbell
Cc: Eric Harbison; Alan Greig, Jr.; Benjamin Reed; Marsh Armitage; Mark Fanning
Subject: 6-inch Produced Water Line Leak

Follow Up Flag: Follow up
Flag Status: Completed

Good Afternoon Leigh,

As you have been made aware, the pipeline accumulated additional leaks after the pressure test on the pipeline. As a temporary solution to the additional leaks, W&T would like to install wraps around the pipeline as a temporary measure to be able to pig the line prior to engaging in a long term solution. We feel these wraps have the capability of holding pressure while the pipeline is being pigged to clean out the line.

The fluids will be sent to Yellowhammer and disposed of properly at OTF.

Should you have any questions regarding the above information please contact Eric.

Thank you,

Kendra Sullivan
Sr. Regulatory Analyst
+1 713 513 8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700, Houston, TX, US, 77057-5745



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Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Wednesday, February 15, 2023 2:49 PM
To: Leigh Blake; Clayton Campbell
Cc: Eric Harbison; Alan Greig, Jr.; Benjamin Reed; Marsh Armitage; Mark Fanning
Subject: Re: [EXTERNAL]RE: 6-inch Produced Water Line Leak

Follow Up Flag: Follow up
Flag Status: Completed

Hi Leigh,

Yes, our engineering who works with our engineering consultant on spill calculations is out this week. I should be able to send in the OGB-27 next week.

Kendra Sullivan
Sr. Regulatory Analyst
+1 713 513 8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700, Houston, TX, US, 77057-5745

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Get Outlook for iOS

From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Wednesday, February 15, 2023 2:46:22 PM
To: Kendra Sullivan <ksullivan@wtoffshore.com>; Clayton Campbell <CCampbell@ogb.state.al.us>
Cc: Eric Harbison <eharbison@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Marsh Armitage <marmitage@wtoffshore.com>; Mark Fanning <mfanning@wtoffshore.com>
Subject: [EXTERNAL]RE: 6-inch Produced Water Line Leak

Kendra,

Are you preparing the OGB-27?

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Thursday, February 9, 2023 2:26 PM
To: Leigh Blake <LBlake@ogb.state.al.us>; Clayton Campbell <CCampbell@ogb.state.al.us>
Cc: Eric Harbison <eharbison@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Marsh Armitage <marmitage@wtoffshore.com>; Mark Fanning <mfanning@wtoffshore.com>
Subject: 6-inch Produced Water Line Leak

Good Afternoon Leigh,

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, February 27, 2023 2:31 PM
To: Leigh Blake
Cc: Clayton Campbell; Alan Greig, Jr.; Eric Harbison; Benjamin Reed
Subject: RE: Yellowhammer 6-inch Produced Water Line Leak Proposed Repair
Attachments: 2-4-2023 OGB-27 Report 6-inch PW Pipeline Leak.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Good Afternoon Leigh,

Please find attached initial filing of the OGB-27 report for the Yellowhammer 6-inch pipeline leak which occurred on February 4th 2023.

Should you have any questions or concerns regarding the attached please let me know.

Thank you,

Kendra Sullivan
Sr. Regulatory Analyst
+1 713 513 8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700, Houston, TX, US, 77057-5745



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From: Kendra Sullivan
Sent: Friday, February 10, 2023 7:14 AM
To: 'Leigh Blake' <LBlake@ogb.state.al.us>
Cc: 'Clayton Campbell' <CCampbell@ogb.state.al.us>; Alan Greig, Jr. <agreig@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>
Subject: Yellowhammer 6-inch Produced Water Line Leak Proposed Repair

Good Morning Leigh,

W&T Offshore, Inc., after consideration of current conditions and future use of the produced liquids line near the Yellowhammer Plant, proposes to rehabilitate the pipeline by installing a 4-inch 1,000 PSI x 1.75 mile long Thermoflex Plus PPS liner from Baker Hughes. Please find attached to this email a site visit report from BakerHughes and Liner Presentation. W&T is currently working on a formal application for review and approval by AOGB with an anticipated project start date of early April 2023.

W&T will continue to isolate the current leaks using pipeline wraps. The wraps will be able to hold the leaks allowing the use of a cleaning pig to purge the line prior to the installation of the liner.

Should you have any questions or concerns please advise.

Sincerely,

Leigh Blake

From:	Kendra Sullivan <ksullivan@wtoffshore.com>
Sent:	Thursday, April 6, 2023 8:01 AM
To:	Leigh Blake
Cc:	Clayton Campbell; Alan Greig, Jr.
Subject:	Yellowhammer 6-inch Produced Water RTP Liner Proposal
Attachments:	AOGB RTP Proposal.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Good Morning Leigh,

W&T Offshore, Inc. herein submits for your review and records our proposal to rehabilitate the 6-inch produced water line by placing a Thermoflex liner within the pipeline. It is our intention to begin this project May 2023. W&T will provide notification to AOGB 24 hours in advance before work begins.

Should you have any questions or concerns with the proposal please advise.

Thank you,

Kendra Sullivan
Sr. Regulatory Analyst
+1 713 513 8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700, Houston, TX, US, 77057-5745

W&T OFFSHORE

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See email 4/6/23 46 pages

W&T OFFSHORE

April 5, 2023

Dr. Berry H. (Nick) Tew, Jr., Supervisor
State Oil and Gas Board of Alabama
420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999

Dear Dr. Tew, Jr.,

W&T Offshore, Inc., in accordance with Gold Book Rule 400-1-8-.03 herein submits this application to use Thermoflex Reinforced Thermoplastic Pipe (RTP) as a repair for the 6-inch produced water pipeline between Fairway Pigging Facility/Yellowhammer Plant and the Fairway Shoreline Facility.

Overview -
The 6-inch produced water pipeline had a leak that was noticed on February 4, 2023 in which W&T attempted to repair the pipeline with a clamp. Upon pressure testing the pipeline additional leaks were discovered showing deterioration in the integrity of the pipeline. On March 21, 2023, the pipeline was pigged in preparation for this proposed repair.

W&T will repair the 6-inch pipeline with a 3-inch Reinforced Thermoplastic Pipe which will be inserted inside the existing pipeline. In addition, the Yellowhammer Saltwater Disposal Well #1 has been reactivated to ease pressure on the 6-inch and 8-inch pipelines.

Enclosed is the following:

- Baker Hughes Thermoflex Product Information

Should you have any questions concerning this application please contact me at (713) 513-8629 or ksullivan@wtoffshore.com or Alan Greig at (713) 297-8014 or agreig@wtoffshore.com.

Sincerely,

Kendra Sullivan
Sr. Regulatory Analyst

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, April 10, 2023 11:24 AM
To: Leigh Blake
Subject: RE: [EXTERNAL]RE: [EXTERNAL]RE: [EXTERNAL]RE: 6-inch Produced Water Line Leak

I think we had talked about a revision until the other leaks popped up and we left it at unknown for amount at that point.

Kendra Sullivan
Sr. Regulatory Analyst
+1 713 513 8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700, Houston, TX, US, 77057-5745



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From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Monday, April 10, 2023 11:21 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: [EXTERNAL]RE: [EXTERNAL]RE: [EXTERNAL]RE: 6-inch Produced Water Line Leak

EXTERNAL EMAIL WARNING - This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. If in doubt, please reach out to the service desk for assistance.

Thank you. Don't know why I have it on my board with waiting on revisions. Sorry

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Monday, April 10, 2023 9:15 AM
To: Leigh Blake <LBlake@ogb.state.al.us>; Clayton Campbell <CCampbell@ogb.state.al.us>
Cc: Eric Harbison <eharbison@wtoffshore.com>; Alan Greig, Jr. <agreig@wtoffshore.com>; Benjamin Reed <breed@wtoffshore.com>; Marsh Armitage <marmitage@wtoffshore.com>; Mark Fanning <mfanning@wtoffshore.com>
Subject: RE: [EXTERNAL]RE: [EXTERNAL]RE: 6-inch Produced Water Line Leak

Good Morning Leigh,

The attached report that was sent on February 27, 2023 is the final report.

If you should need anything else please let me know.

Sincerely,

Kendra Sullivan
Sr. Regulatory Analyst
+1 713 513 8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700, Houston, TX, US, 77057-5745

Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Wednesday, May 24, 2023 4:06 PM
To: Leigh Blake; Clayton Campbell
Cc: Kendra Sullivan
Subject: 6" RTP line going in service

Leigh,
We are putting the 3" RTP in the 6" line from Yellowhammer to shore base is being put back in service today. I just want to follow up and inform you as requested when we went in service with the line.
Thank you,

Eric Harbison
Mobile Bay district Supervisor
1-251-973-4601 (Direct) 1-251-509-2992 (Cell)
eharbison@wtoffshore.com | www.wtoffshore.com
13700 Dauphin Island Pkwy, Coden, AL, US, 36523-2920



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OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

AUGUST 26, 2022

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

OGB-27

5-10-2023

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable)

01- GA LB
API Number (if applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore, Inc. Date 11/16/2022

Address 5718 Westheimer Road, Suite 700 City Houston State TX Zip 77057

1. Facility name: Bundle 99, 6" Pipeline Yellowhammer
2. County: Mobile

3. Facility Location* (surface)
(give footage from nearest section or offshore tract lines)
1759.142 feet FWL, 5587.374 feet FSL
Section-Township-Range or Tract: T7S R2W

Latitude (NAD27): 30.39985 Longitude (NAD27): 88.11885

3. Field (If wildcat, so state): N/A

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 08/26/2022

Time: 12:15 PM Reported By (Company Representative): Valerie Greeve

When Did Incident Occur? Date: 08/26/2022 Time: 11:00 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred:

Material spilled: Produced Water

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: One mile of the pipeline right-of-way was affected.

Material entered a stream, creek, swamp, or and water area? Yes ☐ No ☒

If yes, identify other state and federal agencies that were notified:

Agency: ADEM Contact Person: Steven Summersell

Agency: Contact Person:

CAUSE AND ACTIONS

Circumstances causing the incident: Leak on 6" produced water pipeline

Measures taken to control fire, spill, leak or blow out: Wells from MB-113 were shut in and pipeline bled down

Measures taken to clean up: Pads and absorbent booms were utilized

Measures taken to prevent reoccurrence of this incident: See notes below

Date that cleanup operations completed (if completed): See notes below

Remarks: Pipeline clamp with anodes was installed and successfully pressure tested. A corrosion inhibitor was batched into the pipeline and corrosion monitoring will continue. Active clean up was completed 09/10/2022.

RECEIVED
AOGB MOBILE
11/16/22

This report is an amendment from initial report filed on 08/26/2022.

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

11/16/22
Date

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev 07/13
(File in duplicate)

Permit Number (if applicable): _____ API Number (if applicable): 01- _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc

Address: 13700 Dauphin Island Parkway City: Coden State: AL Zip: 36523 Date: 8-26-2022

1. Facility name: Bundle 99, 6" Pipeline Yellowhammer

2. County: Mobile

3. Facility Location* (surface): (give footage from nearest section or offshore tract lines) 1759.142 feet FWL 5587.374 feet FSL; Section-Township-Range or Tract: T7S R2W

Latitude (NAD27): 30.39985 Longitude (NAD27): 88.11885

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake

Time: 12:15 pm Reported By (Company Representative): Valerie Greeve Reporting Date: 8/26/22

When Did Incident Occur? Date: 8/26/22 Time: 11:00 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: N/A

Material spilled: Produced Water

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☒ No ☐

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Pipeline right-of-way

Material entered a stream, creek, swamp, or and water area? Yes ☐ No ☒ Flooded pipeline right of way

If yes, identify other state and federal agencies that were notified:

Agency: AOGB Contact Person: Leigh Blake

Agency: ADEM Contact Person: Steven Summersell

CAUSE AND ACTIONS

Circumstances causing the incident: leak on 6" produced water pipeline

Measures taken to control fire, spill, leak or blow out: shut in wells and bleed down pipeline

Measures taken to clean up: Absorbent booms and pads

Measures taken to prevent reoccurrence of this incident: *Note #1 below

Date that cleanup operations completed (if completed): *Note #2 below

Remarks:

*Note 1: Pipeline clamp with anodes installed, pressure test passed, corrosion inhibitor batched into pipe, and ongoing corrosion inhibitor monitoring

*Note 2: Daily active cleanup completed 9-10-2022, monitoring and maintenance ongoing

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Eric W Harrison
Signature of Operator's Agent

09/14/2022
Date

RECEIVED
AOGB MOBILE
9-14-2022

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ▪ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

January 19, 2023

CERTIFIED MAIL 9489 0090 0027 6295 4216 49

Mr. Steve Hamm
W & T Offshore
5718 Westheimer Rd., Ste 700
Houston, Texas 77057-5745

Dear Mr. Hamm:

Re: Groundwater Incident Letter
Yellowhammer Pipeline Spill Location
30.399894N, -88.118883W
Theodore, Mobile County, Alabama
GW Incident: GW23-01-01

Based on the Summary of the NRC Number 1346015's Initial Abatement and sampling Report dated December 22, 2022, an undetermined amount of produced water was released on August 31, 2022 from the Yellowhammer pipeline resulting in chemicals of potential concern (COPCs) having been released to surface water, soil, and/ or groundwater at the referenced location. This represents an unpermitted discharge of pollutants to waters of the State, which is a violation of the Code of Alabama, 1975, Section 22- 22- 9(i)(3).

Therefore, an investigation must be conducted as required by ADEM Admin. Code r. 335- 6- 8- 06(d) to define the horizontal and vertical extent of soil and groundwater contamination. The investigation should be performed in accordance with the Alabama Environmental Investigation and Remediation Guidance (AEIRG), which is available on the Department's website at https: adem.alabama.gov programs land landforms AEIRGInvestiaion.pdf.

The investigation should be conducted by a geologist or engineer licensed to practice in the State of Alabama. Laboratory detection limits must be adequate to detect the most current Regional Screening Levels (RSLs) as contained in the EPA Master RSL "New tables" located at https: www.epa.gov risk/regional-screening-levels-rsls-generic-tables.

A work plan for the investigation should be submitted to ADEM by **February 18, 2023**. The work plan should also document the estimated volume of produced water released and any emergency response cleanup activities conducted on site.

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608
(251) 304-1176
(251) 304-1189 (FAX)

If free product is encountered, a free product recovery program should be initiated immediately to inhibit further migration of the product. A report documenting all free product recovery efforts should be developed and submitted to ADEM on a weekly basis.

In order to keep accurate records, the Department has assigned a Groundwater Incident Number for this release. Please include the incident number **GW23-01-01** on the subject line of correspondence concerning the release. All reports and correspondence should be submitted in electronic format via email or by utilizing an on-line file sharing service.

If you have questions regarding this letter, please contact Steve Cape at (334)270-5603 or by email at stephen.cape@adem-alabama.gov.

Sincerely,

Vernon H Crockett

Vernon H. Crockett, Chief
Groundwater Branch
Land Division

VHC/JRK/SC/cy

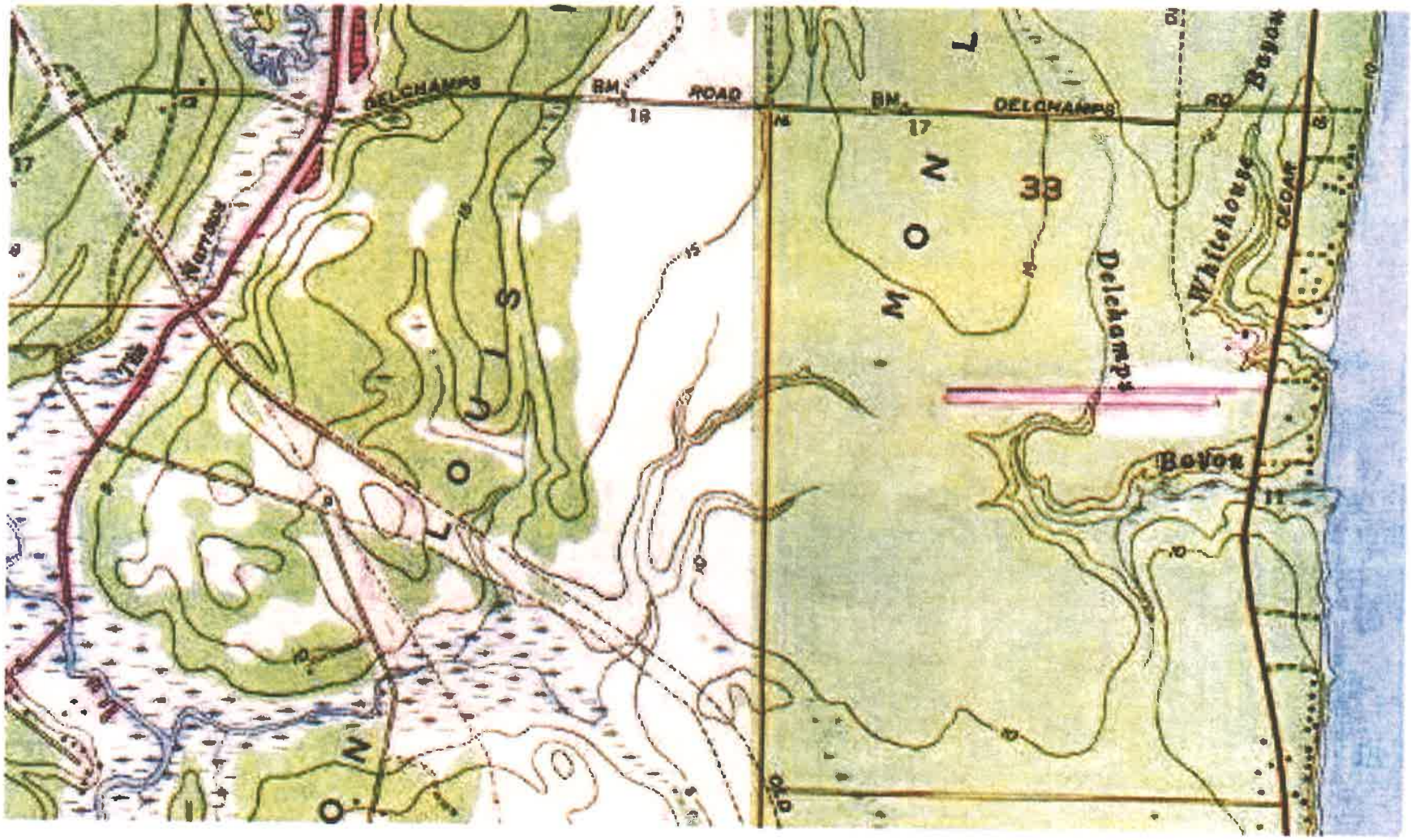
W & T Offshore

NRC Report Number 1346015

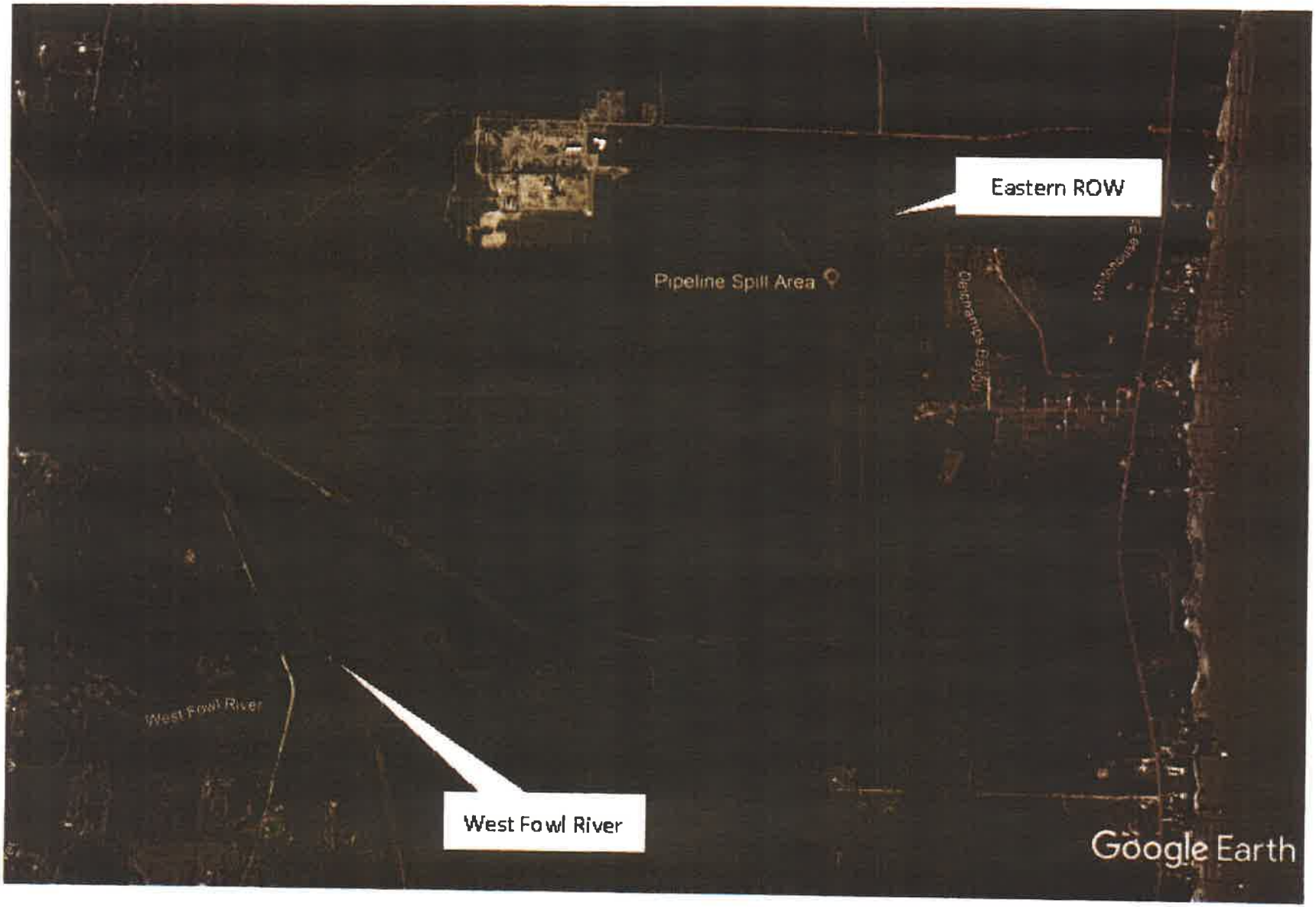
Mobile County

09-07-2022

S. Summersell



Topographic Map.


Eastern ROW
Pipeline Spill Area
West Fowl River
West Fowl River
Google Earth



Wetland equipment mats in-use.



North of the pipeline spill area, facing North.



North of pipeline spill area, facing south.

Marvin Rogers

From: Leigh Blake
Sent: Monday, September 29, 2025 11:03 AM
To: Kendra Sullivan
Cc: Butch Gregory; Kirk McQuillan; Marvin Rogers; Elbert Patterson; Clayton Campbell; Joshua Young
Subject: 4-inch Produced Liquid Line Repair Plan from Shoreline to OTF
Attachments: Onshore 4-inch Liquids Pipeline Repair Procedure_REV1_ Signed.pdf; Onshore 4-inch Liquids Pipeline Repair Procedure_REV1_ Signed.pdf; WT 4 inch pl onshore leak 1.jpg; WT 4 inch pl onshore leak 1 clamp.jpg; WT 4 inch pl onshore leak 2.jpg; WT 4 inch pl onshore leak 2 clamp.jpg

Importance: High

Kendra,

Thank you for submitting the above two repair procedures for the 4" produced liquids line from shoreline to OTF. Please submit the OGB-27 to cover both spills and provide details as we discussed over the weekend. Additionally, please submit UT readings for both leaks and produced liquids line sample analysis collected before the OTF separator. **This line must remain shut in until an approved pressure test is witnessed.** Please keep OGB updated on plans for this line. For reference, I have attached the photos of pipeline leaks and clamp repairs.

Thank you,
Leigh

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Saturday, September 27, 2025 10:23 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: Re: 4-inch Produced Liquid Line Repair Plan

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) **346-316-5615** (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



A U.S. Company safely supplying energy for its Country

From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Saturday, September 27, 2025 10:22:04 AM
To: Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: Re: 4-inch Produced Liquid Line Repair Plan

No attachment

On Sep 27, 2025, at 8:34 AM, Kendra Sullivan <ksullivan@wtoffshore.com> wrote:

Good Morning Leigh,

Please find attached for your review and approval the second leak site repair plan.

Regards,

Kendra Sullivan
Sr. Staff Regulatory Analyst
(713) 513-8629 (Direct) 346-316-5615 (Cell)
ksullivan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5784



A U.S. Company safely supplying energy for its Country

This email (and any attachments thereto) is intended only for use by the addressee(s) named herein and may contain legally privileged and/or confidential information. If you are not the intended recipient of this email, you are hereby notified that any dissemination, distribution or copying of this email (and any attachments thereto) is strictly prohibited. If you receive this email in error, please immediately notify me, and permanently delete the original email (and any copy of any email) and any printout thereof.

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W&T Offshore, Inc.
Mobile Bay 4" Produced Liquids
Pipeline Repair Procedure
Rev.0; 09/26/2025

A. General

Regulatory Contact / Phone	Kendra Sullivan; (713) 513-8629
Technical Contact / Phone	Ryan Duhon; (251) 973-4641
Segment number	N/A
Work Location – platform or Latitude / Longitude	Approximate, based on surface visual LAT 30°25'37.28"N LONG 88°10'28.54"W
Product Code	Produced Liquid
Approximate length	33,850 ft
Water depth at repair location	Inland
MAOP	1,480 psig
Operating pressure range	200 - 400 psig
Failure Description	Pipeline Leak
General repair description	**Repair** 1. Make appropriate regulatory notifications. 2. Isolate the pipeline from pressure sources at the Onshore Treating Facility (OTF) and at the Shoreline Valve Site. 3. Hold a Safety Meeting and perform Job Safety Analysis, as necessary. 4. This pipeline, and nearby lines in this right-of-way, were located and marked with an Electromagnetic Locator and probing on 9/23/25. 5. W&T Offshore, Inc. will perform excavation activities in conjunction with the DOT Operations and Maintenance Manual. 6. Excavation activities include traditional excavation, hydro excavation truck, and hand tools 7. Expose a sufficient work area for the PLIDCO Split-Sleeve repair clamp installation. 8. Perform UT wall thickness readings around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 9. Install a PLIDCO 4" x 18" LG. Split + Sleeve clamp onto the pipeline and prepare an as-built drawing. 10. Apply Belzona Epoxy system on the exposed pipe. 11. Back-fill trench. Leave pipeline out of service until hydrotest is performed and charted. 12. Derig and demobilize the construction spread from location.
Alternate Compliance	N/A
Date leak detected	09/23/2025
Planned date for start of repair	09/26/2025
Planned date for start of leak test	TBD
Planned date to return to production	TBD
Signature / Date of reviewing Facilities Engineer	
Signature / Date of Facilities Manager or alternate reviewer	

B. Materials Specifications

Pipe outer diameter:	4.5"
Wall thickness	0.237" / API 5L Gr.X-60 SMLS
Minimum wall thickness required for MAOP	0.173" without corrosion allowance
Design factor (0.72 or 0.60)	0.72
Flange size / rating / face type:	4" / ANSI 600 / RF
Coating:	Fusion Bond Epoxy
Repair clamp manufacturer / pressure rating / coverage length	PLIDCO / 1,500 psi / 18" L minimum
Subsea connectors	N/A

C. Shop Fabrication Procedures

Welding Code:	N/A
NDE	N/A
Pressure testing	N/A

D. Mechanical Integrity Check Procedures

Wall thickness check	The pipe will be ultrasonically tested (UT) for wall thickness at a distance of two (2) feet on each side of the leak point at 3, 6, 9, and 12 o'clock positions.

E. Purging / Decommissioning Prior to Disassembly

Purging / Pigging	Pipeline is currently depressurized
Energy Isolation	• Shoreline – Close 4" Above Ground Manual Ball Valve • OTF – Close 4" Ball Valve at Pig Launcher
Handling method for vented gas and displaced liquid hydrocarbons	N/A
Allocation plan for fluids downstream of sales meters removed from pipeline	N/A

F. Offshore Disassembly Procedure

Regulatory Notification	Notify AOGB of the proposed repair procedure prior to mobilization
Cutting method for removal of pipe material	N/A
Pollution prevention measures (pollution dome, absorbent pads, etc)	N/A, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per Contractor's standard procedures and steps listed in Section A.

G. Offshore Installation and Testing Procedures

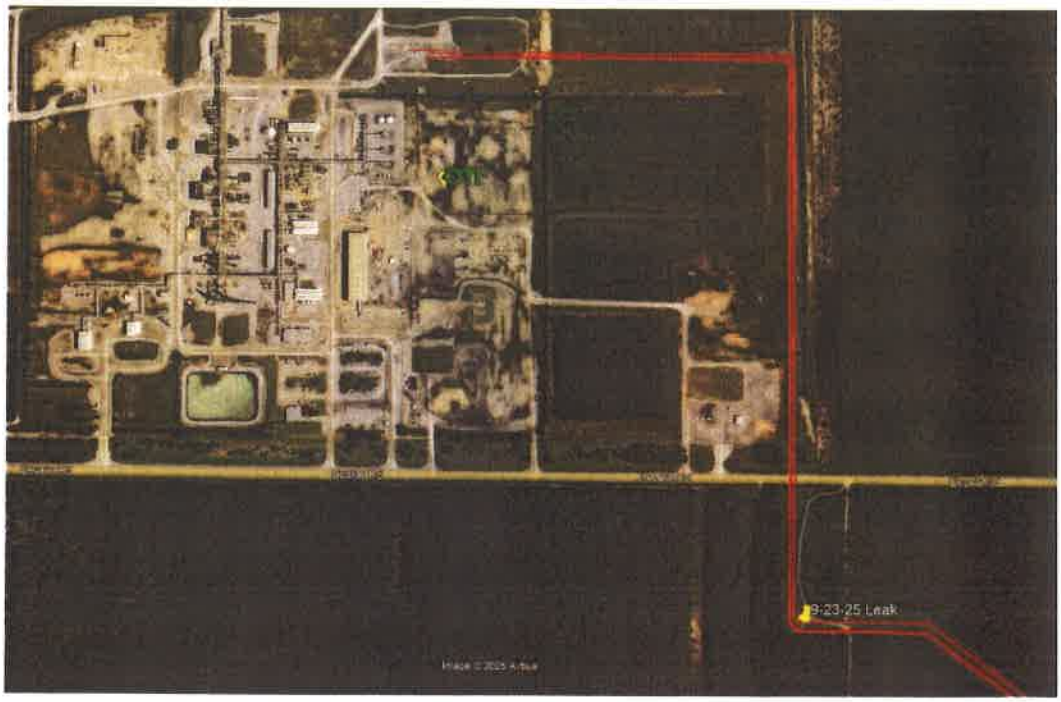
Safe rigging practices	Per Contractor's standard procedures. Contractor approved deviations to standard procedures may be required upon water depth and rigging constraints.
Welding Code:	N/A
Welding and burning safe practices	N/A
NDE	N/A
Weld area coating repair	N/A
Subsea connectors	N/A
Flange make-up	N/A
Riser protection from marine vessel impact (replacement risers)	N/A
Pressure / leak testing	Prior to returning to service, perform a four (4) hour leak test with fresh dilution water or sweet gas at 1.25 times operating pressure.

H. Return to Service

Regulatory Approval	None required
Handling method for hydro test water	N/A
Hydrate prevention for dry gas pipelines	N/A; not a dry gas system
Pipeline recover / reburial	Replace natural cover

B. Attachments

Map



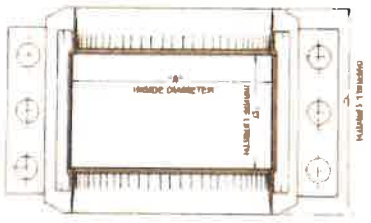
Repair Clamp

PLIDCO® SPLIT+SLEEVE

Stops the Leak Without Welding

PLIDCO® Split+Sleeves are repair fittings that can be used to seal leaks caused by corrosion or damage on onshore and subsea pipelines. PLIDCO® Split+Sleeves are easy and safe to install. The leak is sealed once the fitting is fully torqued on the line. For a permanent repair, the fitting can be welded to the pipeline while it is under flow. Fittings not welded to the line can be removed, reconditioned by PLIDCO® and put back in the customers safety stock. Fittings are tested to 1.5 times the design pressure. Steel GirderRings prevent displacement & damage of packing during installation. Standard working pressure is 1000 maop. Higher working pressures are also stocked and various lengths are available. Custom emergency repair fittings are an option when a stock fitting is not applicable.

Viton packing is standard.
Buna-N, Silicone and other
materials are available upon request.

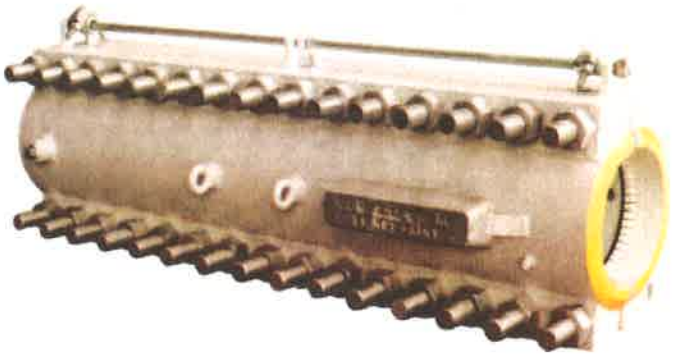


Standard Body Material
- SA-A350 Gr. LF2 Cl1
- SA-A516 Gr. 70
- Standard bolting is SA-A193 Gr. B7 with SA-A194 Gr. 2H nuts



Options:
- Marine epoxy paint for corrosion protection
- Hinges to ease with installation and handling
- Vents available per customer specifications
- Anodes for cathodic protection
- NACE MR0175/ISO 15156 compliant materials

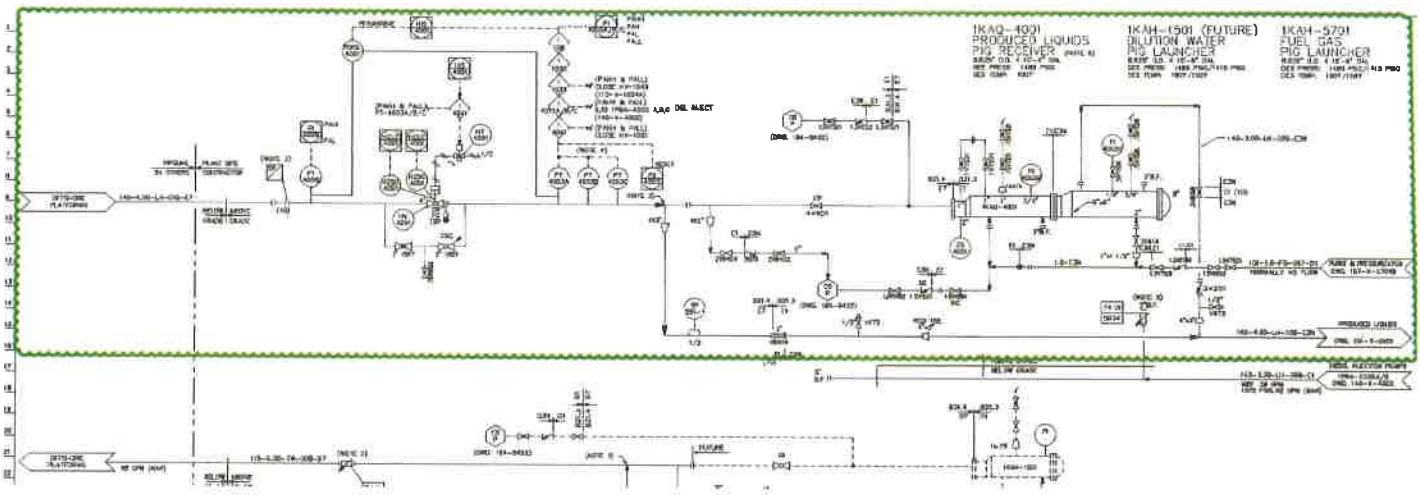
STANDARD LENGTH PLIDCO® SPLIT+SLEEVE SPECIFICATIONS 1000 MAOP				
API Pipe Sizes	Inside Diameter "A"	Inside Length "D"	Overall Length "C"	Approx. Weight
Inches	Inches	Inches	Inches	Pounds
1-1/2	2-7/8	5-1/4	8-1/2	26
2	3-1/8	5-3/4	9	23
2-1/2	3-3/8	5-1/4	8-1/2	70
3	4	5-1/4	8-1/2	34
4	5	5-1/4	8-1/2	42
6	7-1/8	5-1/4	9	62
8	9-1/8	5-1/4	10	125
10	11-1/4	5-1/2	10-1/2	147
12	13-1/4	5-1/2	10-1/2	230
14	14-1/2	8	14	385
16	16-1/2	8	14	420
18	18-1/2	8	14	555
20	20-1/2	8	14	580
22	22-1/2	8	14	635
24	24-1/2	8	14	680
26	26-1/2	8	14	865
28	28-1/2	8	14	930
30	30-1/2	8	14	990
32	32-1/2	8	14	1025
34	34-1/2	8	14	1200
36	36-1/2	8	14	1330
38	38-1/2	8	14	1405
40	40-1/2	8	14-1/8	1445
42	42-1/2	8	15-7/8	1805
48	48-1/2	8	15-7/8	2220



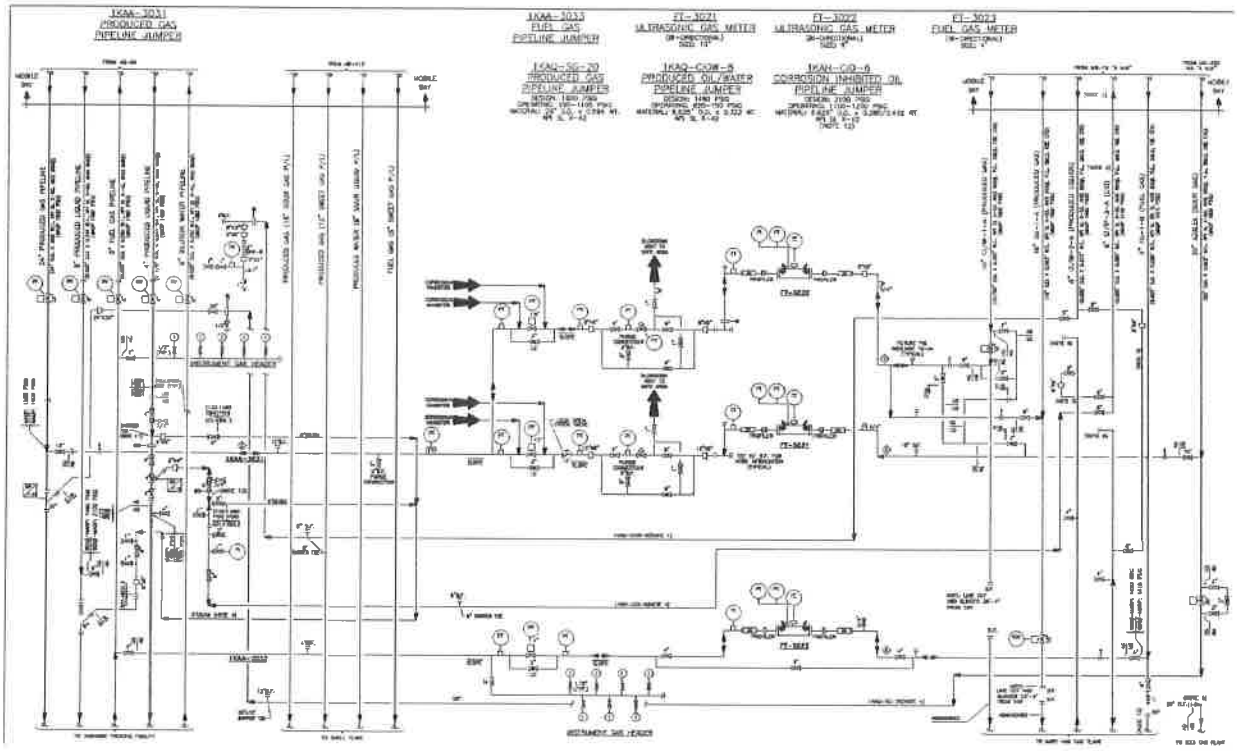




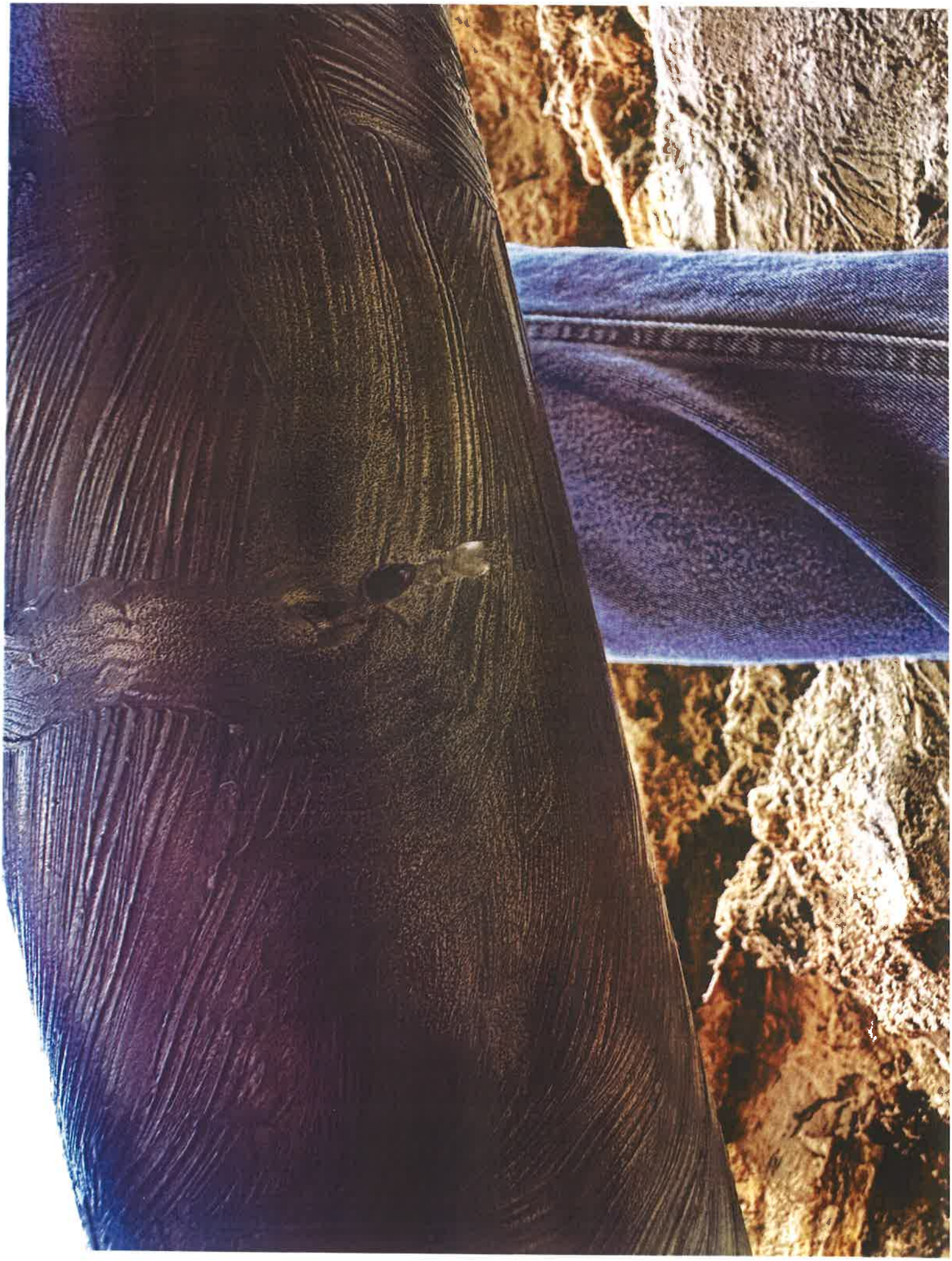
4-Inch Produced Liquids Pipeline at OTF



4-Inch Produced Liquids Pipeline at Shoreline











View of eastern side of pipeline ROW (North of spill area), appearing to containing site water, view facing south.



Spill area, facing North.



Closeup of pit dug to clamp pipeline, facing west.



South of spill area, view facing North.



View of area near UT to West Fowl River, facing west.



Low area on eastern side off ROW (south of spill area), facing southeast.



Berm feature area, facing North.



North of berm feature area, facing south.



Southern most portion of ROW south of the spill area, facing SSW.



Southern most portion of ROW south of the spill area, facing SSE.



Eastern ROW, facing North.



Eastern ROW, facing east.



Eastern ROW, facing south.

W&T Offshore, Inc.
Mobile Bay 113-A "Fairway"
Pipeline Repair Procedure
Rev.0; 09/02/2022

A. General

Regulatory Contact / Phone	Kendra Sullivan; 713-513-8629
Technical Contact / Phone	Alan Greig, Jr.; 713-297-8014
Segment number	N/A
Work Location – platform or Latitude / Longitude	Approximate, based on surface visual LAT 30.399855°N LONG -88.118851°W
Product Code	Produced Liquid
Approximate length	9,240 ft
Water depth at repair location	Inland
MAOP	1,430 psig
Operating pressure range	400 - 450 psig
Failure Description	Pipeline Leak
General repair description	**Repair** 1. Make the appropriate regulatory notifications. 2. Isolate the pipeline from pressure sources at the Yellowhammer Plant and at the Shoreline Valve Site. 3. Hold a Safety Meeting and perform Job Safety Analysis', as necessary. 4. Temporarily pressurize the pipeline with processed sweet gas or Fresh Dilution Water to create a visual indication of the leak source. 5. Physically identify the location of the adjacent 8", 12", and 16" Fairway pipelines. 6. Utilize excavation tools and visually locate the leak source. 7. Expose a sufficient work area for the PLIDCO Split-Sleeve repair clamp installation. 8. Perform UT wall thickness readings around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 9. Install a PLIDCO 6" x 9" LG. Split + Sleeve clamp onto the pipeline and prepare an as-built drawing. 10. Utilizing sweet gas and/or fresh dilution water from Yellowhammer, pressurize the pipeline to 550 psig for 4 hours. Record pressure and temperature. 11. Upon a successful pressure testing, depressurize the pipeline, recover the pipeline to natural bottom, and re-open the isolation valves. Return the pipeline to service. 12. Derig and demobilize the construction spread from location.
Alternate Compliance	N/A
Date leak detected	08/26/2022
Planned date for start of repair	09/03/2022
Planned date for start of leak test	09/04/2022
Planned date to return to production	09/04/2022

W&T Offshore, Inc.
Mobile Bay 113-A "Fairway"
Pipeline Repair Procedure
Rev.0; 09/02/2022

Signature / Date of reviewing Facilities Engineer	Alan Greig. Jr. Digitally signed by Alan Greig, Jr. DN: CN = Alan Greig, Jr. email = agreig@wtoffshore.com, C = US, O = W and T Offshore, Inc., OU = Facilities Date: 2022.09.05 10:59:10 -05'00'
Signature / Date of Facilities Manager or alternate reviewer	Eric W Hahn 9/2/2022

B Materials Specifications

Pipe outer diameter:	6.625"
Wall thickness	0.312" / API 5L Gr.X-60 SMLS
Minimum wall thickness required for MAOP	0.126" without corrosion allowance
Design factor (0.72 or 0.60)	0.72
Flange size / rating / face type:	6" / ANSI 900 / RTJ
Coating:	Fusion Bond Epoxy
Repair clamp manufacturer / pressure rating / coverage length	PLIDCO / 2,220 psi / 18" L
Subsea connectors	N/A

C. Shop Fabrication Procedures

Welding Code:	N/A
NDE	N/A
Pressure testing	N/A

D. Mechanical Integrity Check Procedures

Wall thickness check	The pipe will be ultrasonically tested (UT) for wall thickness at a distance of two (2), five (5), and ten (10) feet on each side of the leak point at 3, 6, 9, and 12 o'clock positions.

E. Purging / Decommissioning Prior to Disassembly

Purging / Pigging	Pipeline is currently depressurized
Energy Isolation	• Shoreline – Close 6" Above Ground Manual Ball Valve • Yellowhammer – Close 6" Ball Valve at Pig Launcher
Handling method for vented gas and displaced liquid hydrocarbons	N/A
Allocation plan for fluids downstream of sales meters removed from pipeline	N/A

F. Offshore Disassembly Procedure

Regulatory Notification	Notify AOGB of the proposed repair procedure prior to mobilization
Cutting method for removal of pipe material	N/A
Pollution prevention measures (pollution dome, absorbent pads, etc)	N/A, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per Contractor's standard procedures

G. Offshore Installation and Testing Procedures

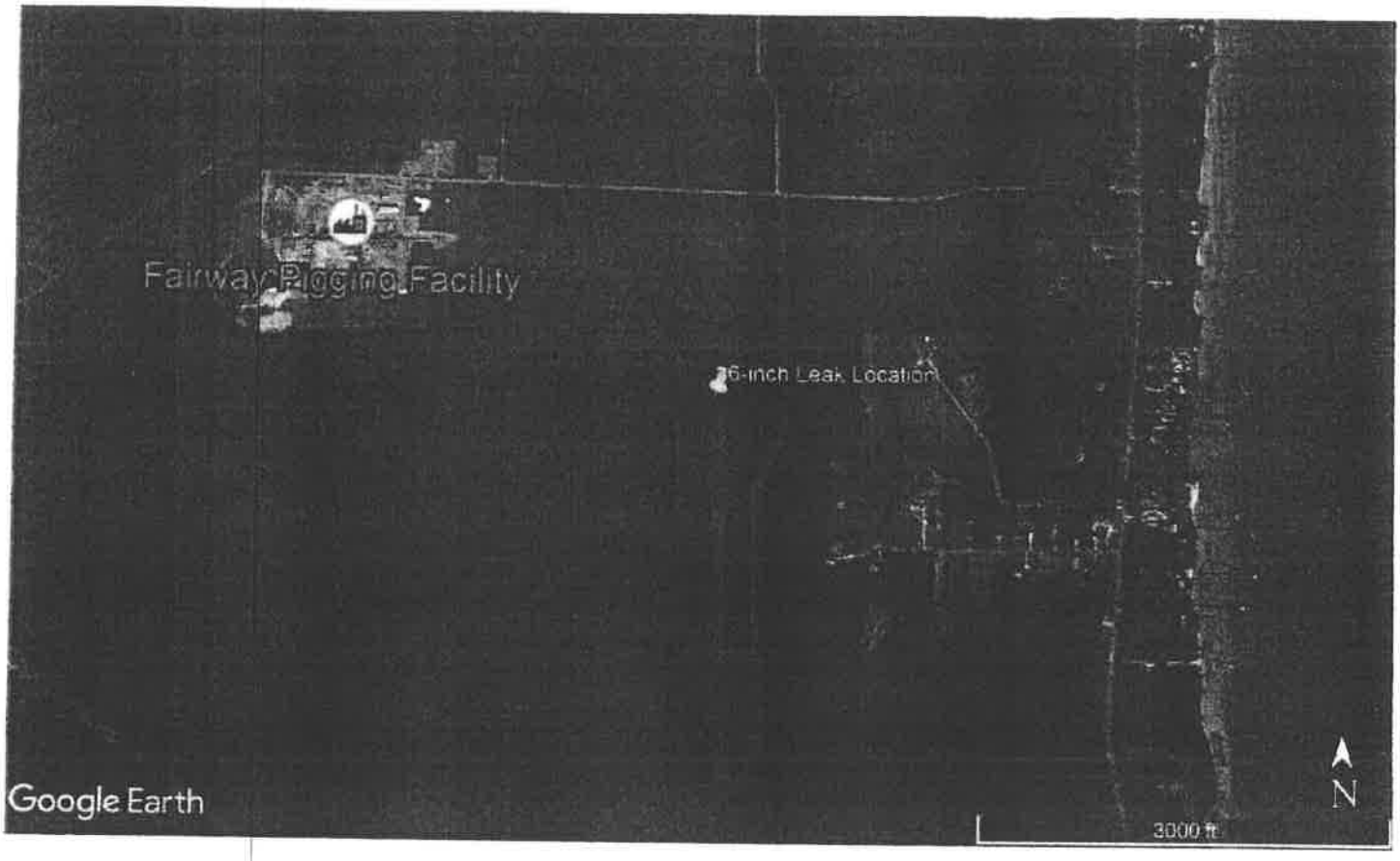
Safe rigging practices	Per Contractor's standard procedures. Contractor approved deviations to standard procedures may be required upon water depth and rigging constraints.
Welding Code:	N/A
Welding and burning safe practices	N/A
NDE	N/A
Weld area coating repair	N/A
Subsea connectors	N/A
Flange make-up	N/A
Riser protection from marine vessel impact (replacement risers)	N/A
Pressure / leak testing	Once repair is completed, perform a four (4) hour leak test with fresh dilution water or sweet gas at 550 psig stabilized pressure.

H. Return to Service

Regulatory Approval	None required
Handling method for hydro test water	N/A
Hydrate prevention for dry gas pipelines	N/A; not a dry gas system
Pipeline recover / reburial	Replace natural cover

B. Attachments

Map



Repair Clamp

Certificate of Compliance

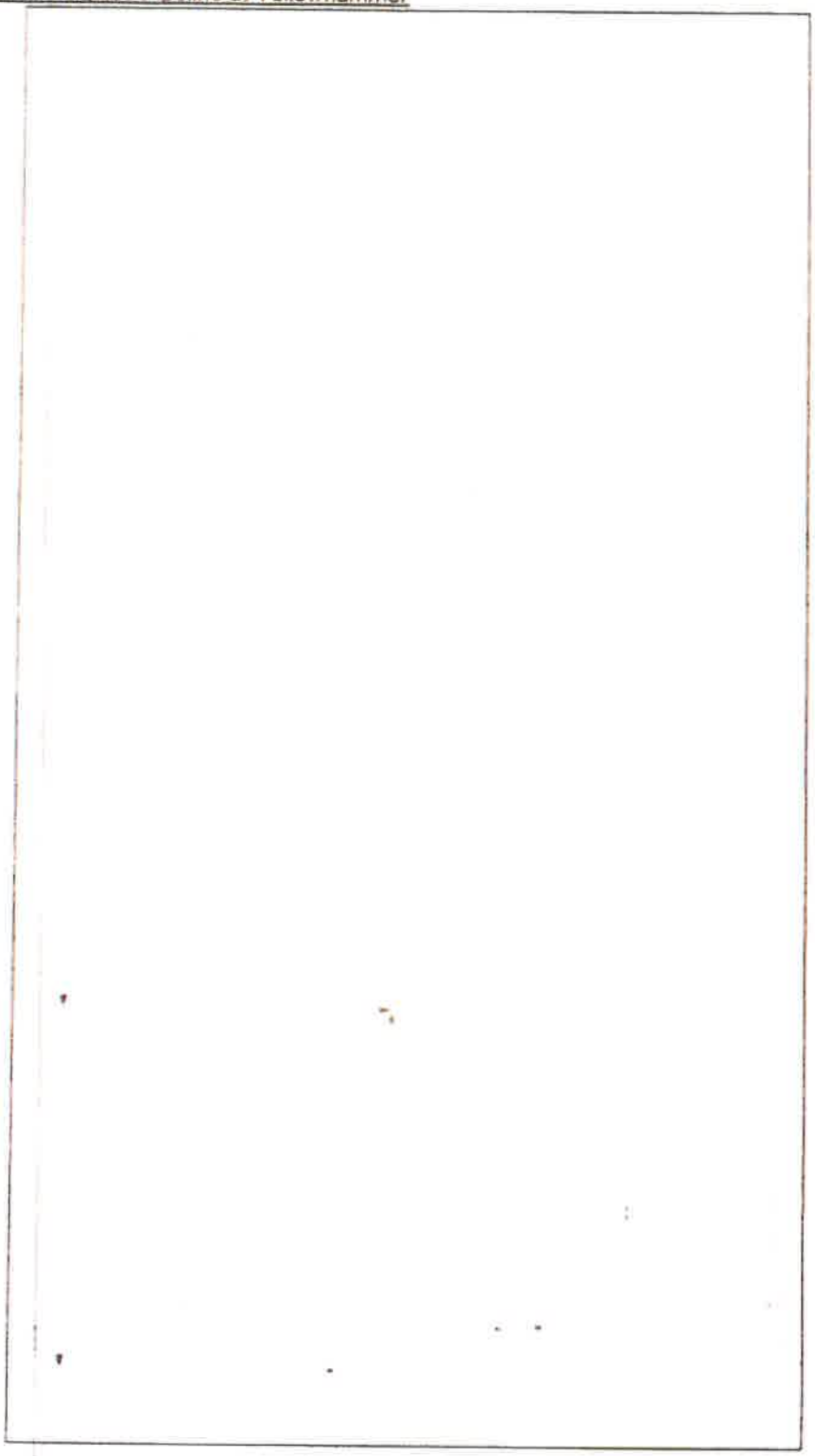
This is to certify the material shipped against the below referenced order numbers has been found to be as ordered and in accordance with our quality control specifications and comply with the requirements for NACE MR0175 / ISO 15156-2 Exposed Application. In lieu of Hydrogen induced cracking or stepwise crack (HIC/SWC) testing PLIDCO is supplying Low Sulfur material as noted in NACE MR0175 / ISO 15156-2, paragraph 8.

Material Identification

Customer Name:	EXXONMOBIL CORPORATION
Customer Order Number:	4502361093
PLIDCO Order Number:	D 41582
Due Date:	February 21, 2015
Date Prepared:	March 2, 2015

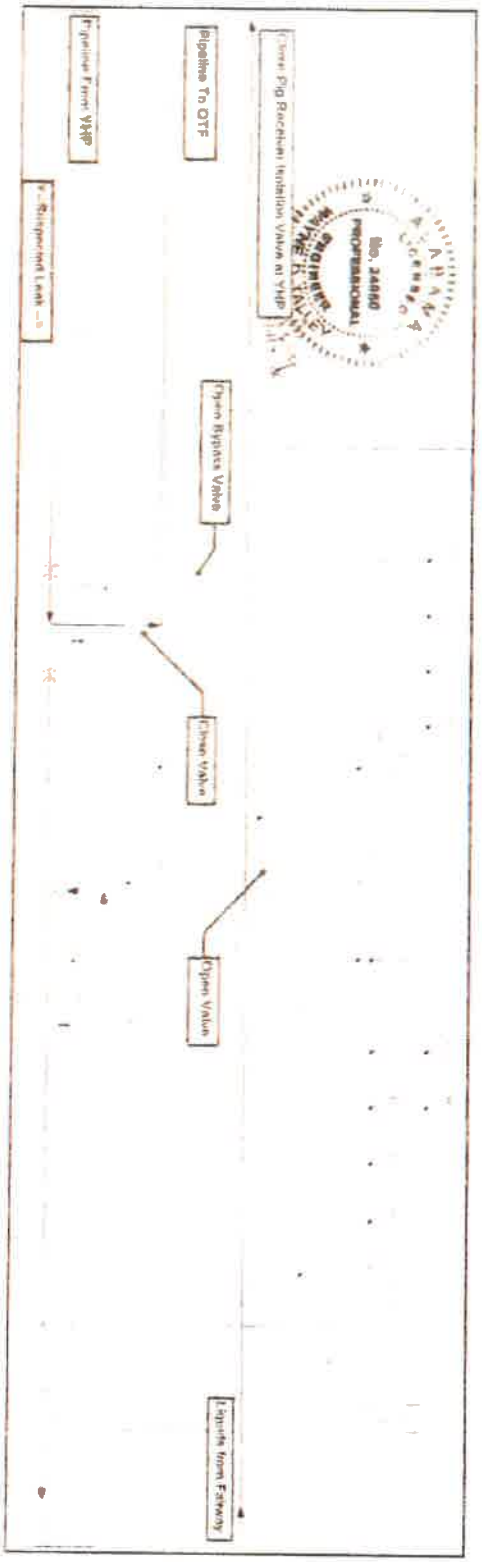
Material Description	Serial Number	Forging Heat Number
6" X 18" 2220 PSI PLIDCO SPLIT+SLEEVE	4441901	227T211

6-Inch Produced Liquids Pipeline at Yellowhammer



W&T Offshore, Inc.
Mobile Bay 113-A "Fairway"
Pipeline Repair Procedure
Rev.0; 09/02/2022

6-Inch Produced Liquids Pipeline at Shoreline







Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Tuesday, September 6, 2022 6:38 PM
To: Leigh Blake
Cc: Valerie Greeve; Kendra Sullivan
Subject: 6" pipeline

Leigh,
While pressure testing the 6" line we noticed another spot we needed to address. We are going to address this line and than when complete we will complete the pressure test.
Thank you,

Eric Harbison
Mobile Bay district Supervisor

1-251-973-4601 (direct)
1-251-509-2992 (mobile)
eharbison@wtoffshore.com

W&T Offshore, Inc.
13700 Dauphin Island Pkwy
Coden, AL, US 36523-2920
+1 (713) 626-8525 (main)
www.wtoffshore.com

A U.S. Company helping to safely supply energy for its Country

2nd leak during pressure test.

W&T Offshore, Inc.
Mobile Bay 113-A "Fairway"
6" Pipeline Repair Procedure
Rev.0; 09/08/2022

A. General

Regulatory Contact / Phone	Kendra Sullivan; 713-513-8629
Technical Contact / Phone	Alan Greig, Jr.; 713-297-8014
Segment number	N/A
Work Location – platform or Latitude / Longitude	Approximate, based on surface visual LAT 30°24'11"N LONG 88°7'21"W
Product Code	Produced Liquid
Approximate length	9,240 ft
Water depth at repair location	Inland
MAOP	1,430 psig
Operating pressure range	300 - 500 psig
Failure Description	Corrosion
General repair description	**Repair** 1. Make the appropriate regulatory notifications. 2. Isolate the pipeline from pressure sources at the Yellowhammer Plant and at the Shoreline Valve Site. 3. Hold a Safety Meeting and perform Job Safety Analysis', as necessary. 4. Temporarily pressurize the pipeline with processed sweet gas or Fresh Dilution Water to create a visual indication of the leak source. 5. Physically identify the location of the adjacent 8", 12", and 16" Fairway pipelines. 6. Utilize excavation tools and visually locate the leak source. 7. Expose a sufficient work area for the PLIDCO Split-Sleeve repair clamp installation. 8. Perform UT wall thickness readings around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 9. Install a PLIDCO 6" x 9" LG. Split + Sleeve clamp onto the pipeline and prepare an as-built drawing. 10. Utilizing sweet gas and/or fresh dilution water from Yellowhammer, pressurize the pipeline to 600 psig for 4 hours. Record pressure and temperature using a Barton Chart Recorder and a Digital Deadweight Gauge. 11. Upon a successful pressure testing, depressurize the pipeline, recover the pipeline to natural bottom, and re-open the isolation valves. Return the pipeline to service. 12. Derig and demobilize the construction spread from location.
Alternate Compliance	N/A
Date leak detected	09/06/2022
Planned date for start of repair	09/07/2022
Planned date for start of leak test	09/10/2022
Planned date to return to production	09/11/2022

F. Disassembly Procedure

Regulatory Notification	Notify AOGB of the proposed repair procedure prior to mobilization
Cutting method for removal of pipe material	N/A
Pollution prevention measures (pollution dome, absorbent pads, etc)	N/A, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per Contractor's standard procedures

G. Installation and Testing Procedures

Safe rigging practices	Per Contractor's standard procedures. Contractor approved deviations to standard procedures may be required upon water depth and rigging constraints.
Welding Code:	N/A
Welding and burning safe practices	N/A
NDE	N/A
Weld area coating repair	N/A
Subsea connectors	N/A
Flange make-up	N/A
Riser protection from marine vessel impact (replacement risers)	N/A
Pressure / leak testing	Once repair is completed, perform a four (4) hour leak test with fresh dilution water or sweet gas at 600 psig stabilized pressure.

H. Return to Service

Regulatory Approval	None required
Handling method for hydro test water	N/A
Hydrate prevention for dry gas pipelines	N/A; not a dry gas system
Pipeline recover / reburial	Replace natural cover

Repair Clamp

PLIDCO®
THE PIPE LINE DEVELOPMENT COMPANY
870 Canterbury Road
Westlake, Ohio 44145-1419
Phone: (440) 871-5700
Fax: (440) 871-9577
Email: pipeline@plidco.com

Certificate of Compliance

This is to certify the material shipped against the below referenced order numbers has been found to be as ordered and in accordance with our quality control specifications and comply with the requirements for NACE MR0175 / ISO 15156-2 Exposed Application. In lieu of Hydrogen induced cracking or stepwise crack (HIC/SWC) testing PLIDCO is supplying Low Sulfur material as noted in NACE MR0175 / ISO 15156-2, paragraph 8.

Material Identification

Customer Name:	EXXONMOBIL CORPORATION
Customer Order Number:	4502361093
PLIDCO Order Number:	D 41582
Due Date:	February 21, 2015
Date Prepared:	March 2, 2015

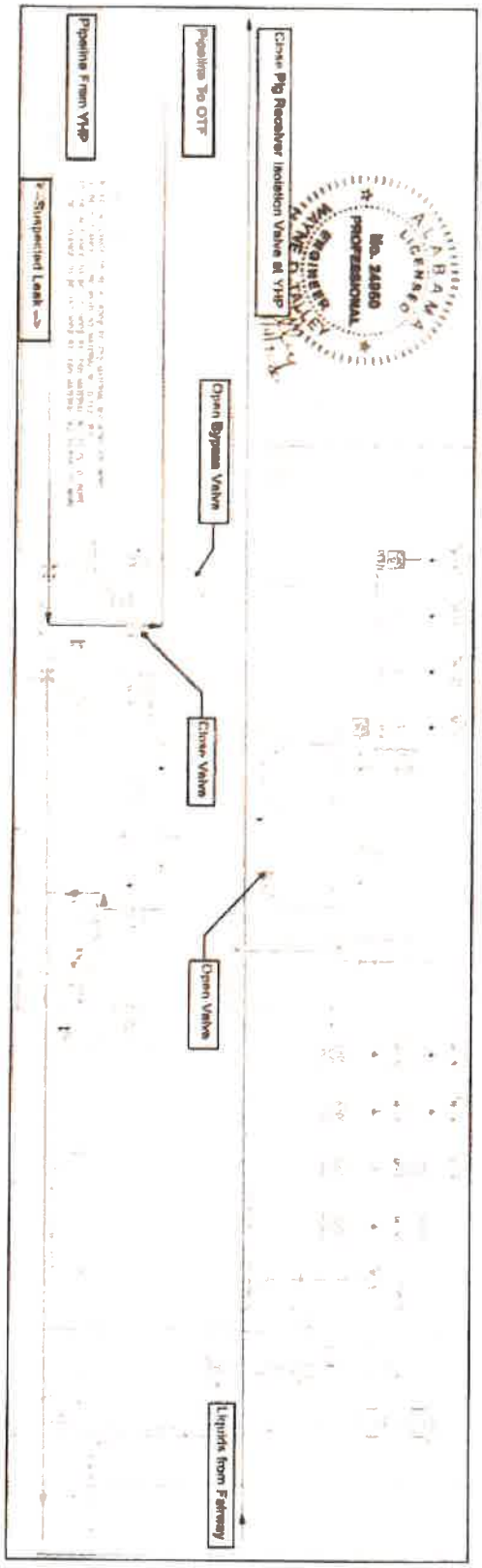
Material Description	Serial Number	Forging Heat Number
6" X 18" 2220 PSI PLIDCO SPLIT+SLEEVE	4441901	227T211

Attested by,

Page 5 of 7

W&T Offshore, Inc.
Mobile Bay 113-A "Fairway"
6" Pipeline Repair Procedure
Rev.0; 09/08/2022

6-Inch Produced Liquids Pipeline at Shoreline





OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

NOVEMBER 22, 2022

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 11/22/2022

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: MB-113 2. County: Mobile-OS

3. Facility Location* (surface): (give footage from nearest section or offshore tract lines) 2,564' FWL and 5,532 FSL Section-Township-Range or Tract

Latitude (NAD27): 30.179720 Longitude (NAD27): 88.077221

3. Field (If wildcat, so state)

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 11/22/2022

Time: 10:55 AM Reported By (Company Representative): Eric Harbison

When Did Incident Occur? Date: 11/22/2022 Time: 10:00 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: 375 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Produced water leaked from 1/8" pin hole leak located at the 6 o'clock position on the underside of the pipeline.

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Pin hole on underside of pipeline caused leak.

Measures taken to control fire, spill, leak or blow out: Clamp was installed on the pipeline.

Measures taken to clean up: Pipeline and production was shut in.

Measures taken to prevent reoccurrence of this incident: An ILI will be run in the pipeline to determine internal integrity.

Date that cleanup operations completed (if completed). 12/5/2022 - clamp was intalled and tested successfully

Remarks:

RECEIVED
AOGB MOBILE
1/3/2023

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

1/3/2023
Date

Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Tuesday, November 22, 2022 10:55 AM
To: Leigh Blake
Cc: Kendra Sullivan; Antoine Gautreaux
Subject: 8" produced water line

Leigh,
We are experiencing a 8" produced water pipeline issue and will keep you inform of our progression of resolving the issue.
Thank you,

Eric Harbison
Mobile Bay district Supervisor

1-251-973-4601 (Office)
1-251-509-2992 (mobile)
eharbison@wtoffshore.com

W&T Offshore, Inc.
6000 Deakle RD
Theodore, AL 36582
+1 (713) 626-8525 (main)
www.wtoffshore.com

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS AND ARCHITECTS
TX Reg. # F-000059

Pipeline Leak Estimate
November 22, 2022



Document Number:	20220531-STUDY-P-002
Client Name:	W&T Offshore
Project Title:	MB-113 Pipeline
Job Number:	20220531-03

A	12/20/2022	Issued for Review	SWC	WDT		
REV	DATE	DESCRIPTION	ORIG	APPROVALS		
APPROVED BY:			COMPANY APPROVAL:			
DATE:			DATE:			

PROCESS CALCULATIONS			
Client	W&T Offshore	Project No	20220531-03
Project	MB-113 Pipeline	Rev	A
Calculation Title	Pipeline Leak EstimateNovember 22, 2022	By	SWC
Calculation No.	20220531-STUDY-P-002	Checked	WDT
		Date	12/20/2022

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1 PURPOSE
2 REFERENCES
3 NOTES
4 SUMMARY CALCULATIONS
5 CONCLUSIONS
6 DETAILED CALCULATIONS

1. PURPOSE

This calculation estimates the leak rate for the recent hole in the W&T produced water pipeline. The pipeline is 8" diameter carbon steel and routes from MB-113A to the Yellowhammer plant.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B R., Young, D F, and Okiishi, T H 1998, 3ed.

3. NOTES

W&T provided trend charts that showed the pressure in the pipeline at various times during the leak. The data has been summarised as follows:

The leak began about 7:00 PM on November 20, 2022 at which time the pressure was 546 psig.
The leak continued until the pressure dropped to the hydrostatic pressure of the bay
The leak occurred at a depth of 25 feet
The hole in the pipeline was estimated as 1/8"

The accuracy of the estimated leak volume is ± 20%

4. SUMMARY CALCULATIONS

The pressure data from W&T was graphed to see the trends for the pipeline. The time periods were broken into five distinct periods based on the pressure increasing or decreasing during that period. The five Periods are shown in the table below.

	Time	Pressure, psig
Period 1	11/20/22 19:00	546
	11/21/22 10:00	424
Period 2	11/21/22 10:00	424
	11/21/22 14:00	350
Period 3	11/21/22 14:00	350
	11/21/22 23:59	350
Period 4	11/21/22 23:59	350
	11/22/22 10:00	275
Period	11/22/22 10:00	275
	11/22/22 23:59	11

The average pressure for each period was determined and then used to estimate the leakage rate for that period. The total leak for each period was then determined. See the table below for a summary of the leakage rate during each period. The time to reach the final pressure of 11 psig, was extrapolated from the graph.

Period	Duration, hrs	Period Q, m³	
1	15	21.11	
2	4	5.01	
3	10	11.90	
4	10	11.22	
5	14	10.39	
Total Amount	53 hrs	59.65	m³
		375.2	bbl

5. CONCLUSIONS

The leak continued for approximately 53 hours.

The estimated volume leaked from the pipieline was 375 2 barrels

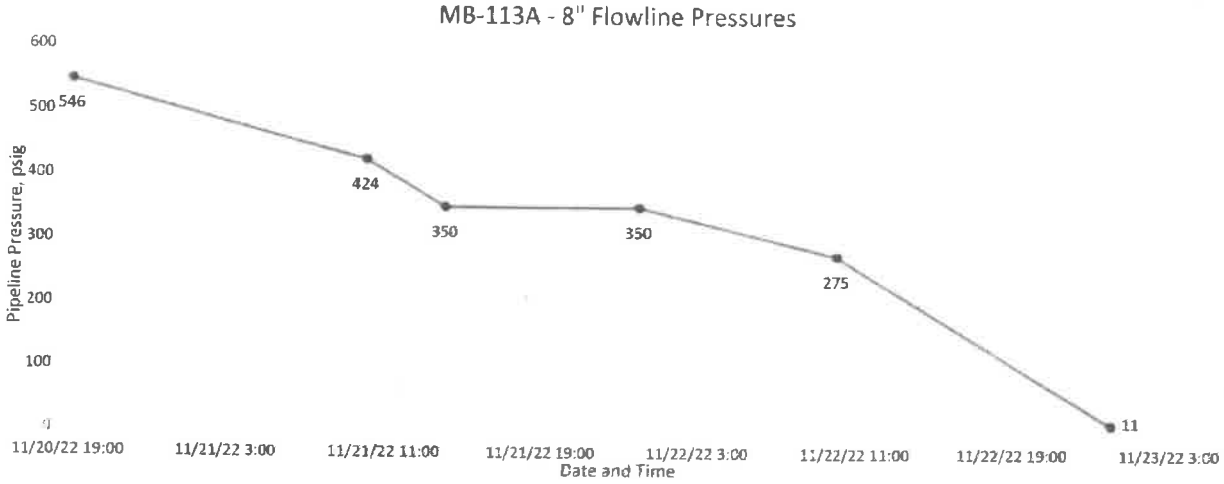
PROCESS CALCULATIONS			
Client	W&T Offshore	Project No	20220531-03
Project	MB-113 Pipeline	Rev	A
Calculation Title	Pipeline Leak EstimateNovember 22, 2022	By	SWC
Calculation No.	20220531-STUDY-P-002	Checked	WDT
		Date	12/20/2022

6. DETAILED CALCULATIONS

The time and pressure data from W&T is tabulated from the start of the leak in the table below

Time	Pressure, psig	Comments
11/20/22 19:00	546	Leak Started
11/21/22 10:00	424	
11/21/22 14:00	350	
11/21/22 23:59	350	
11/22/22 10:00	275	
11/22/22 23:59	11	Leak Stopped

The data is graphed to see trends to better understand the pressure in the pipeline at the various times during the leak



The time period will be broken up into periods based on the pressure

Period 1: 546 psig to 424 psig
Period 2: 424 psig to 350 psig
Period 3: 350 psig
Period 4: 350 psig to 275 psig
Period 5: 275 psig to 11 psig

The average pressure for each period is determined and then used with the following formula to estimate the leaked amount for the given period

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m³/s
C = coefficient of discharge, 0 62
A = Area of the hole, m²
ΔP = pressure differential, Pa
ρ = liquid density, kg/m³

C = 0 62
ρ = 1,030 kg / m³ (for seawater)
D = 0 125 in = 0 003175 m
A = 7 92E-06 m²
P at 25' = 11 16 psig

The pressure differential has to take into account the water depth. From the diver's report, the leak point is at 25' depth.

The volume estimates are included in the table below.

Period	Duration, hrs	Ave P, psig	ΔP, psi	ΔP, Pa	Q, m³ / s	Q, m³ / h	Period Q, m³
1	15	485	473.8	3267008	0.00039	1.407	21.11
2	4	387	375.8	2591323	0.00035	1.254	5.01
3	10	350.0	338.8	2336217	0.00033	1.190	11.90
4	10	312.5	301.3	2077664	0.00031	1.122	11.22
4	14	143.0	131.8	909003.8	0.00021	0.742	10.39
						Total Amount	59.65 m³
							375.2 bbl

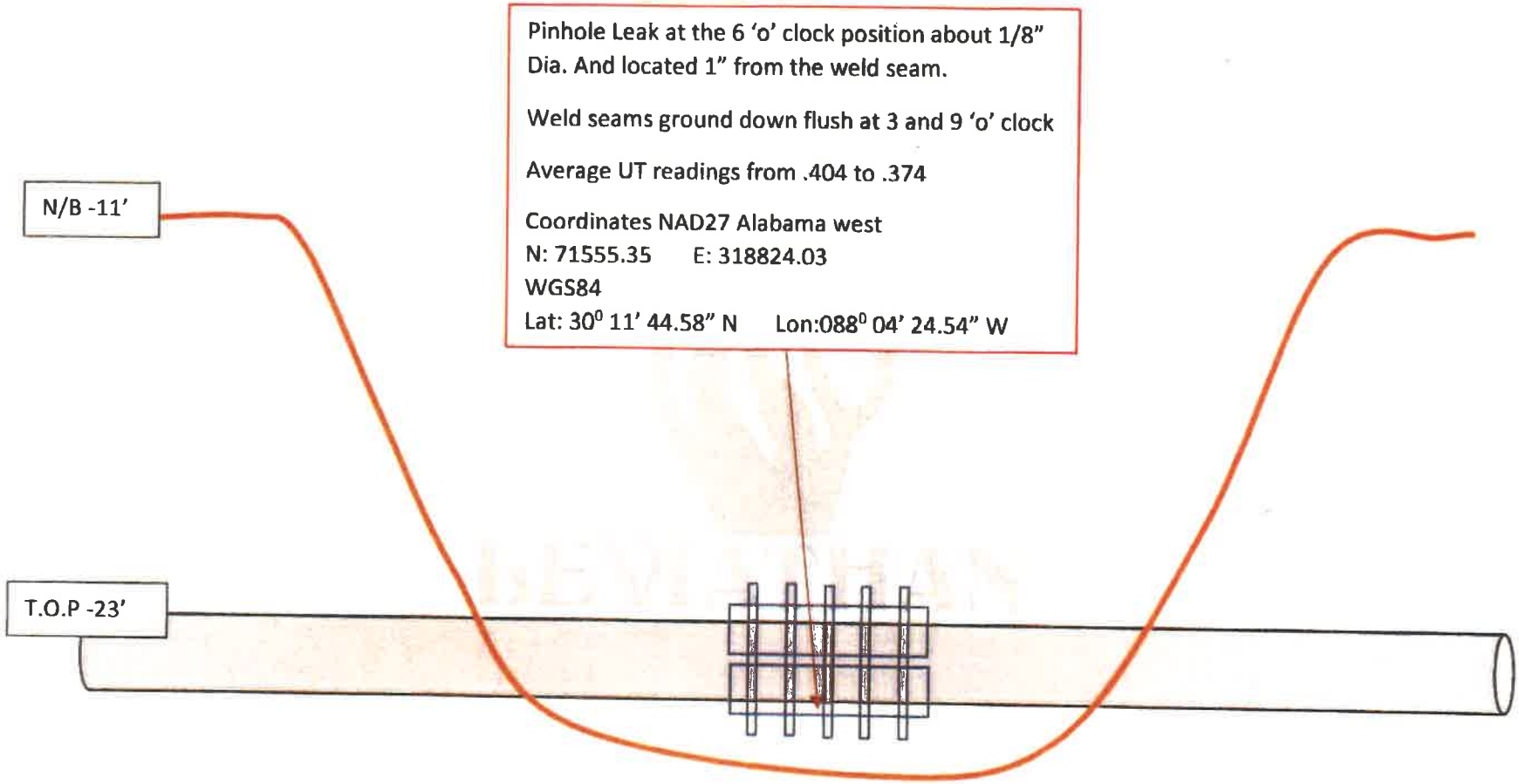
Leviathan Offshore LLC Phone (985) 746-5898 300 Bridge Rd. Houma LA. 70363 www.leviathanoffshorellc.com	Document Title Field Drawing MB 113	Revision #: N/A
	Document Number Internal	Rev Date: 12/5/12

Leviathan Job: #22-5063

Client: W&T Offshore

Location# Mobile Bay

Field Drawing 8" P/L Leak



W&T Offshore, Inc.
Mobile Bay 113-A
Pipeline Repair Procedure
Rev.0; 11/22/2022

A. General

Regulatory Contact / Phone	Kendra Sullivan; 713-513-8629
Technical Contact / Phone	Alan Greig, Jr.; 713-297-8014
Segment number	N/A
Work Location – platform or Latitude / Longitude	Mobile Bay 113-A Platform Lat / Long for leak location to be verified by Dive Support Vessel
Product Code	Produced Liquid
Approximate length	90,000 ft
Water depth at repair location	10 - 15 ft
MAOP	1,430 psig
Operating pressure range	400 - 450 psig
Failure Description	Pipeline leak
General repair description	**Repair** 1. Make the appropriate regulatory notifications. 2. Isolate the pipeline from pressure sources at MB 113-A and Yellowhammer Plant. 3. Temporarily pressurize the pipeline with processed sweet gas to create a visual indication of the leak source. 4. Jump divers and physically locate the leak source. 5. Jet out the pipeline and separate from the other 16"/12"/6" pipelines, if necessary. 6. Perform NDE around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 7. Install a PLIDCO 8" x 18" LG. Split + Sleeve clamp onto the pipeline and prepare as-built drawing. 8. Utilizing sweet gas and/or fresh water from Yellowhammer and MB 113-A, fill the pipeline from each end, and then pressurize the pipeline to 1.5 x Normal Operating Pressure, or 675 psig. 9. Perform 2-hour pressure test with produced liquids. Record and trend the test pressure and temperature via the MB 113-A PLC Software.
Alternate Compliance	N/A
Date leak detected	11/22/2022
Planned date for start of repair	11/25/2022
Planned date for start of leak test	12/05/2022
Planned date to return to production	12/06/2022
Signature / Date of reviewing Facilities Engineer	Alan Greig, Jr. Digitally signed by: Alan Greig, Jr. DN: CN = Alan Greig, Jr. email = agreig@wtoffshore.com C = US O = W and T Offshore, Inc. OU = Facilities Date: 2022.11.22 16:09:29 -06'00'
Signature / Date of Facilities Manager or alternate reviewer	J. M. Armitage Digitally signed by: 1322b89c-7dae-422f-9fcf-e7e7ca06c97b DN: CN = 1322b89c-7dae-422f-9fcf-e7e7ca06c97b Date: 2022.11.22 16:22:01 -06'00'

B. Materials Specifications

Pipe outer diameter:	8.625"
Wall thickness / grade of replacement pipe:	0.406" / A106 Gr.X-52
Minimum wall thickness required for MAOP	0.230" without corrosion allowance
Design factor (0.72 or 0.60)	0.60
Flange size / rating / face type:	8" / ANSI 900 / RTJ
Coating:	Fusion Bond Epoxy with Pritec Coating
Repair clamp manufacturer / pressure rating / coverage length	PLIDCO / 2,220 psi / 18" L
Subsea connectors	N/A

C. Shop Fabrication Procedures

Welding Code:	N/A
NDE	N/A
Pressure testing	N/A

D. Mechanical Integrity Check Procedures

Wall thickness check	The pipe will be ultrasonically tested (UT) for wall thickness at a distance of two (2), five (5), and ten (10) feet on each side of the leak point at 3, 6, 9, and 12 o'clock positions.

E. Purging / Decommissioning Prior to Disassembly

Purging / Pigging	Pipeline is currently depressurized
Energy Isolation	• MB 113-A – Close 8" SDV-1181 • Yellowhammer – Close 8" XV-1805
Handling method for vented gas and displaced liquid hydrocarbons	Yellowhammer Plant flare system
Allocation plan for fluids downstream of sales meters removed from pipeline	N/A

F. Offshore Disassembly Procedure

Regulatory Notification	Notify AOGB of the proposed repair procedure prior to mobilization
Cutting method for removal of pipe material	N/A
Pollution prevention measures (pollution dome, absorbent pads, etc)	N/A, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per diving contractor's standard procedures

G. Offshore Installation and Testing Procedures

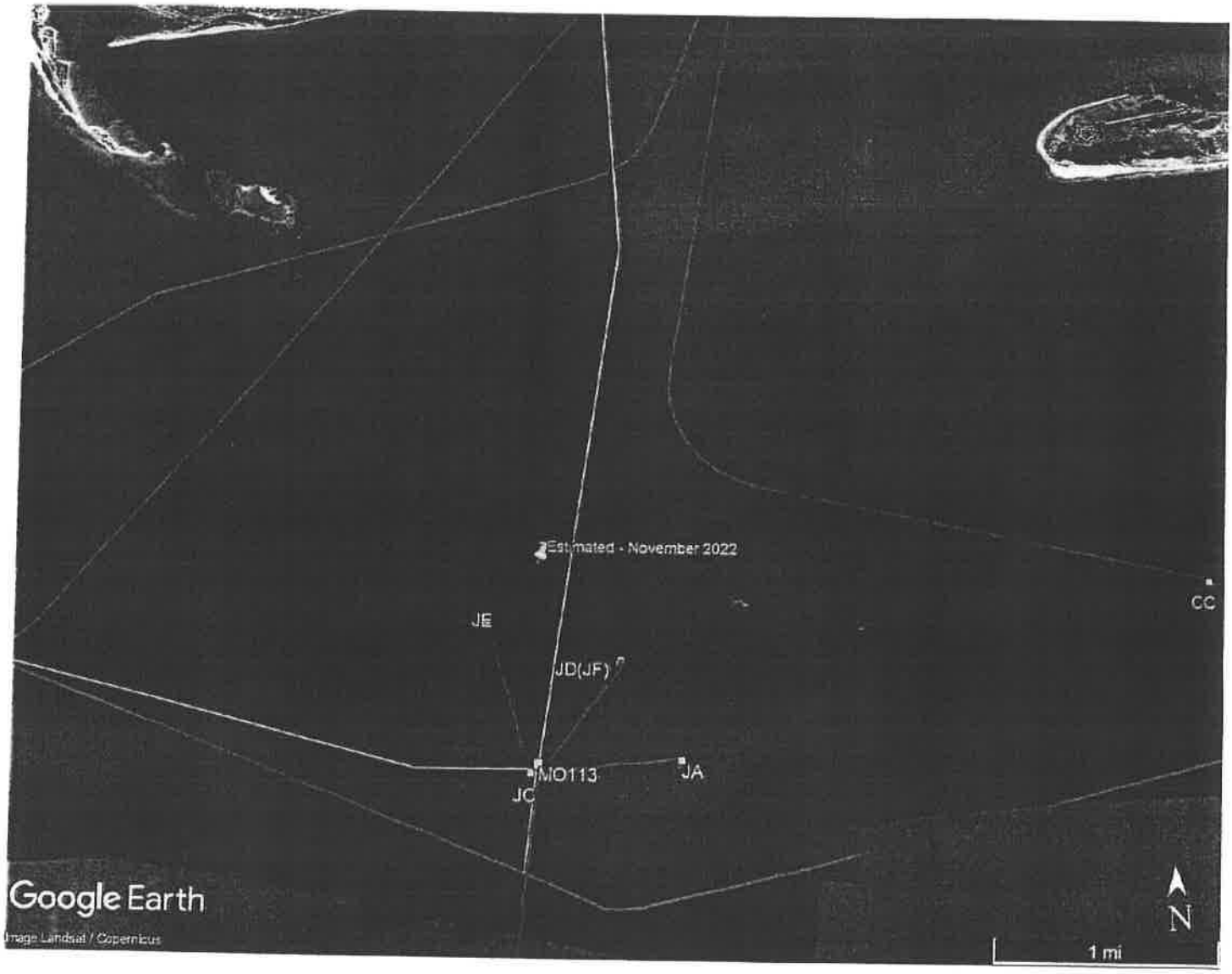
Safe rigging practices	Per diving contractor's standard procedures. Contractor approved deviations to standard procedures may be required upon water depth and rigging constraints.
Welding Code:	N/A
Welding and burning safe practices	N/A
NDE	N/A
Weld area coating repair	N/A
Subsea connectors	N/A
Flange make-up	N/A
Riser protection from marine vessel impact (replacement risers)	N/A
Pressure / leak testing	Once repair is completed, perform two (2) hour leak test with produced liquids and sweet gas at 675 psig stabilized pressure via the MB 113-A PLC Software.

H. Return to Service

Regulatory Approval	None required
Handling method for hydro test water	N/A
Hydrate prevention for dry gas pipelines	N/A; not a dry gas system
Pipeline recover / reburial	Natural reburial

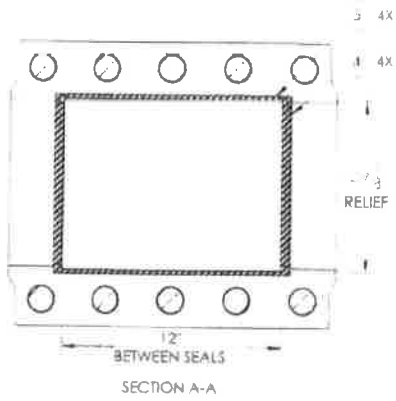
B. Attachments

Map

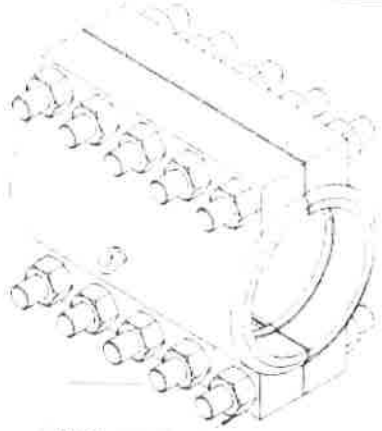


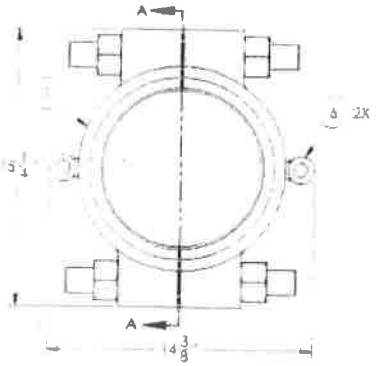
REPAIR CLAMP

NOTES
1.) HYDROSTATIC TEST PRESSURE: 1.5x MAOP
2.) RESIDUAL TORQUE VALUE WITH LIGHT MACHINE OIL = 651 FT-lbs

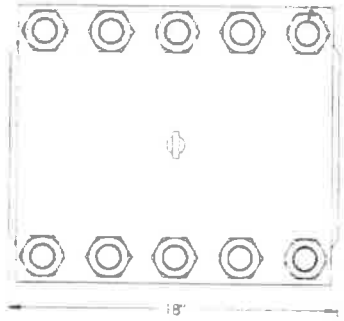


SECTION A-A





10X 20X
2 1



ITEM NO.	MATERIAL	DESCRIPTION	QTY
1	A-350-GR.LF2 CL 1	8" x 18" LG. SPLIT-SLEEVE, 2220 PSI MAOP	1
2	A-193-GR.B7	1-3/8" - 8 x 12-1/2" LG. THREADED STUD	10
3	A-194-GR 2H	1-3/8 - 8 HEAVY HEX NUT	20
4		1/2" x 5/8" CIRCUMFERENTIAL PACKING	4
5		1/4" x 3/8" LONGITUDINAL PACKING	4
6	AISI 1035	PAD EYE #2	2

PUDCO THE PIPE LINE DEVELOPMENT CO. WESTLAKE, OHIO

361 LBS. TOTAL

ASME SECTION VIII, DIV 1
API 5H

8" x 18" LG
PUDCO SPLIT-SLEEVE
2220 PSI MAOP

A. REINHART

B SS - 10682 - CF 1 of 1 A

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE PIPE LINE DEVELOPMENT COMPANY (PUDCO) INTERNATIONAL, INC. ANY REPRODUCTION, DISCLOSURE, OR USE OF ITS CONTENTS OR ANY PART THEREOF EXPRESSLY NOT HEREIN DEVELOPED BY THE PIPE LINE DEVELOPMENT COMPANY (PUDCO) INTERNATIONAL, INC. OTHERWISE MAY AGREE IN WRITING.

U.T. REPORT

REFERENCE No.	N/A	Job No.:	22-5066
CUSTOMER:	W&T	CUSTOMER Job No.:	
VESSEL:	Leviathan 1	WATER DEPTH:	22'
LOCATION:	MB - 113	DATE:	12/4/2022
OJECT DETAILS:	8" Repair Clamp install		

Leak area

12	0.404
3	0.394
6	0.408
9	0.384

South side of leak

	6"	12"	18"	24"
6oclk	0.368	0.384	0.376	0.384

North side of leak

	6"	12"	18"	24"
6oclk	0.392	0.406	0.401	0.386

	NAME	TITLE	DATE	SIGNATURE
Diver:	S. Murch	Diver	12/4/2022	
SIGNED CUSTOMER:				
Supervisor:	J. Trachsel	Dive Supt"	12/4/2022	

NOTES:

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

OCTOBER 18, 2022

STATE OIL AND GAS BOARD OF ALABAMA

OGB-27

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01 - _____ - _____ - _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore, Inc. Date: 11/16/2022

Address: 5718 Westheimer Road, Suite 700 City: Houston State: TX Zip: 77057

1. Facility name: MB-113 2. County: Mobile - OS

3. Facility Location* (surface)
(give footage from nearest section or offshore tract lines): 2563, FWL, 5,532 FSL
Section-Township-Range or Tract: MB - 113
Latitude (NAD27): 30.179209 Longitude (NAD27): 88.077221

3. Field (If wildcat, so state): N/A

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 10/18/2022

Time: 12:00 PM Reported By (Company Representative): Benjamin Reed

When Did Incident Occur? Date: 10/18/2022 Time: 10:00 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: 195.3 bbls

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: Leak occured within Mobile Bay Block 113. There was no sheen.

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: _____ Contact Person: _____

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Lake was caused by a pin hole underneath pipeline

Measures taken to control fire, spill, leak or blow out: Clamp was installed on the pipeline.

Measures taken to clean up: No sheen occurred

Measures taken to prevent reoccurrence of this incident: An ILI will be performed and IM assessment performed

Date that cleanup operations completed (if completed): 10/29/2022 - clamp was installed and succesfully tested

Remarks: Please see attached report from Waldemar S. Nelson and Company Engineering firm calculating leak volume and field drawing from Leviathan Offshore, LLC of leak location and size.

This report is an amendment from previous filing on November 1, 2022.

RECEIVED
AOGB MOBILE
11-16-2022 CC

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Signature of Operator's Agent

11/16/2022
Date

WALDEMAR S. NELSON AND COMPANY
INCORPORATED
ENGINEERS AND ARCHITECTS
TX Reg. # F-000059

Pipeline Leak Estimate



Document Number:	20220531-STUDY-P-001
Client Name:	W&T Offshore
Project Title:	MB-113 Pipeline
Job Number:	20220531-01

REV	DATE	DESCRIPTION	ORIG	APPROVALS
A	11/7/2022	Issued for Review	SWC	WDT

APPROVED BY:	COMPANY APPROVAL:
DATE:	DATE:

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6. DETAILED CALCULATIONS

1. PURPOSE

This calculation estimates the leak rate for the recent hole in the W&T produced water pipeline. The pipeline is 8" diameter carbon steel and routes from MB-113A to the Yellowhammer plant.

2. REFERENCES

Fundamentals of Fluid Mechanics, Munson, B.R., Young, D.F, and Okiishi, T. H. 1998, 3ed.

3. NOTES

W&T advised the following

Pressure in the piping ranged from 325 psig to 145 psig
The leak began about 10:15 on October 18, 2022
Fuel gas was added to the pipeline to assist in locating the leak.
The leak continued until the pressure dropped to the hydrostatic pressure of the bay.
The leak occurred at a depth of 25 feet
The estimated hole size is 1/8"

The accuracy of the estimated volume is ± 20%.

4. SUMMARY CALCULATIONS

The pressure data from W&T was graphed to see the trends for the pipeline. The time periods were broken into five distinct periods based on the pressure increasing or decreasing during that period. The five Periods are shown in the table below.

	Time	Pressure, psig
Period 1	10/18/22 10:15	325
	10/18/22 12:00	305
	10/18/22 19:00	268
Period 2	10/19/22 5:00	268
	10/19/22 6:30	275
Period 3	10/19/22 7:30	250
	10/19/22 8:15	230
	10/19/22 9:00	199
Period 4	10/19/22 9:15	235
Period 5	10/19/22 13:00	145

The average pressure for each period was determined and then used to estimate the leakage rate for that period. The total leak for each period was then determined. See the table below for a summary of the leakage rate during each period. The time to reach the final pressure of 11 psig, was extrapolated from the graph.

Period	Duration, hrs	Period Q, m³
1	9	9.74
2	11.5	11.97
3	2.5	2.44
4	0.25	0.23
5	10	6.67
Total Amount		31.05 m³
		195.3 bbl

5. CONCLUSIONS

The leak continued for approximately 33 hours.

The estimated volume leaked from the pipieline was 195.3 barrels.

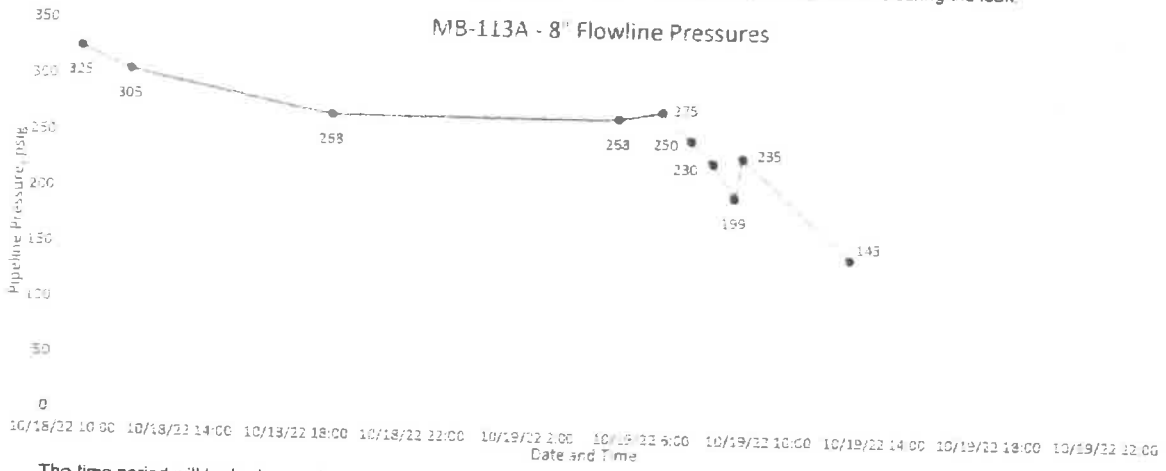
Client	W&T Offshore	Project No.	20220531-01
Project	MB-113 Pipeline	Rev.	A
Calculation Title	Pipeline Leak Estimate	By	SWC
Calculation No.	20220531-STUDY-P-001	Checked	WDT
		Date	11/7/2022

6. DETAILED CALCULATIONS

The time and pressure data from W&T is tabulated from the start of the leak in the table below.

Time	Pressure, psig	Comments
10/18/22 10:15	325	Leak started
10/18/22 12:00	305	Shut in MO-826 production
10/18/22 19:00	268	
10/19/22 5:00	268	
10/19/22 6:30	275	Applied fuel gas to pipeline
10/19/22 7:30	250	
10/19/22 8:15	230	
10/19/22 9:00	199	
10/19/22 9:15	235	Found leak, stopped fuel gas
10/19/22 13:00	145	

The data is graphed to see trends to better understand the pressure in the pipeline at the various times during the leak.



The time period will be broken up into periods based on the pressure increasing or decreasing.

Period 1: 325 psig to 268 psig
Period 2: 268 psig to 275 psig
Period 3: 275 psig to 199 psig
Period 4: 199 psig to 235 psig
Period 5: 235 psig to 11 psig (extrapolated based on trend from graph)

The average pressure for each period is determined and then used with the following formula to estimate the leaked amount for the given period.

$$Q = CA\sqrt{\frac{2\Delta P}{\rho}}$$

Q = flow rate, m^3/s
C = coefficient of discharge, 0.62
A = Area of the hole, m^2
ΔP = pressure differential, Pa
ρ = liquid density, kg/m^3

C = 0.62
ρ = 1,030 kg / m³ (for seawater)
D = 0.125 in = 0.003175 m
A = 7.92E-06 m²
P at 25' = 11.16 psig

The pressure differential has to take into account the water depth. From the diver's report, the leak point is at 25' depth.

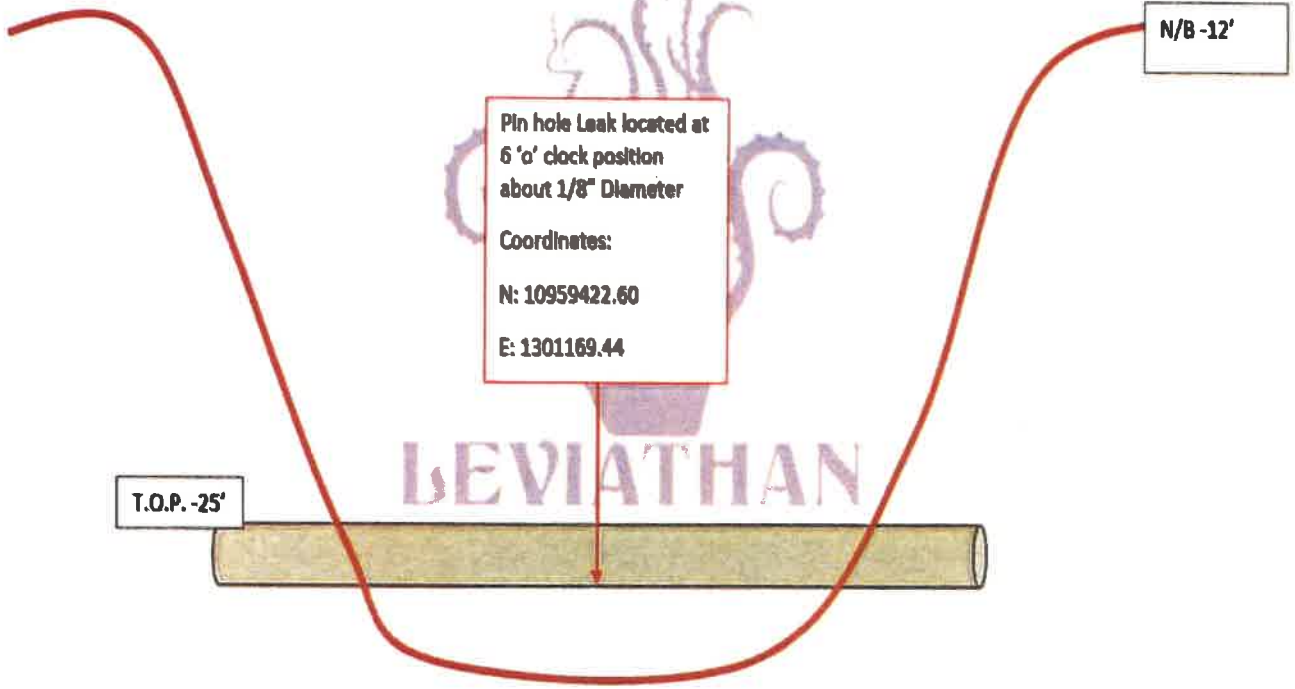
The volume estimates are included in the table below.

Period	Duration, hrs	Ave P, psig	ΔP, psi	ΔP, Pa	Q, m³ / s	Q, m³ / h	Period Q, m³
1	9	291.5	280.3	1932874	0.00030	1.083	9.74
2	11.5	270.3	259.2	1786935	0.00029	1.041	11.97
3	2.5	238.5	227.3	1567452	0.00027	0.975	2.44
4	0.25	217.0	205.8	1419215	0.00026	0.928	0.23
5	10	117.5	106.3	733188	0.00019	0.667	6.67
						Total Amount	31.05 m³
							195.3 bbl

Leviathan Offshore LLC Phone (985) 746-5898 300 Bridge Rd. Houma LA. 70363 www.leviathanoffshorellc.com	Document Title Field Drawing	Revision #: N/A
	Document Number Internal	Rev Date: 10/29/22

Leviathan Job: # 22-5063
Client: W&T Offshore
Location: Mobile Bay 113

Field Drawing 8" P/L Leak



1

Drawing From Dive Team

PROCESS CALCULATIONS

Client	W&T Offshore	Project No.	20220531-01
Project	MB-113 Pipeline	Rev.	A
Calculation Title	Pipeline Leak Estimate	By	SWC
Calculation No.	20220531-STUDY-P-001	Checked	WDT
		Date	11/7/2022

W&T Offshore, Inc.
Mobile Bay 113-A
Pipeline Repair Procedure
Rev.0; 10/19/2022

A. General

Regulatory Contact / Phone	Kendra Sullivan; 713-513-8629
Technical Contact / Phone	Alan Greig, Jr.; 713-297-8014
Segment number	N/A
Work Location – platform or Latitude / Longitude	Mobile Bay 113-A Platform Lat / Long for leak location to be verified by Dive Support Vessel
Product Code	Produced Liquid
Approximate length	90,000 ft
Water depth at repair location	15 - 20 ft
MAOP	1,430 psig
Operating pressure range	400 - 450 psig
Failure Description	Potential pipeline leak
General repair description	**Repair** 1. Make the appropriate regulatory notifications. 2. Isolate the pipeline from pressure sources at MB 113-A and Yellowhammer Plant. 3. Temporarily pressurize the pipeline with processed sweet gas to create a visual indication of the leak source. 4. Jump divers and physically locate the leak source. 5. Jet out the pipeline and separate from the other 16"/12"/6" pipelines, if necessary. 6. Perform NDE around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 7. Install a PLIDCO 8" x 18" LG. Split + Sleeve clamp onto the pipeline and prepare as-built drawing. 8. Utilizing sweet gas and/or fresh water from Yellowhammer and MB 113-A, fill the pipeline from each end, and then pressurize the pipeline to 1.5 x Normal Operating Pressure, or 675 psig. 9. Perform 2-hour pressure test with produced liquids. Record and trend the test pressure and temperature via the MB 113-A PLC Software.
Alternate Compliance	N/A
Date leak detected	10/18/2022
Planned date for start of repair	10/21/2022
Planned date for start of leak test	10/23/2022
Planned date to return to production	10/24/2022
Signature / Date of reviewing Facilities Engineer	Alan Greig, Jr. Digitally signed by Alan Greig, Jr DN: CN = Alan Greig, Jr email = agreig@wtoffshore.com C = US O = W and T Offshore, Inc OU = Facilities Date: 2022.10.19 15:00:18 -05'00'
Signature / Date of Facilities Manager or alternate reviewer	J. Alan Greig

W&T Offshore, Inc.
Mobile Bay 113-A
Pipeline Repair Procedure
Rev.0; 10/19/2022

B. Materials Specifications

Pipe outer diameter:	8.625"
Wall thickness / grade of replacement pipe:	0.406" / A106 Gr.X-52
Minimum wall thickness required for MAOP	0.230" without corrosion allowance
Design factor (0.72 or 0.60)	0.60
Flange size / rating / face type:	8" / ANSI 900 / RTJ
Coating:	Fusion Bond Epoxy with Pritec Coating
Repair clamp manufacturer / pressure rating / coverage length	PLIDCO / 2,220 psi / 18" L
Subsea connectors	N/A

C. Shop Fabrication Procedures

Welding Code:	N/A
NDE	N/A
Pressure testing	N/A

D. Mechanical Integrity Check Procedures

Wall thickness check	The pipe will be ultrasonically tested (UT) for wall thickness at a distance of two (2), five (5), and ten (10) feet on each side of the leak point at 3, 6, 9, and 12 o'clock positions.

E. Purging / Decommissioning Prior to Disassembly

Purging / Pigging	Pipeline is currently depressurized
Energy Isolation	• MB 113-A – Close 8" SDV-1181 • Yellowhammer – Close 8" XV-1805
Handling method for vented gas and displaced liquid hydrocarbons	Yellowhammer Plant flare system
Allocation plan for fluids downstream of sales meters removed from pipeline	N/A

F. Offshore Disassembly Procedure

Regulatory Notification	Notify AOCB of the proposed repair procedure prior to mobilization
Cutting method for removal of pipe material	N/A
Pollution prevention measures (pollution dome, absorbent pads, etc)	N/A, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per diving contractor's standard procedures

G. Offshore Installation and Testing Procedures

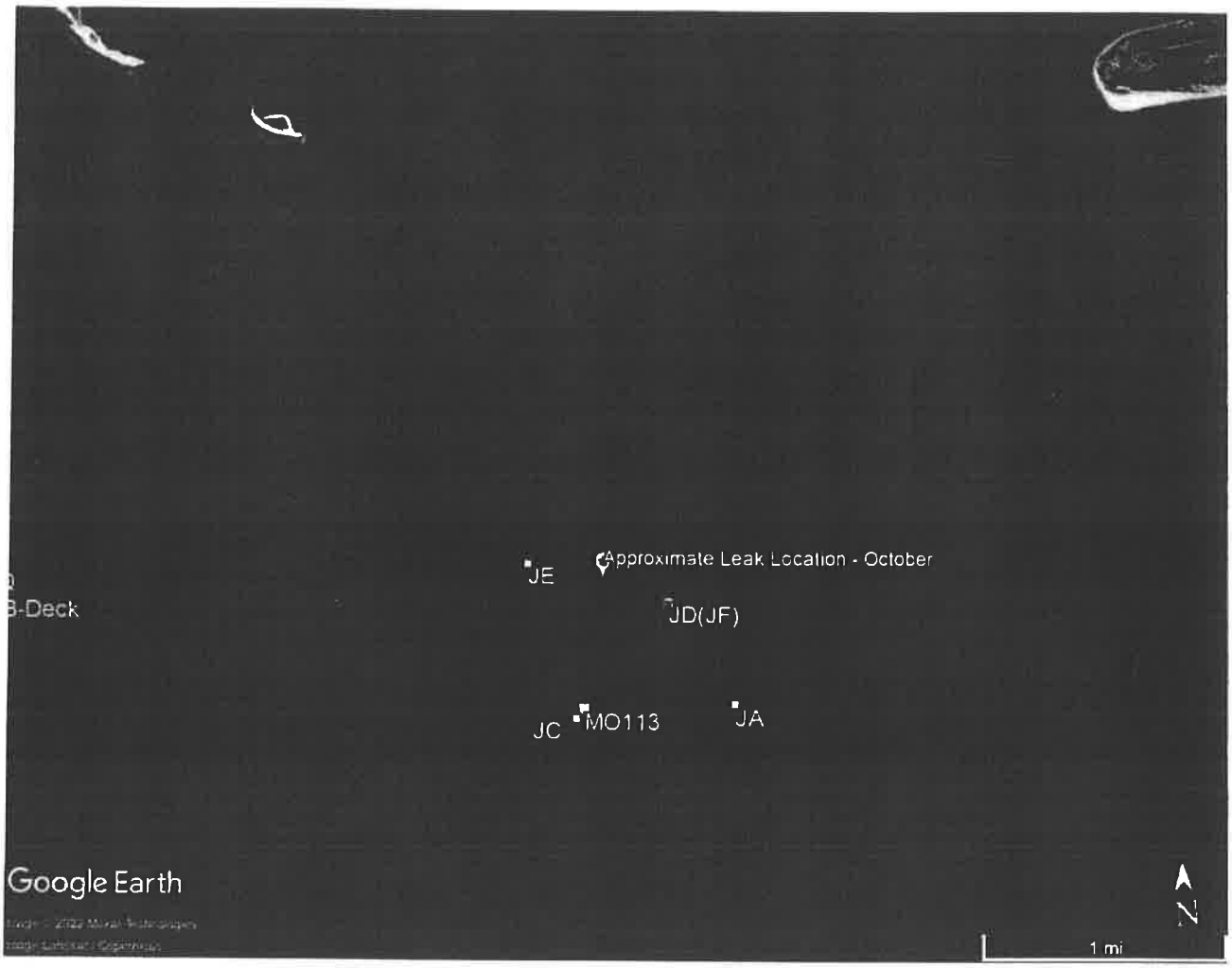
Safe rigging practices	Per diving contractor's standard procedures. Contractor approved deviations to standard procedures may be required upon water depth and rigging constraints.
Welding Code:	N/A
Welding and burning safe practices	N/A
NDE	N/A
Weld area coating repair	N/A
Subsea connectors	N/A
Flange make-up	N/A
Riser protection from marine vessel impact (replacement risers)	N/A
Pressure / leak testing	Once repair is completed, perform two (2) hour leak test with produced liquids and sweet gas at 675 psig stabilized pressure via the MB 113-A PLC Software.

H. Return to Service

Regulatory Approval	None required
Handling method for hydro test water	N/A
Hydrate prevention for dry gas pipelines	N/A; not a dry gas system
Pipeline recover / reburial	Natural reburial

B. Attachments

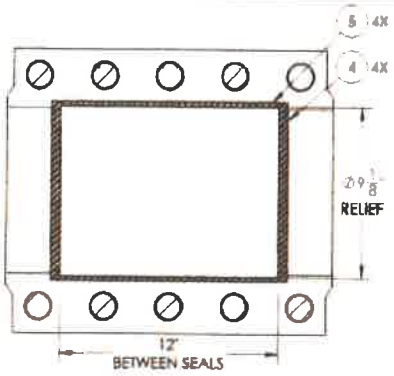
Map



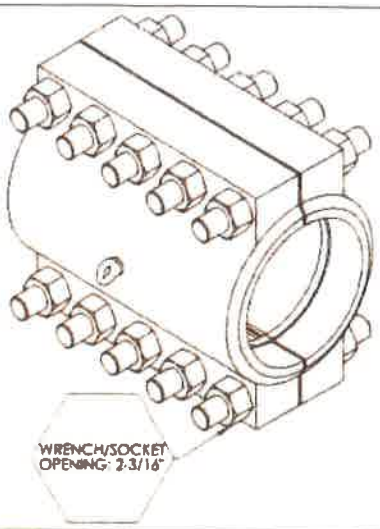
W&T Offshore, Inc.
Mobile Bay 113-A
Pipeline Repair Procedure
Rev.0; 10/19/2022

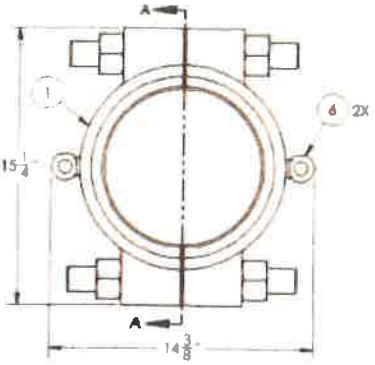
REPAIR CLAMP

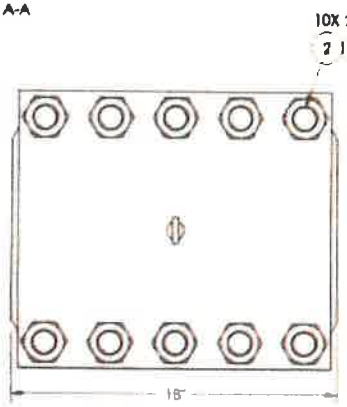
NOTES:
1.) HYDROSTATIC TEST PRESSURE: 1.5x MAOP
2.)RESIDUAL TORQUE VALUE WITH LIGHT MACHINE OIL = 651 ft-lbs.



SECTION A-A







ITEM NO.	MATERIAL	DESCRIPTION	QTY
1	A-350-GR.LF2 CL.1	8" x 18" LG. SPLIT+SLEEVE, 2220 PSI MAOP	1
2	A-193-GR.B7	1-3/8" - 8 x 12-1/2" LG. THREADED STUD	10
3	A-194-GR.2H	1-3/8" - 8 HEAVY HEX NUT	20
4		1/2" x 5/8" CIRCUMFERENTIAL PACKING	4
5		1/4" x 3/8" LONGITUDINAL PACKING	4
6	AISI 1035	PAD EYE #2	2

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL INC. ANY REPRODUCTION, DISCLOSURE, OR USE OF ITS CONTENTS OR ANY PART THEREOF IS EXPRESSLY PROHIBITED EXCEPT AS THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL INC. OTHERWISE MAY AGREE IN WRITING.

PLIDCO THE PIPE LINE DEVELOPMENT CO. WESTLAKE, OHIO

WEIGHT	361 LBS. TOTAL
DESIGN CODE	ASME SECTION VIII, DIV. 1 API 6H
SCALE	DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED
TITLE	8" x 18" LG. PLIDCO SPLIT+SLEEVE 2220 PSI MAOP
DRAWN	A. REINHART — 11/14/19
APPROVED	DATE
SIZE	DRAWING NUMBER: B — SS - 10682 - CF
SHEET	1 of 1
REV.	A

Leigh Blake

From: Benjamin Reed <breed@wtoffshore.com>
Sent: Wednesday, October 19, 2022 12:42 PM
To: Leigh Blake
Subject: FW: MB-113 8in line suspected leak
Attachments: 20221019_100802.jpg; 20221019_101037.jpg; 20221019_104341.jpg; 20221019_104305.jpg

Platform MB113 is Shut-in and MO826 is Shut-in as well

From: Matthew Laursen
Sent: Wednesday, October 19, 2022 12:14 PM
To: Benjamin Reed
Subject: MB-113 8in line suspected leak

Benny,

I made these pictures up and hopefully they'll provide the information they need to. As I stated on the phone on our first pass outbound due north we saw the leak very clearly and were able to identify it immediately in the circled location on the pictures. I thought it would be best to continue our flight north following the pipeline to shore just to ensure there were no other possibly compromised areas. Upon making our 180 degree turn back due south the leak was hard to identify and once we picked it up again it was just a small area of bubbles coming up. We orbited the area for a few more minutes, but it had become somewhat intermittent. Upon returning to 113A we were able to visually pick it up again with the binoculars fairly easily. We also had the pilot orbit the area on his way departing the field and relay the coordinates to us which are also on a couple of the photos. Hope these pictures give you what you need. Give me a shout if I can help with anything else.

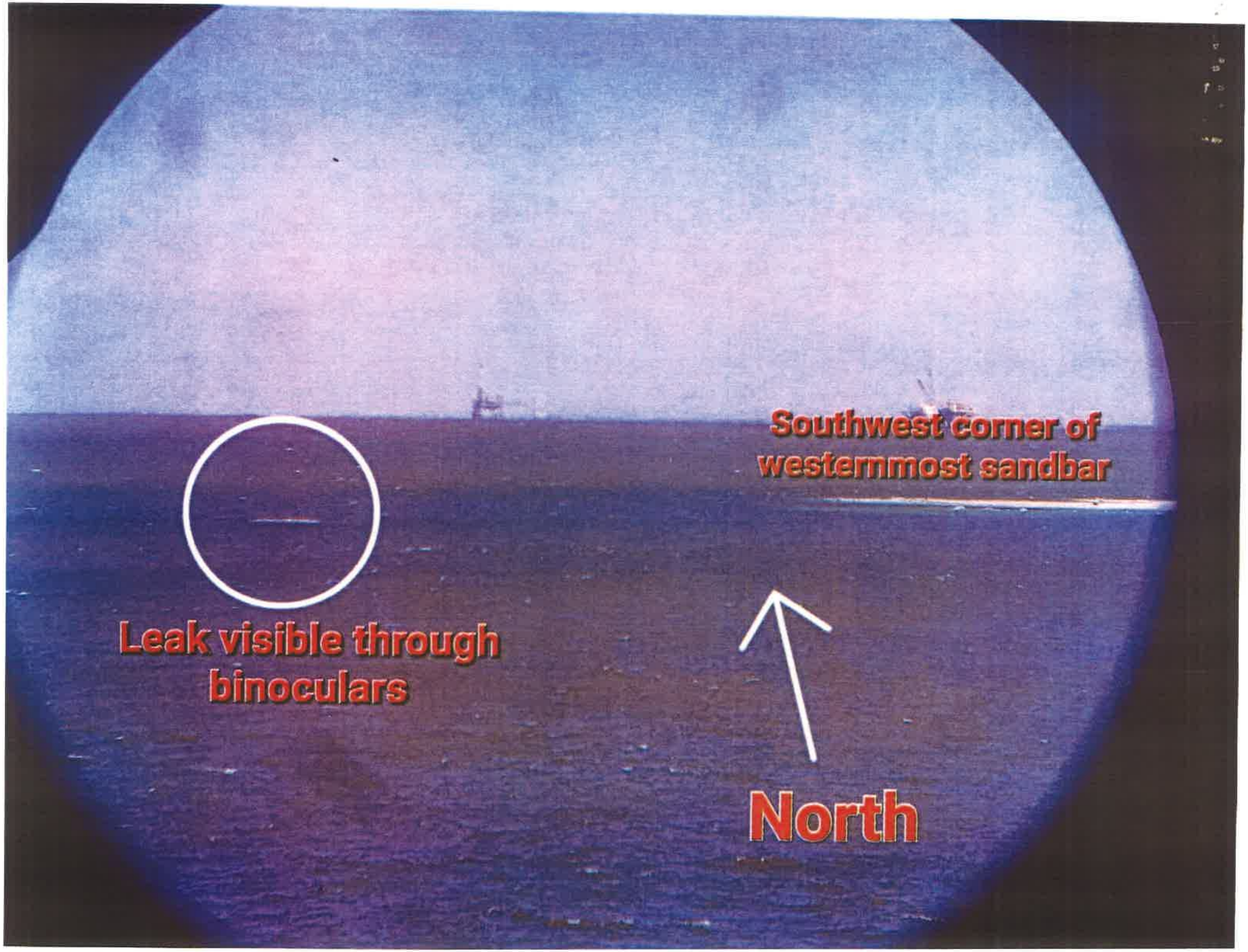
Matthew Laursen
Operator

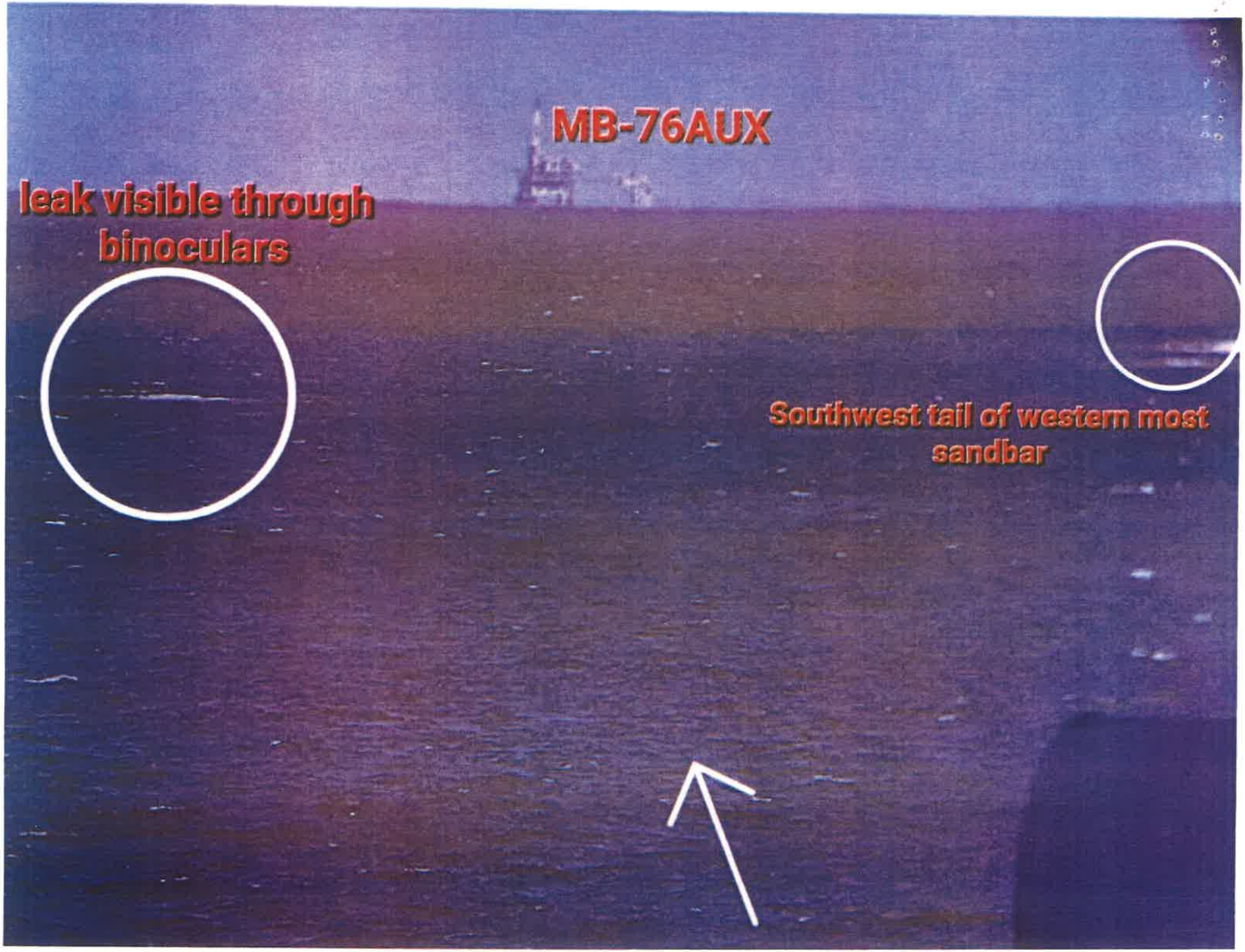
(228) 216-3425 (direct)
mlaursen@wtoffshore.com

W&T Offshore, Inc.
+1 (713) 626-8525 (main)
www.wtoffshore.com

A U.S. Company helping to safely supply energy for its Country
From: Matthew Laursen [mailto:laursen95@gmail.com]
Sent: Wednesday, October 19, 2022 12:01 PM
To: Matthew Laursen
Subject: [EXTERNAL]


approximate location of leak
N30.115
W88.0432
North


Southwest corner of
westernmost sandbar
Leak visible through
binoculars
North


MB-76AUX
leak visible through binoculars
Southwest tail of western most sandbar

Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Saturday, October 29, 2022 9:46 AM
To: Leigh Blake
Cc: Antoine Gautreaux; Kendra Sullivan; Benjamin Reed
Subject: 8" pipeline repair completed
Attachments: 20221029_073142.jpg; 20221029_073152.jpg

Follow Up Flag: Follow up
Flag Status: Completed

Leigh,
We were able to locate the bad spot in our 8" produced water line and install a clamp on it. The bad spot was between 5:30 and 6:00 on the pipeline. I have attached the pressure trends we performed after the clamp was installed for verification it held and no other problems. We are going to bring the wells back online from Fairway field today.
Thank you,

Eric Harbison
Mobile Bay district Supervisor

1-251-973-4601 (direct)
1-251-509-2992 (mobile)
eharbison@wtoffshore.com

W&T Offshore, Inc.
13700 Dauphin Island Pkwy
Coden, AL, US 36523-2920
+1 (713) 626-8525 (main)
www.wtoffshore.com

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OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

JULY 21, 2022

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable) _____ API Number (if applicable) 01- _____

Fire ☐ Spill ☐ Leak ☐ Blow Out ☐

Name of operator W&T Offshore Date 7/27/22

Address 6000 Deakle Rd City Theodore State AL Zip 36582

1 Facility name MB 113 CPF 2 County Mobile

3. Facility Location* (surface)
(give footage from nearest section or offshore tract lines) 2500'
Section-Township-Range or Tract Mobile - OS
Latitude (NAD27) 30.197566 Longitude (NAD27) 88.073077

3. Field (If wildcat, so state) Fairway Field

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 7/22/22

Time: 1:56 PM Reported By (Company Representative): Eric Harbison

When Did Incident Occur? Date: 7/21/22 Time: 12:30 AM ☐ PM ☒

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: South of Dauphin Island in the water

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: AOGB Contact Person: Leigh Blake

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Anchor Strike

Measures taken to control fire, spill, leak or blow out: Installed Clamp

Measures taken to clean up: NA

Measures taken to prevent reoccurrence of this incident: Installed Clamp

Date that cleanup operations completed (if completed): 7/25/22

Remarks: 8" Produced water line MB 113 platform

RECEIVED
AOGB MOBILE
8/10/22

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Eric W Harbison
Signature of Operator's Agent

8/10/2022
Date

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable) _____

01 - _____ - _____ - _____
API Number (if applicable)

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator W&T Offshore Date 7/27/22

Address 6000 Deakle Rd City Theodore State AL Zip 36582

1. Facility name MB 113 CPF 2. County Mobile

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) 2500' Section-Township-Range or Tract Mobile-OS

Latitude (NAD27) 30.1044 Longitude (NAD27) 88.0440

3. Field (If wildcat, so state) Fairway Field

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 7/22/22

Time: 1:56 pm Reported By (Company Representative): Eric Harbison

When Did Incident Occur? Date: 7/21/22 Time: 12:30 AM ☐ PM ☒

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced water

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: South of Dauphin Island in the water

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: AOGB Contact Person: Leigh Blake

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Anchor strike

Measures taken to control fire, spill, leak or blow out: Installed clamp

Measures taken to clean up: NA

Measures taken to prevent reoccurrence of this incident: Installed Clamp

Date that cleanup operations completed (if completed): 7/25/22

Remarks: 8" Produced water line MB 113 platform

RECEIVED
AOGB MOBILE
7/27/22

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Eric W Harbison
Signature of Operator's Agent

7-27-2022
Date

Clayton Campbell

From: Leigh Blake
Sent: Monday, July 25, 2022 10:52 AM
To: Butch Gregory; Clayton Campbell; Joshua Young
Subject: Fwd: MB-113 Produced Water Line Leak Repair

FYI

Sent from my iPhone

Begin forwarded message:

> **From:** Kendra Sullivan <ksullivan@wtoffshore.com>
> **Date:** July 25, 2022 at 10:43:15 AM CDT
> **To:** Leigh Blake <LBlake@ogb.state.al.us>
> **Cc:** "Alan Greig, Jr." <agreig@wtoffshore.com>, Eric Harbison <eharbison@wtoffshore.com>
> **Subject: RE: MB-113 Produced Water Line Leak Repair**
>
> Good Morning Leigh,
>
> W&T Offshore, Inc. utilized jump divers over the weekend and found that the pipeline had been damaged due to an anchor striking the line. Divers were able to retrieve the anchor and repair the pipeline utilizing the clamp as mentioned in the repair plan. Currently W&T is performing a pressure test on the line to confirm the clamp repair was successfully completed. We have confirmed that there are no internal corrosion issues at this time with the pipeline.
>
> Should you have any questions please advise.
>
> Respectfully,
>
> ***Kendra Sullivan***
> Sr. Regulatory Analyst
>
> +1 713 513 8629 (direct)
> 346-316-5615 (mobile)
> ksullivan@wtoffshore.com
>
> **W&T Offshore, Inc.**
> 5718 Westheimer Rd, Suite 700
> Houston, TX, US 77057-5745
> +1 (713) 626-8525 (main)
> www.wtoffshore.com
>
> W&T OFFSHORE
>
> *A U.S. Company helping to safely supply energy for its Country*
>
> **From:** Kendra Sullivan
> **Sent:** Friday, July 22, 2022 8:11 AM
> **To:** 'Leigh Blake' <LBlake@ogb.state.al.us>

Clayton Campbell

From: Leigh Blake
Sent: Tuesday, July 26, 2022 7:46 AM
To: Eric Harbison
Cc: Clayton Campbell; Joshua Young; Butch Gregory
Subject: Re: MB-113 Produced Water Line Leak Repair
Attachments: image001.png; image002.png; Produced water pipeline

Thank you

Sent from my iPhone

On Jul 26, 2022, at 7:03 AM, Eric Harbison <eharbison@wtoffshore.com> wrote:

All,
We have clamped the 8" line and completed the 2 hr test and hold at 675 psi. We put divers in water to verify no leaks on the clamp during this hold. This was all successful and we are bring all wells back online. Please let me know if you have any questions.
Please see attached email with chart on pressure hold.
Thank you all,

Eric Harbison
Mobile Bay district Supervisor

1-251-973-4601 (direct)
1-251-509-2992 (mobile)
eharbison@wtoffshore.com

W&T Offshore, Inc.
13700 Dauphin Island Pkwy
Coden, AL, US 36523-2920
+1 (713) 626-8525 (main)
www.wtoffshore.com

A U.S. Company helping to safely supply energy for its Country

From: Kendra Sullivan
Sent: Monday, July 25, 2022 10:43 AM
To: 'Leigh Blake'
Cc: Alan Greig, Jr.; Eric Harbison
Subject: RE: MB-113 Produced Water Line Leak Repair

Good Morning Leigh,

W&T Offshore, Inc. utilized jump divers over the weekend and found that the pipeline had been damaged due to an anchor striking the line. Divers were able to retrieve the anchor and repair the pipeline utilizing the clamp as mentioned in the repair plan. Currently W&T is performing a pressure test on the line to

confirm the clamp repair was successfully completed. We have confirmed that there are no internal corrosion issues at this time with the pipeline.

Should you have any questions please advise.

Respectfully,

Kendra Sullivan
Sr. Regulatory Analyst

+1 713 513 8629 (direct)
346-316-5615 (mobile)
ksullivan@wtoffshore.com

W&T Offshore, Inc.
5718 Westheimer Rd. Suite 700
Houston, TX, US 77057-5745
+1 (713) 626-8525 (main)
www.wtoffshore.com

A U.S. Company helping to safely supply energy for its Country

From: Kendra Sullivan
Sent: Friday, July 22, 2022 8:11 AM
To: 'Leigh Blake' <LBlake@ogb.state.al.us>
Cc: Alan Greig, Jr. <agreig@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>
Subject: MB-113 Produced Water Line Leak Repair

Good Morning Leigh,

Please find attached W&T Offshore, Inc.'s repair plan for the produced liquids line originating at the MB – 113 platform.

Should you have any questions or concerns with our repair plan please advise.

Sincerely,

Kendra Sullivan
Sr. Regulatory Analyst

+1 713 513 8629 (direct)
346-316-5615 (mobile)
ksullivan@wtoffshore.com

W&T Offshore, Inc.
5718 Westheimer Rd. Suite 700
Houston, TX, US 77057-5745
+1 (713) 626-8525 (main)
www.wtoffshore.com

A U.S. Company helping to safely supply energy for its Country

Leigh Blake

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Friday, July 22, 2022 11:03 AM
To: Leigh Blake
Subject: RE: [EXTERNAL]RE: [EXTERNAL]RE: MB-113 Produced Water Line Leak Repair

Follow Up Flag: Follow up
Flag Status: Completed

No, not in this situation. We sent them a courtesy notification, but the produced water lines are non DOT regulated. If the pipeline was one of our hydrocarbon lines, we would coordinate with them for repair and spill notifications with APSC and AOGB.

Yes, this line leaked before in January 2021 and was repaired with a clamp.

Sincerely,

Kendra Sullivan
Sr. Regulatory Analyst

+1 713 513 8629 (direct)
346-316-5615 (mobile)
ksullivan@wtoffshore.com

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From: Leigh Blake [mailto:LBlake@ogb.state.al.us]
Sent: Friday, July 22, 2022 10:46 AM
To: Kendra Sullivan
Subject: [EXTERNAL]RE: [EXTERNAL]RE: MB-113 Produced Water Line Leak Repair

Do they approve these pipeline leak procedures? I recall there was one on the same line in January 2022.

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Friday, July 22, 2022 8:49 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Alan Greig, Jr. <agreig@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>
Subject: RE: [EXTERNAL]RE: MB-113 Produced Water Line Leak Repair

Yes, APSC has been notified of the leak.

Kendra Sullivan
Sr. Regulatory Analyst

+1 713 513 8629 (direct)
346-316-5615 (mobile)
ksullivan@wtoffshore.com

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*A U.S. Company helping to **safely supply energy** for its Country*

From: Leigh Blake [mailto:LBlake@ogb.state.al.us]
Sent: Friday, July 22, 2022 8:30 AM
To: Kendra Sullivan
Cc: Alan Greig, Jr.; Eric Harbison
Subject: [EXTERNAL]RE: MB-113 Produced Water Line Leak Repair

Have you notified PSC?

From: Kendra Sullivan <ksullivan@wtoffshore.com>
Sent: Friday, July 22, 2022 8:11 AM
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Alan Greig, Jr. <agreig@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>
Subject: MB-113 Produced Water Line Leak Repair

Good Morning Leigh,

Please find attached W&T Offshore, Inc.'s repair plan for the produced liquids line originating at the MB – 113 platform.

Should you have any questions or concerns with our repair plan please advise.

Sincerely,

Kendra Sullivan
Sr. Regulatory Analyst

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346-316-5615 (mobile)
ksullivan@wtoffshore.com

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Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Thursday, July 21, 2022 3:18 PM
To: Leigh Blake
Subject: RE: [EXTERNAL]RE: MB-113 8" line

Follow Up Flag: Follow up
Flag Status: Flagged

It is very close to same area as last time approx.. ½ mile north of MB-113 central platform.

Eric Harbison
Mobile Bay district Supervisor

1-251-973-4601 (direct)
1-251-509-2992 (mobile)
eharbison@wtoffshore.com

W&T Offshore, Inc.
13700 Dauphin Island Pkwy
Coden, AL, US 36523-2920
+1 (713) 626-8525 (main)
www.wtoffshore.com



A U.S. Company helping to safely supply energy for its Country

From: Leigh Blake [mailto:LBlake@ogb.state.al.us]
Sent: Thursday, July 21, 2022 2:45 PM
To: Eric Harbison
Subject: [EXTERNAL]RE: MB-113 8" line

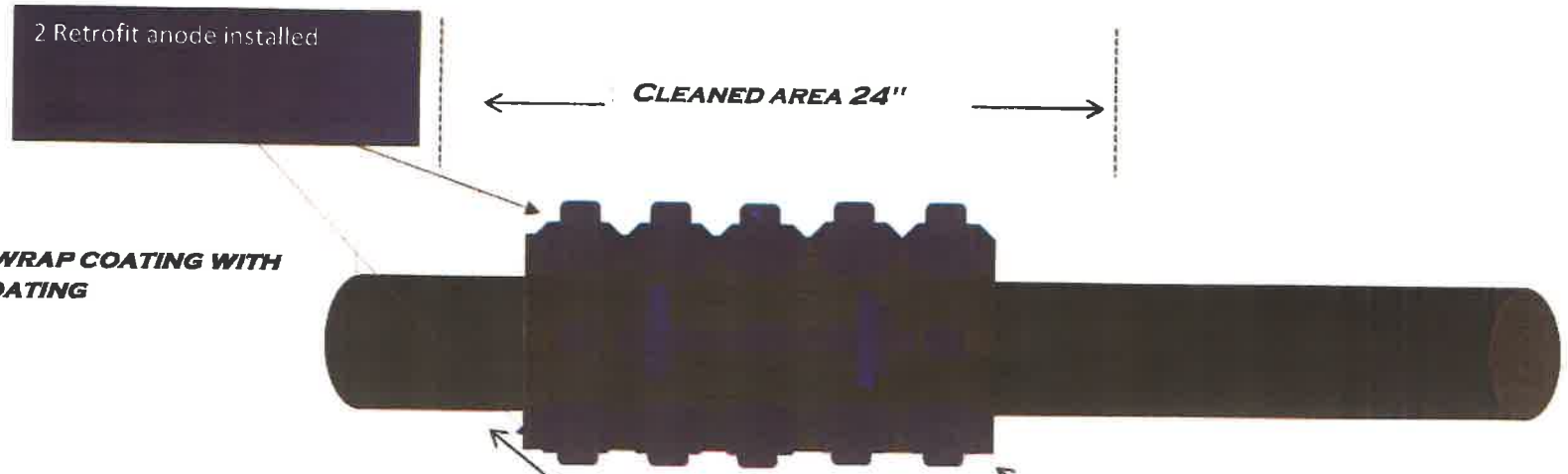
Thanks Eric. Is it in bay or offshore or do you know yet?

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Thursday, July 21, 2022 1:56 PM
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Kendra Sullivan <ksullivan@wtoffshore.com>; Terry Wilson <twilson@wtoffshore.com>; Andy Cline <acline@wtoffshore.com>; Steven Hamm <shamm@wtoffshore.com>; Antoine Gautreaux <agautreaux@wtoffshore.com>
Subject: MB-113 8" line

Leigh,
I do not like to report to you we have identified a failure in our 8" produced liquids line from MB-113. We are shut in and proceeding to depressurize and de inventory the line. We will keep you informed as we work on this line and repair procedures.
Thank you,

TRITON DIVING
DSV M/V EVEREADY
COMPANY, W&T MB 113 A 8"PIPELINE LEAK
DATE 1-23-22

Same type of clamp used on the 7-21-22 leak



BLACK PLASTIC WRAP COATING WITH RED PIPELINE COATING

8" X 18" PLITCO CLAMP
MOAP 2220 PSI
SERIAL # 6156501

PIPELINE INSPECTION:
AVERAGE UT READING .400

LEAK LOCATION: 4 OCLOCK FACING TOWARD STRUCTURE

DETAILS OF THE HOLE
1/8" LONG X 1/16" WIDE PINHOLE

W&T Offshore, Inc.
Mobile Bay 113-A
Pipeline Repair Procedure
Rev.0; 07/21/2022

A. General

Regulatory Contact / Phone	Kendra Sullivan; 713-513-8629
Technical Contact / Phone	Alan Greig, Jr.; 713-297-8014
Segment number	N/A
Work Location – platform or Latitude / Longitude	Approximate, based on surface visual LAT 30°11'29.39"N LONG 88° 4'34.65"W
Product Code	Produced Liquid
Approximate length	90,000 ft
Water depth at repair location	6 - 15 ft
MAOP	1,600 psig
Operating pressure range	400 - 450 psig
Failure Description	Potential pipeline leak
General repair description	**Repair** 1. Make the appropriate regulatory notifications. 2. Isolate the pipeline from pressure sources at MB 113-A and Yellowhammer Plant. 3. Temporarily pressurize the pipeline with processed sweet gas to create a visual indication of the leak source. 4. Jump divers and physically locate the leak source. 5. Jet out the pipeline and separate from the other 16"/12"/6" pipelines, if necessary. 6. Perform NDE around the leak area and confirm sufficient wall thickness for the repair clamp installation. (Note: wall thickness shall be minimum per Section B.) 7. Install a PLIDCO 8" x 18" LG. Split + Sleeve clamp onto the pipeline and prepare as-built drawing. 8. Utilizing sweet gas and/or fresh water from Yellowhammer and MB 113-A, fill the pipeline from each end, and then pressurize the pipeline to 1.5 x Normal Operating Pressure, or 675 psig. 9. Perform 2-hour pressure test with produced liquids. Record and trend the test pressure and temperature via the MB 113-A PLC Software.
Alternate Compliance	N/A
Date leak detected	07/21/2022
Planned date for start of repair	07/23/2022
Planned date for start of leak test	07/24/2022
Planned date to return to production	07/25/2022
Signature / Date of reviewing Facilities Engineer	Alan Greig, Jr. Digitally signed by: Alan Greig, Jr. DN: CN = Alan Greig, Jr. email = agreig@wtoffshore.com C = US O = W and T Offshore, Inc. OU = Facilities Date: 2022.07.21 15:38:08 -05'00'
Signature / Date of Facilities Manager or alternate reviewer	J. M. Armitage Digitally signed by: J. M. Armitage DN: CN = J. M. Armitage email = [illegible] C = US OU = WTI Date: 2022.07.21 16:26:17 -05'00'

B. Materials Specifications

Pipe outer diameter:	8.625"
Wall thickness / grade of replacement pipe:	0.406" / A106 Gr.X-52
Minimum wall thickness required for MAOP	0.230" without corrosion allowance
Design factor (0.72 or 0.60)	0.60
Flange size / rating / face type:	8" / ANSI 900 / RTJ
Coating:	Fusion Bond Epoxy with Pritec Coating
Repair clamp manufacturer / pressure rating / coverage length	PLIDCO / 2,220 psi / 18" L
Subsea connectors	N/A

C. Shop Fabrication Procedures

Welding Code:	N/A
NDE	N/A
Pressure testing	N/A

D. Mechanical Integrity Check Procedures

Wall thickness check	The pipe will be ultrasonically tested (UT) for wall thickness at a distance of two (2), five (5), and ten (10) feet on each side of the leak point at 3, 6, 9, and 12 o'clock positions.

E. Purging / Decommissioning Prior to Disassembly

Purging / Pigging	Pipeline is currently depressurized
Energy Isolation	• MB 113-A – Close 8" SDV-1181 • Yellowhammer – Close 8" XV-1805
Handling method for vented gas and displaced liquid hydrocarbons	Yellowhammer Plant flare system
Allocation plan for fluids downstream of sales meters removed from pipeline	N/A

F. Offshore Disassembly Procedure

Regulatory Notification	Notify AOGB of the proposed repair procedure prior to mobilization
Cutting method for removal of pipe material	N/A
Pollution prevention measures (pollution dome, absorbent pads, etc)	N/A, not disconnecting pipeline
Safe excavation measures (buried line repairs)	Per diving contractor's standard procedures

G. Offshore Installation and Testing Procedures

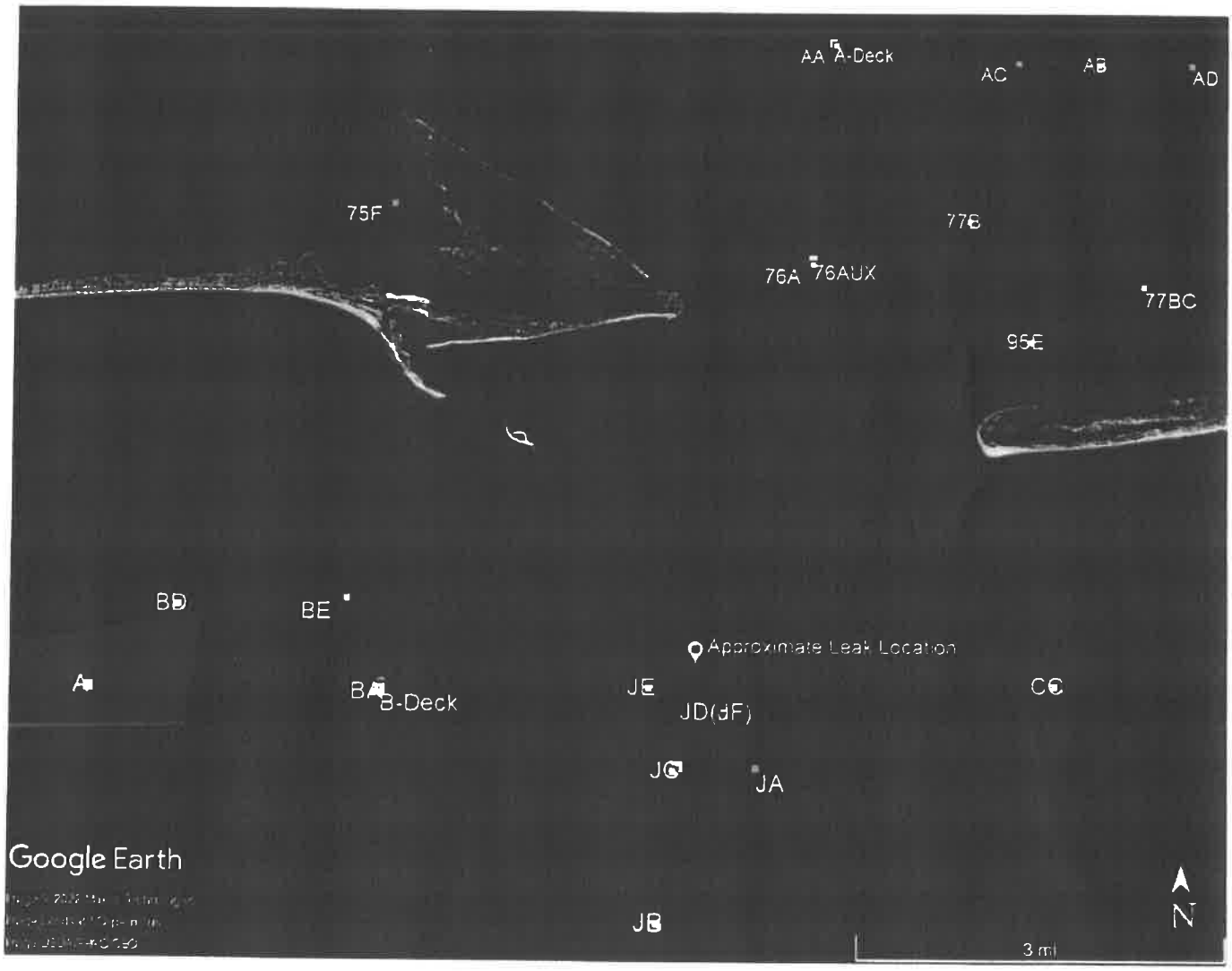
Safe rigging practices	Per diving contractor's standard procedures. Contractor approved deviations to standard procedures may be required upon water depth and rigging constraints.
Welding Code:	N/A
Welding and burning safe practices	N/A
NDE	N/A
Weld area coating repair	N/A
Subsea connectors	N/A
Flange make-up	N/A
Riser protection from marine vessel impact (replacement risers)	N/A
Pressure / leak testing	Once repair is completed, perform two (2) hour leak test with produced liquids and sweet gas at 675 psig stabilized pressure via the MB 113-A PLC Software.

H. Return to Service

Regulatory Approval	None required
Handling method for hydro test water	N/A
Hydrate prevention for dry gas pipelines	N/A; not a dry gas system
Pipeline recover / reburial	Natural reburial

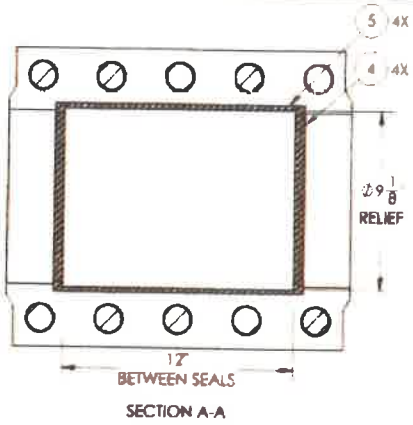
B. Attachments

Map

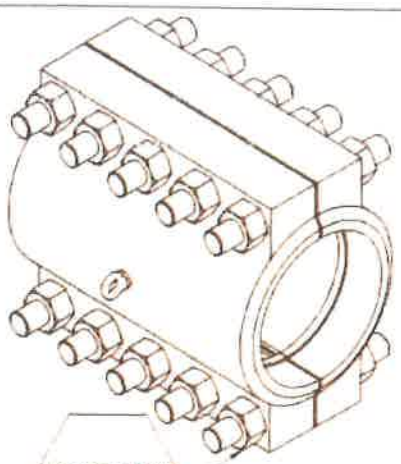


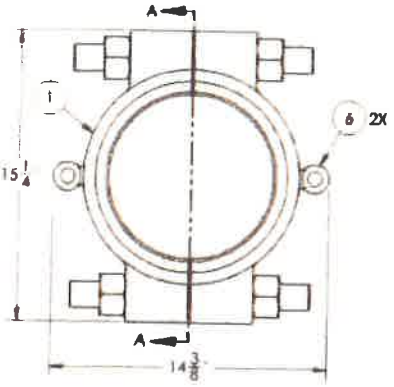
REPAIR CLAMP

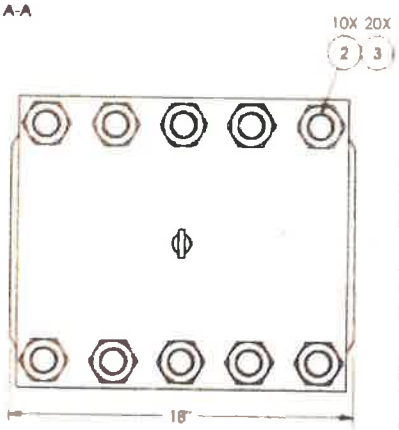
NOTES:
1.) HYDROSTATIC TEST PRESSURE: 1.5x MAOP
2.)RESIDUAL TORQUE VALUE WITH LIGHT MACHINE OIL = 651 ft-lbs.



SECTION A-A







ITEM NO.	MATERIAL	DESCRIPTION	QTY
1	A-350-GR.LF2 CL.1	8" x 18" LG. SPLIT+SLEEVE, 2220 PSI MAOP	1
2	A-193-GR.B7	1-3/8" - 8 x 12-1/2" LG. THREADED STUD	10
3	A-194-GR.2H	1-3/8" - 8 HEAVY HEX NUT	20
4		1/2" x 5/8" CIRCUMFERENTIAL PACKING	4
5		1/4" x 3/8" LONGITUDINAL PACKING	4
6	AISI 1035	PAD EYE #2	2

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL INC. ANY REPRODUCTION, DISCLOSURE, OR USE OF ITS CONTENTS OR ANY PART THEREOF IS EXPRESSLY PROHIBITED EXCEPT AS THE PIPE LINE DEVELOPMENT COMPANY/PLIDCO INTERNATIONAL INC. OTHERWISE MAY AGREE IN WRITING.

MATERIAL
WEIGHT: 361 LBS. TOTAL
DESIGN CODE: ASME SECTION VIII, DIV. 1 API 6H
SCALE
DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED

PLIDCO THE PIPE LINE DEVELOPMENT CO. WESTLAKE, OHIO
8" x 18" LG. PLIDCO SPLIT+SLEEVE
2220 PSI MAOP
DRAWN: A REINHART 11/14/19
APPROVED:
DATE
SIZE: B
DRAWING NUMBER: SS - 10682 - CF
SHEET: 1 of 1
REV: A

OGB-27

NOTIFICATION OF FIRE, SPILL, LEAK, OR BLOW OUT INCIDENT REPORT AND RELATED DOCUMENTS

JANUARY 11, 2022

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev 07/13
(File in duplicate)

Permit Number (if applicable) _____ API Number (if applicable) 01- . . . .

Fire ☐ Spill ☐ Leak ☐ Blow Out ☐

Name of operator W&T Offshore Date 1/11/22

Address 6000 Deakle Rd City Theodore State AL Zip 36582

1. Facility name MB 113 CPF 2. County Mobile

3. Facility Location* (surface) (give footage from nearest section or offshore tract lines) 3152' Section-Township-Range or Tract Mobile - OS

Latitude (NAD27) 30.19756 Longitude (NAD27) 88.07307

3. Field (If wildcat, so state) Fairway Field

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 1/11/22

Time: 12:00 PM Reported By (Company Representative): Eric Harbison

When Did Incident Occur? Date: 1/11/22 Time: 11:05 AM ☒ PM ☐

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced Water

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: South of Dauphin Island in the water

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: AOGB Contact Person: Leigh Blake

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Corrosion

Measures taken to control fire, spill, leak or blow out: Installed Clamp

Measures taken to clean up: NA

Measures taken to prevent reoccurrence of this incident: Installed Clamp

Date that cleanup operations completed (if completed): 1/27/22

Remarks: 8" Produced water line MB 113 platform

RECEIVED
AOGB MOBILE
8/10/22

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Eric W Harbison
Signature of Operator's Agent

8/10/2022
Date

STATE OIL AND GAS BOARD OF ALABAMA

Notification of Fire, Spill, Leak, or Blow Out Incident Report

Form OGB-27, Rev. 07/13
(File in duplicate)

Permit Number (if applicable): _____

API Number (if applicable): 01- _____

Fire ☐ Spill ☐ Leak ☒ Blow Out ☐

Name of operator: W&T Offshore

Date: 1/11/22

Address: 6000 Deakle Rd City: Theodore State: AL Zip: 36582

1. Facility name: MB 113 CPF

2. County: Mobile

3. Facility Location* (surface)

(give footage from nearest section or offshore tract lines): 3152'

Section-Township-Range or Tract: Mobile-OS

Latitude (NAD27): 30.10411

Longitude (NAD27): 88.04440

3. Field (If wildcat, so state): Fairway Field

NOTIFICATION OF INCIDENT

OGB Staff Member Notified: Leigh Blake Reporting Date: 1/11/22

Time: 12:00 pm Reported By (Company Representative): Eric Harbison

When Did Incident Occur? Date: 1/11/22 Time: 1:05 AM ☐ PM ☒

Did incident cause injury or death? Yes ☐ No ☒

If Yes, list names and indicate whether injury or death occurred: _____

Material spilled: Produced water

Estimated volume of spill or leak: Unknown

Material contained on location? Yes ☐ No ☒

If no, describe affected area below and on the reverse side of this form, draw a plat showing area affected by material.

Description of affected area: South of Dauphin Island in the water

Material entered a stream, creek, swamp, or and water area? Yes ☒ No ☐

If yes, identify other state and federal agencies that were notified:

Agency: AOGB Contact Person: Leigh Blake

Agency: _____ Contact Person: _____

CAUSE AND ACTIONS

Circumstances causing the incident: Corrosion

Measures taken to control fire, spill, leak or blow out: Installed clamp

Measures taken to clean up: NA

Measures taken to prevent reoccurrence of this incident: Installed Clamp

Date that cleanup operations completed (if completed): 1/27/22

Remarks: 8" Produced water line MB 113 platform

RECEIVED
AOGB MOBILE
7/27/22

* Omit for gathering lines

I am authorized to make the above report and have knowledge of the facts stated therein. I certify that said report is true and correct.

Eric W Harbison
Signature of Operator's Agent

7-27-2022
Date

Leigh Blake

From: Leigh Blake
Sent: Wednesday, January 12, 2022 3:24 PM
To: Eric Harbison
Subject: RE: [EXTERNAL]RE: 8" Line

Good idea...especially with this new rule coming out.

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Wednesday, January 12, 2022 3:15 PM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: RE: [EXTERNAL]RE: 8" Line

Leigh,
No PSC does not regulate this line. Kendra did mention about giving them a courteously notification of repair completed.

Eric Harbison
Mobile Bay district Supervisor

1-251-973-4601 (direct)
1-251-509-2992 (mobile)
eharbison@wtoffshore.com

W&T Offshore, Inc.
13700 Dauphin Island Pkwy
Coden, AL, US 36523-2920
+1 (713) 626-8525 (main)
www.wtoffshore.com

A U.S. Company helping to safely supply energy for its Country

From: Leigh Blake [mailto:LBlake@ogb.state.al.us]
Sent: Wednesday, January 12, 2022 2:42 PM
To: Eric Harbison
Cc: Joshua Young
Subject: [EXTERNAL]RE: 8" Line

Thanks Eric. Sorry to hear this. Do you know if this is one of the few lines that PSC regulates? And if so, were they contacted?

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Wednesday, January 12, 2022 2:33 PM
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Antoine Gautreaux <agautreaux@wtoffshore.com>
Subject: 8" Line

Good Afternoon Ms Leigh,
On Monday 1-10-22 we noticed a differential pressure on our 8" pipeline which we could not verify. Due to the variations in the pressure from normal and after discussions with our internal engineering team, we proceeded to

Leigh Blake

From: Eric Harbison <eharbison@wtoffshore.com>
Sent: Wednesday, January 12, 2022 2:33 PM
To: Leigh Blake
Cc: Antoine Gautreaux
Subject: 8" Line

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon Ms Leigh,
On Monday 1-10-22 we noticed a differential pressure on our 8" pipeline which we could not verify. Due to the variations in the pressure from normal and after discussions with our internal engineering team, we proceeded to exercise caution and shut-in the Fairway field. We continued our investigation into the pressure variations while we dispatched a boat to run the pipeline route in search of any leaks. There were no leaks observed. We began depressurizing the pipeline from the YH Pig trap while monitoring pressure at MB 113 until dark. We secured the line until daylight at which point we closed the Shoreline valve and proceed to bleed the section from the shoreline to YH Pig Trap.

Around Noon on Tuesday 1-11-22 a sheen was noted in the Fairway field. We then elected to bleed from MB 113 to flare simultaneously with Bleeding at the YH Pig Trap. In about one hour the sheen disappeared. At this point we notified our Engineering and regulatory Group who then activated our Spill Management Control Team. A report was filed to the Agencies regarding the event on Tuesday afternoon. Our Spill Management Team activated our Source Control Group who began to gather resources to investigate the source of the leak that was observed. We activated additional marine vessel support, diver support, jet pumps and other miscellaneous equipment needed to determine the location of the leak. US Environmental Services, Mobile were contacted with our plan to provide additional back support from an environmental perspective.

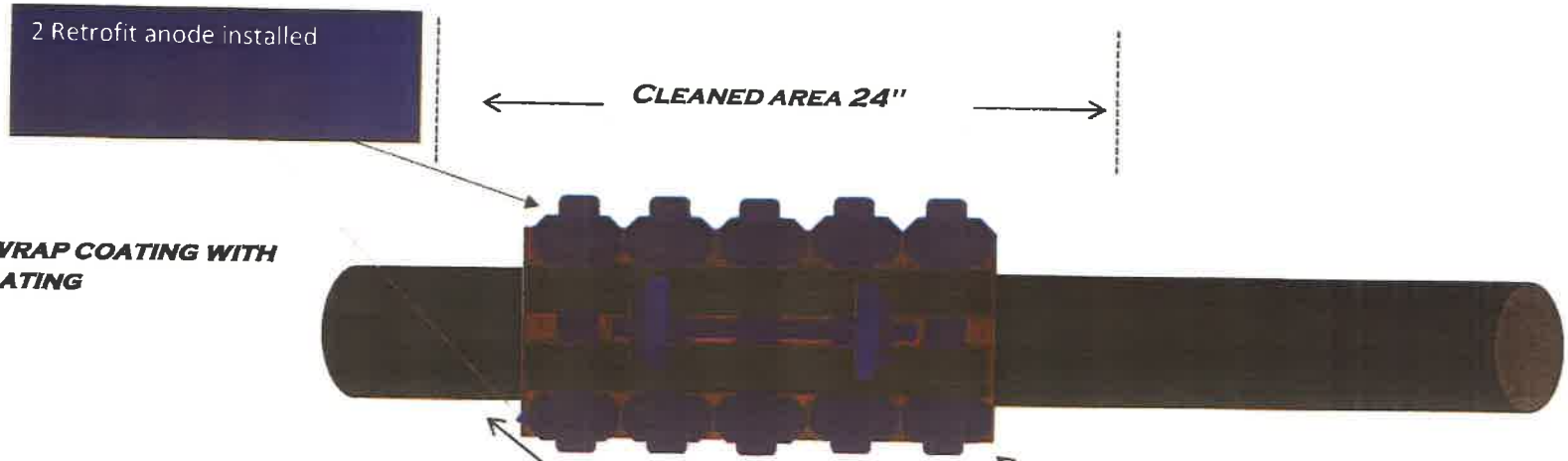
On Wednesday 1-12-22 using sweet fuel gas we pressured up the pipeline from MB 113 and the vessel on sight observed bubbles to the surface at the following coordinates 30.12.172 N 88.04.332W. The diver crew and our supervisor on site deployed a marker buoy to identify the bubble location and we began depressurizing the pipeline from MB 113. No additional sheens have been observed. We are currently mobilizing additional marine support to manage the jetting equipment needed to expose the pipe and determine the exact cause of the leak. Dependent on the cause, we will determine whether a PLIDCO clamp can be used to seal the leak. We will update you once we reach that point hopefully sometime tomorrow.
Thank you,

Eric Harbison
Mobile Bay district Supervisor

1-251-973-4601 (direct)
1-251-509-2992 (mobile)
eharbison@wtoffshore.com

W&T Offshore, Inc.
13700 Dauphin Island Pkwy
Coden, AL, US 36523-2920
+1 (713) 626-8525 (main)
www.wtoffshore.com

TRITON DIVING
DSV M/V EVEREADY
COMPANY, W&T MB 113 A 8"PIPELINE LEAK
DATE 1-23-22



BLACK PLASTIC WRAP COATING WITH
RED PIPELINE COATING

8" X 18" PLITCO CLAMP
MOAP 2220 PSI
SERIAL # 6156501

PIPELINE INSPECTION:
AVERAGE UT READING .400

LEAK LOCATION: 4 OCLOCK FACING
TOWARD STRUCTURE

DETAILS OF THE HOLE
1/8" LONG X 1/16" WIDE PINHOLI

Clock Position	12	3	6	9
1' North	.410	.395	.400	.400
Leak location	.400	.395	.400	.405
1' South	.400	.400	.395	.400
Triton Diving				
DSV M/V Eveready				
Date: 1-18-22				
Clock Positions Looking South				
Cygnus Thickness Tester				
MB 113 A 8" Liquids Pipeline Repair				
Diver: Reuben Reaume				

PLIDCO®
THE PIPE LINE DEVELOPMENT COMPANY
870 Canterbury Road · Westlake · OH · 44145-1419 · USA · p 440-871-5700 · 800-848-3333 · f 440-871-9577

TECHNICAL DATASHEET

Description: **Extruded TFE/P AFLAS® FEPM**

ASTM D-2000: **M4HK 814 B38 Z1 Z2 Z3**
Z1:75 +/-5 Durometer
Z2: Fluid resistance per ASTM D471 ASTM No. 3 oil
Z3: Low temperature brittleness per ASTM D2137 at -20°C

Service Temperatures: **High Limit: 225° F (107° C)**
Low Limit: -20° F (-29° C)
** For use in PLIDCO fittings**

Shelf Life: 20 years

Typical Applications:

- Hydrogen Sulfide (H2S)
- Caustics
- Amines
- High PH
- Bases
- Acids
- Crude oil
- Natural Gas
- Hot water, Steam

Limitations:

- Aromatic Hydrocarbons (Toluene, Benzene, etc.)
- Chlorinate Hydrocarbons (Trichlorethylene and Carbon Tetrachloride)
- Ketones

** Contact a PLIDCO representative for detailed chemical compatibility**

Typical Physical Properties:

• Shore "A" Durometer	75
• Tensile Strength (psi) (ASTM D412)	2325
• 100% Modulus (psi) (ASTM D412)	980
• Ultimate Elongation (%) (ASTM D412)	230
• Specific Gravity	1.54
• Density (lbs./cu.in.)	25.25
• Compression Set (ASTM D395 method "B")	
▪ 22 Hrs. @ 392 F (%)	30
▪ 70 Hrs. @ 392 F (%)	35
• Tear Resistance (Die "C" -lbs./in) (ASTM D624)	150
• Low Temperature Brittleness (ASTM D746)	-18°F

EXHIBIT "B"

TO THE AFFIDAVIT OF BUTCH GREGORY

Constituent	Bon Secour Bay	Fairway	Lower Mobile-Bay Mary Ann	Northcentral Gulf - Moblie Bay Area	Northwest Gulf - Mobile Bay Area	U.S. EPA drinking water Maximum Contaminant Level
Semivolatles	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Naphthalene	1.94	3.31	21.00	36.20	1.59	
2-Methylnaphthalene	1.12	1.80	6.69	11.60	ND	
Fluorene	ND	ND	ND	2.00	ND	
1-Methylnaphthalene	0.25	ND	ND	3.41	ND	
Biphenyl (Diphenyl)	0.996	1.44	4.16	18.70	ND	Biphenyl (Diphenyl) MCL 0.0005
Volatiles						
Benzene	13.20	15.30	350.00	153.00	4.02	Benzene MCL 0.005
Ethylbenzene	ND	9.08	88.90	67.60	ND	Ethylbenzene MCL 0.70
Isopropyl benzene (Cumene)	ND	4.02	ND	25.40	ND	
1,1,2,2-Tetrachloroethane	ND	ND	ND	0.25	ND	
Toluene	9.90	16.90	253.00	126.00	3.67	Toluene MCL 1.0
m&p-Xylene	ND	5.75	ND	ND	ND	m&p-Xylene MCL 10.0
o-Xylene	ND	9.64	ND	7.13	ND	o-Xylene MCL 10.1
Other	mg/L	mg/L	mg/L	mg/L	mg/L	
Oil & Grease	822.00	1050.00	1130.00	335.00	159.00	
Sulfide	872.00	144.00	672.00	13.40	256.00	
Nitrogen	113.00	107.00	173.00	80.50	102.00	Nitrogen MCL 10.0
Total Kjeldahl Nitrogen	112.00	105.00	173.00	80.50	102.00	
Nitrogen, NO2 plus NO3	ND	1.40	ND	ND	ND	

All samples were taken 11-18-2026
Yellow highlight indicates over MCL limit

ALABAMA OIL & GAS BOARD

Exhibit No: 23
Petitioner: Board
Item No: 2 Date: 2-19-26
Witness: Butch Gregory
Received by: EP

ANALYSIS OF PRODUCED LIQUIDS

BON SECOUR BAY FIELD

Constituent	Bon Secour Bay	Fairway	Lower Mobile-Bay Mary Ann	Northcentral Gulf - Moblie Bay Area	Northwest Gulf - Mobile Bay Area	U.S. EPA drinking water Maximum Contaminant Level
Semivolatles	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Naphthalene	1.94	3.31	21.00	36.20	1.59	
2-Methylnaphthalene	1.12	1.80	6.69	11.60	ND	
Fluorene	ND	ND	ND	2.00	ND	
1-Methylnaphthalene	0.25	ND	ND	3.41	ND	
Biphenyl (Diphenyl)	0.996	1.44	4.16	18.70	ND	Biphenyl (Diphenyl) MCL 0.0005
Volatiles						
Benzene	13.20	15.30	350.00	153.00	4.02	Benzene MCL 0.005
Ethylbenzene	ND	9.08	88.90	67.60	ND	Ethylbenzene MCL 0.70
Isopropyl benzene (Cumene)	ND	4.02	ND	25.40	ND	
1,1,2,2-Tetrachloroethane	ND	ND	ND	0.25	ND	
Toluene	9.90	16.90	253.00	126.00	3.67	Toluene MCL 1.0
m&p-Xylene	ND	5.75	ND	ND	ND	m&p-Xylene MCL 10.0
o-Xylene	ND	9.64	ND	7.13	ND	o-Xylene MCL 10.1
Other	mg/L	mg/L	mg/L	mg/L	mg/L	
Oil & Grease	822.00	1050.00	1130.00	335.00	159.00	
Sulfide	872.00	144.00	672.00	13.40	256.00	
Nitrogen	113.00	107.00	173.00	80.50	102.00	Nitrogen MCL 10.0
Total Kjeldahl Nitrogen	112.00	105.00	173.00	80.50	102.00	
Nitrogen, NO2 plus NO3	ND	1.40	ND	ND	ND	

All samples were taken 11-18-2026
Yellow highlight indicates over MCL limit

Marvin Rogers

From: Leigh Blake
Sent: Wednesday, January 7, 2026 10:53 AM
To: Marvin Rogers
Subject: Fwd: W&T Produced Liquids Sampling Request
Attachments: image002.jpg; image001.png; Bon Secour 20373467_frc.pdf; Fairway 20373469_frc.pdf; Mary Ann 20373461_frc.pdf; N Central Gulf 20373460_frc.pdf; Northwest Gulf 20373470 _frc.pdf

Begin forwarded message:

From: Deepu Dethan <ddethan@wtoffshore.com>
Date: December 2, 2025 at 3:48:45 PM CST
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Eric Harbison <eharbison@wtoffshore.com>, "John C. Poole" <jpoole@wtoffshore.com>, Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: W&T Produced Liquids Sampling Request

Hi Leigh:

Please find attached the lab results for the produced water samples collected. The lab had the following issues with the samples and was unable to run the analysis

- The Mary Ann, Bon Secour, and Northwest G samples cannot be run for pH and conductivity due to the sample's matrix. They have an excessive smell of gasoline which can damage the probes for these analysis.
- Also for all locations due to the alkalinity of the sample they were unable to run CO2.

Please let us know if how you would like to proceed.

Thanks
Deepu

Deepu Dethan
Environmental Manager
(251) 802 0204 (Direct)
ddethan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5778

From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Tuesday, October 14, 2025 2:20 PM
To: Deepu Dethan <ddethan@wtoffshore.com>; Kendra Sullivan <ksullivan@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>
Subject: W&T Produced Liquids Sampling Request

Good afternoon,

AOGB is requesting analysis on the produced liquids leaving each of the following fields at the state separator: Norwest Gulf, North Central Gulf, Bon Secour Bay, Mary Ann – Lower Mobile Bay, and Fairway. A commingled analysis BEFORE the OTF inlet separator is also being requested. The following parameters are requested to be analyzed per EPA methods and submitted to AOGB: H2S, CO2, N2, VOCs and SVOCs (including PAHs). Additionally, we would like the oil/water ratio we previously discussed. Please provide this information by December 1, 2025.

Thank you,

Leigh Blake, P.E.
Manager, South Alabama Field Operations
Alabama Oil and Gas Board
(251) 626-8214 (Office)
(251) 525-3324 (Cell)

From: Deepu Dethan <ddethan@wtoffshore.com>
Sent: Tuesday, October 7, 2025 1:39 PM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: My Contact information

Deepu Dethan
Environmental Manager
(251) 802-0204 (Direct)
ddethan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5778

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Marvin Rogers

To:	ddethan@wtoffshore.com
Cc:	Nick Tew; Rebecca Pritchett; ksullivan@wtoffshore.com; Kirk McQuillan; Butch Gregory; Elbert Patterson; Leigh Blake
Subject:	W&T Produced liquids line; sampling; analysis

Mr. Dethan,
Ms. Leigh Blake and the Board's South Alabama field office received your email dated December 2, 2025, about the contents of the W&T's produced liquids line. This is to remind you and W&T Offshore that your company's analysis of the contents of the produced line is due to be included in a response to Dr. Tew's letter of August 27, 2025. We understand from your email and the attachments that there are numerous details in preparing the analysis. We request that in your written response to Dr. Tew's letter that you prepare a written summary of the contents of the produced liquids line. You may wish to review Dr. Tew's letter, particularly the section entitled *Recent leaks in produced liquids pipeline.*

Marvin Rogers

Marvin Rogers
General Counsel
Assistant Attorney General
Alabama Oil and Gas Board
205-247-3680 office
205-394-3185 cell

STATE OIL AND GAS BOARD OF ALABAMA

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

August 27, 2025

Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

RE: Deficiencies in Offshore Operations

Dear Mr. Williford:

The Board's staff has determined that W&T Offshore has various deficiencies in offshore operations. We trust you will address them in an expeditious manner.

Bottom plugs in temporarily abandoned wells—We note that you have approximately 13 wells in temporarily abandoned status. Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* requires a bottom plug on all temporarily abandoned wells. You should submit a schedule for installing these bottom plugs.

Parted casing in State Lease 615 #1 Well—As you are aware, a well with parted tubing cannot be utilized until the well is repaired. Please submit a schedule for repairing the well (or plugging the well).

Unsafe platform; State Lease 537, Tract 112 #4 Well—You should immediately rectify the unsafe platform.

Recent leaks in produced liquids pipeline—Leigh Blake, Manager of South Alabama Field Operations, has noted that W&T has had five leaks in a produced liquids pipeline since November 2024. Such leaks are required to be reported on Form OGB-27, *Notification of Fire, Spill, Leak, or Blowout*. A form has not been filed for all five leaks, and the forms are missing accurate and complete information. Furthermore, on some of the forms, the determination of the estimated volume of the leak has been omitted.

Please determine the amount of the liquid that leaked from the pipeline and obtain an analysis of the contents of the produced liquids line. We assume that the produced liquids transported through the line include saltwater, corrosion inhibitor, scale inhibitor, gas condensate, and diesel fuel as well as traces of other elements.

Recertifications of structural integrity—Rule 400-2-6-.09 (4) of the *State Oil and Gas Board Administrative Code* requires an offshore operator to recertify the structural integrity of offshore platforms every five years. W&T is overdue in submitting these recertifications.

Please address these deficiencies and supply the information requested.

Thank you for your cooperation.

Sincerely yours,

Berry H. (Nick) Tew, Jr.
State Geologist and Oil & Gas Supervisor

CC:

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

JSt

Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

December 02, 2025

Laurentiu Pirvu
W&T Offshore
6000 Deakle Road
Theodore, AL 36582

RE: Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Dear Laurentiu Pirvu:

Enclosed are the analytical results for sample(s) received by the laboratory on November 18, 2025. The results relate only to the samples included in this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - New Orleans
- Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MK Brenner

Mary Kathryn Brenner
marykathryn.brenner@pacelabs.com
251-344-9106
Project Manager

Enclosures

cc: Deepu Dethan, W&T Offshore
Rocky Folse
Doris Leach, W&T Offshore/Aquasition II LLC

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

CERTIFICATIONS

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Pace Analytical Services New Orleans

Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 2000662024-10
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Texas Commission on Env. Quality (NELAC): T104704405-23-18
U.S. Dept. of Agriculture Foreign Soil Import: 525-23-117-89728

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
California Certification# 3096
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
DoD-ANAB #:ADE-3199
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Utah FL NELAC Reciprocity
Utah
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302
Florida DOH Certification # E87948
Illinois EPA Certification # 200050
ISO/IEC 17025 (A2LA) Certification # 6154.01
Kentucky UST DEP Certification # 123059
Louisiana DEQ Certification # 04168
Minnesota DOH Certification # 055-999-334
New York DOH Certification # 12064
North Dakota DEQ Certification # R-150
ISO/IEC 17025 (A2LA) Certification # 6154.01
South Carolina DES Certification # 83006001
Texas TCEQ Certification # T104704529
USDA APHIS Foreign Soil Permit # 525-24-3-36355
U.S. Fish & Wildlife Service Permit # 51774A
Virginia VELAP Certification # 460263
Wisconsin DATCP Certification # 444
Wisconsin DNR Certification # 405132750

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

SAMPLE SUMMARY

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20373467001	Produced Liquid	Water	11/18/25 09:30	11/18/25 15:45

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Mobile, AL 36609
251-344-9106

SAMPLE ANALYTE COUNT

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20373467001	**Produced Liquid**	EPA 8270E	RJN	77	PASI-G
		EPA 8260B	JRP	44	PASI-N
		EPA 1664B, 2010	TMO	1	PASI-N
		SM 4500-H+B	SWB	1	PASI-O
		SM 4500-S2F	JJB	1	PASI-O
		40CFR PART 432.2	TAE	1	PASI-N
		EPA 351.2	TAE	1	PASI-N
		SM 4500-NO3 F	JLH	1	PASI-N

PASI-G = Pace Analytical Services - Green Bay
PASI-N = Pace Analytical Services - New Orleans
PASI-O = Pace Analytical Services - Ormond Beach

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Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Sample: Produced Liquid **Lab ID: 20373467001** Collected: 11/18/25 09:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Phenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	108-95-2	L2
bis(2-Chloroethyl) ether	ND	ug/L	100	1	11/25/25 07:02	12/01/25 13:22	111-44-4	
2-Chlorophenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	106-46-7	
Benzyl alcohol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	100-51-6	
1,2-Dichlorobenzene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	95-50-1	
2-Methylphenol(o-Cresol)	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	95-48-7	L2
3&4-Methylphenol(m&p Cresol)	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22		
N-Nitroso-di-n-propylamine	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	621-64-7	
Hexachloroethane	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	67-72-1	
Nitrobenzene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	98-95-3	
Isophorone	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	78-59-1	
2-Nitrophenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	88-75-5	
2,4-Dimethylphenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	105-67-9	
Benzoic acid	ND	ug/L	500	1	11/25/25 07:02	12/01/25 13:22	65-85-0	
bis(2-Chloroethoxy)methane	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	111-91-1	
2,4-Dichlorophenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	120-82-1	
Naphthalene	1940	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	91-20-3	
4-Chloroaniline	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	59-50-7	
2-Methylnaphthalene	1120	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	91-57-6	
Hexachlorocyclopentadiene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	77-47-4	
2,4,6-Trichlorophenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	95-95-4	
2-Chloronaphthalene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	91-58-7	
2-Nitroaniline	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	88-74-4	
Dimethylphthalate	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	131-11-3	
Acenaphthylene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	606-20-2	
3-Nitroaniline	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	99-09-2	
Acenaphthene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	83-32-9	
2,4-Dinitrophenol	ND	ug/L	500	1	11/25/25 07:02	12/01/25 13:22	51-28-5	
4-Nitrophenol	ND	ug/L	100	1	11/25/25 07:02	12/01/25 13:22	100-02-7	
Dibenzofuran	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	121-14-2	
Diethylphthalate	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	7005-72-3	
Fluorene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	86-73-7	
4-Nitroaniline	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	100	1	11/25/25 07:02	12/01/25 13:22	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	101-55-3	
Hexachlorobenzene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	118-74-1	

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Sample: Produced Liquid **Lab ID: 20373467001** Collected: 11/18/25 09:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Pentachlorophenol	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	87-86-5	
Phenanthrene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	85-01-8	
Anthracene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	120-12-7	
Di-n-butylphthalate	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	84-74-2	
Fluoranthene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	206-44-0	
Pyrene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	129-00-0	
Butylbenzylphthalate	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	91-94-1	
Benzo(a)anthracene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	56-55-3	
Chrysene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	117-81-7	CH
Di-n-octylphthalate	ND	ug/L	100	1	11/25/25 07:02	12/01/25 13:22	117-84-0	CH
Benzo(b)fluoranthene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	207-08-9	
Benzo(a)pyrene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	53-70-3	
Benzo(g,h,i)perylene	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	191-24-2	
Pyridine	ND	ug/L	100	1	11/25/25 07:02	12/01/25 13:22	110-86-1	
N-Nitrosodimethylamine	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	62-75-9	
Carbazole	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	86-74-8	
1-Methylnaphthalene	**245**	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	90-12-0	
Benzidine	ND	ug/L	500	1	11/25/25 07:02	12/01/25 13:22	92-87-5	
Biphenyl (Diphenyl)	**996**	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	92-52-4	
Aniline	ND	ug/L	50.0	1	11/25/25 07:02	12/01/25 13:22	62-53-3	
Surrogates								
Nitrobenzene-d5 (S)	56	%	13-130	1	11/25/25 07:02	12/01/25 13:22	4165-60-0	
2-Fluorobiphenyl (S)	62	%	15-130	1	11/25/25 07:02	12/01/25 13:22	321-60-8	
Terphenyl-d14 (S)	83	%	50-133	1	11/25/25 07:02	12/01/25 13:22	1718-51-0	
Phenol-d6 (S)	19	%	10-130	1	11/25/25 07:02	12/01/25 13:22	13127-88-3	
2-Fluorophenol (S)	27	%	10-130	1	11/25/25 07:02	12/01/25 13:22	367-12-4	
2,4,6-Tribromophenol (S)	70	%	32-141	1	11/25/25 07:02	12/01/25 13:22	118-79-6	
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Acetone	ND	ug/L	5000	500		11/21/25 13:52	67-64-1	
Benzene	**13200**	ug/L	2500	500		11/21/25 13:52	71-43-2	D4,HS
Bromodichloromethane	ND	ug/L	2500	500		11/21/25 13:52	75-27-4	
Bromoform	ND	ug/L	2500	500		11/21/25 13:52	75-25-2	
Bromomethane	ND	ug/L	2500	500		11/21/25 13:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	5000	500		11/21/25 13:52	78-93-3	
Carbon disulfide	ND	ug/L	2500	500		11/21/25 13:52	75-15-0	
Carbon tetrachloride	ND	ug/L	2500	500		11/21/25 13:52	56-23-5	
Chlorobenzene	ND	ug/L	2500	500		11/21/25 13:52	108-90-7	
Chloroethane	ND	ug/L	2500	500		11/21/25 13:52	75-00-3	
Chloroform	ND	ug/L	2500	500		11/21/25 13:52	67-66-3	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Sample: Produced Liquid **Lab ID: 20373467001** Collected: 11/18/25 09:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Chloromethane	ND	ug/L	2500	500		11/21/25 13:52	74-87-3	
Dibromochloromethane	ND	ug/L	2500	500		11/21/25 13:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2500	500		11/21/25 13:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	2500	500		11/21/25 13:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	2500	500		11/21/25 13:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	2500	500		11/21/25 13:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	2500	500		11/21/25 13:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2500	500		11/21/25 13:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2500	500		11/21/25 13:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	2500	500		11/21/25 13:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	2500	500		11/21/25 13:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2500	500		11/21/25 13:52	10061-02-6	
Ethylbenzene	ND	ug/L	2500	500		11/21/25 13:52	100-41-4	
2-Hexanone	ND	ug/L	5000	500		11/21/25 13:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	2500	500		11/21/25 13:52	98-82-8	
Methyl acetate	ND	ug/L	5000	500		11/21/25 13:52	79-20-9	
Methylene Chloride	ND	ug/L	2500	500		11/21/25 13:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5000	500		11/21/25 13:52	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2500	500		11/21/25 13:52	1634-04-4	
Styrene	ND	ug/L	2500	500		11/21/25 13:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	2500	500		11/21/25 13:52	79-34-5	
Tetrachloroethene	ND	ug/L	2500	500		11/21/25 13:52	127-18-4	
Toluene	**9900**	ug/L	2500	500		11/21/25 13:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	2500	500		11/21/25 13:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2500	500		11/21/25 13:52	79-00-5	
Trichloroethene	ND	ug/L	2500	500		11/21/25 13:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	2500	500		11/21/25 13:52	75-69-4	
Vinyl chloride	ND	ug/L	1000	500		11/21/25 13:52	75-01-4	
m&p-Xylene	ND	ug/L	5000	500		11/21/25 13:52	179601-23-1	
o-Xylene	ND	ug/L	2500	500		11/21/25 13:52	95-47-6	
Surrogates								
Toluene-d8 (S)	101	%.	76-124	500		11/21/25 13:52	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	78-121	500		11/21/25 13:52	460-00-4	
Dibromofluoromethane (S)	96	%.	74-128	500		11/21/25 13:52	1868-53-7	
HEM, Oil and Grease	Analytical Method: EPA 1664B, 2010 Pace Analytical Services - New Orleans							
Oil and Grease	**822**	mg/L	6.2	1		11/24/25 12:18		P1
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Ormond Beach							
pH at 25 Degrees C	**5.6**	Std. Units	0.10	1		11/25/25 16:24		H6

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Sample: Produced Liquid **Lab ID: 20373467001** Collected: 11/18/25 09:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide	Analytical Method: SM 4500-S2F Pace Analytical Services - Ormond Beach							
Sulfide	**872**	mg/L	0.10	1		11/25/25 10:52	18496-25-8	
Total Nitrogen Calculation	Analytical Method: 40CFR PART 432.2 Pace Analytical Services - New Orleans							
Nitrogen	**113**	mg/L	0.15	1		12/01/25 09:45	7727-37-9	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - New Orleans							
Nitrogen, Kjeldahl, Total	**112**	mg/L	3.0	1	11/24/25 11:28	11/26/25 15:18	7727-37-9	P1
4500NO3-F, NO3-NO2	Analytical Method: SM 4500-NO3 F Pace Analytical Services - New Orleans							
Nitrogen, NO2 plus NO3	ND	mg/L	2.5	50		11/20/25 15:16		D3

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QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

QC Batch: 375900
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373467001

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloropropane	ug/L	ND	5.0	11/20/25 15:05	
2-Butanone (MEK)	ug/L	ND	10.0	11/20/25 15:05	
2-Hexanone	ug/L	ND	10.0	11/20/25 15:05	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/20/25 15:05	
Acetone	ug/L	ND	10.0	11/20/25 15:05	
Benzene	ug/L	ND	5.0	11/20/25 15:05	
Bromodichloromethane	ug/L	ND	5.0	11/20/25 15:05	
Bromoform	ug/L	ND	5.0	11/20/25 15:05	
Bromomethane	ug/L	ND	5.0	11/20/25 15:05	
Carbon disulfide	ug/L	ND	5.0	11/20/25 15:05	
Carbon tetrachloride	ug/L	ND	5.0	11/20/25 15:05	
Chlorobenzene	ug/L	ND	5.0	11/20/25 15:05	
Chloroethane	ug/L	ND	5.0	11/20/25 15:05	
Chloroform	ug/L	ND	5.0	11/20/25 15:05	
Chloromethane	ug/L	ND	5.0	11/20/25 15:05	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Dibromochloromethane	ug/L	ND	5.0	11/20/25 15:05	
Dichlorodifluoromethane	ug/L	ND	5.0	11/20/25 15:05	
Ethylbenzene	ug/L	ND	5.0	11/20/25 15:05	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/20/25 15:05	
m&p-Xylene	ug/L	ND	10.0	11/20/25 15:05	
Methyl acetate	ug/L	ND	10.0	11/20/25 15:05	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/20/25 15:05	
Methylene Chloride	ug/L	ND	5.0	11/20/25 15:05	
o-Xylene	ug/L	ND	5.0	11/20/25 15:05	
Styrene	ug/L	ND	5.0	11/20/25 15:05	
Tetrachloroethene	ug/L	ND	5.0	11/20/25 15:05	
Toluene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Trichloroethene	ug/L	ND	5.0	11/20/25 15:05	
Trichlorofluoromethane	ug/L	ND	5.0	11/20/25 15:05	

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REPORT OF LABORATORY ANALYSIS

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4320 Midmost Dr
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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	2.0	11/20/25 15:05	
4-Bromofluorobenzene (S)	%.	98	78-121	11/20/25 15:05	
Dibromofluoromethane (S)	%.	94	74-128	11/20/25 15:05	
Toluene-d8 (S)	%.	99	76-124	11/20/25 15:05	

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloropropane	ug/L	ND	5.0	11/21/25 11:59	
2-Butanone (MEK)	ug/L	ND	10.0	11/21/25 11:59	
2-Hexanone	ug/L	ND	10.0	11/21/25 11:59	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/21/25 11:59	
Acetone	ug/L	ND	10.0	11/21/25 11:59	
Benzene	ug/L	ND	5.0	11/21/25 11:59	
Bromodichloromethane	ug/L	ND	5.0	11/21/25 11:59	
Bromoform	ug/L	ND	5.0	11/21/25 11:59	
Bromomethane	ug/L	ND	5.0	11/21/25 11:59	
Carbon disulfide	ug/L	ND	5.0	11/21/25 11:59	
Carbon tetrachloride	ug/L	ND	5.0	11/21/25 11:59	
Chlorobenzene	ug/L	ND	5.0	11/21/25 11:59	
Chloroethane	ug/L	ND	5.0	11/21/25 11:59	
Chloroform	ug/L	ND	5.0	11/21/25 11:59	
Chloromethane	ug/L	ND	5.0	11/21/25 11:59	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Dibromochloromethane	ug/L	ND	5.0	11/21/25 11:59	
Dichlorodifluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Ethylbenzene	ug/L	ND	5.0	11/21/25 11:59	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/21/25 11:59	
m&p-Xylene	ug/L	ND	10.0	11/21/25 11:59	
Methyl acetate	ug/L	ND	10.0	11/21/25 11:59	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/21/25 11:59	
Methylene Chloride	ug/L	ND	5.0	11/21/25 11:59	
o-Xylene	ug/L	ND	5.0	11/21/25 11:59	
Styrene	ug/L	ND	5.0	11/21/25 11:59	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	5.0	11/21/25 11:59	
Toluene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Trichloroethene	ug/L	ND	5.0	11/21/25 11:59	
Trichlorofluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Vinyl chloride	ug/L	ND	2.0	11/21/25 11:59	
4-Bromofluorobenzene (S)	%.	101	78-121	11/21/25 11:59	
Dibromofluoromethane (S)	%.	105	74-128	11/21/25 11:59	
Toluene-d8 (S)	%.	103	76-124	11/21/25 11:59	

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	48.9	98	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	44.2	88	65-129	
1,1,2-Trichloroethane	ug/L	50	47.3	95	75-121	
1,1-Dichloroethane	ug/L	50	44.8	90	71-127	
1,1-Dichloroethene	ug/L	50	47.9	96	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	75-125	
1,2-Dichloroethane	ug/L	50	47.4	95	65-131	
1,2-Dichloropropane	ug/L	50	45.7	91	72-125	
2-Butanone (MEK)	ug/L	50	40.8	82	34-170	
2-Hexanone	ug/L	50	45.2	90	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.9	90	58-141	
Acetone	ug/L	50	38.3	77	16-192	
Benzene	ug/L	50	44.8	90	74-132	
Bromodichloromethane	ug/L	50	49.9	100	73-117	
Bromoform	ug/L	50	50.8	102	58-132	
Bromomethane	ug/L	50	45.1	90	47-157	
Carbon disulfide	ug/L	50	45.0	90	52-145	
Carbon tetrachloride	ug/L	50	49.6	99	68-129	
Chlorobenzene	ug/L	50	50.6	101	79-121	
Chloroethane	ug/L	50	44.6	89	34-160	
Chloroform	ug/L	50	46.0	92	70-120	
Chloromethane	ug/L	50	39.8	80	44-142	
cis-1,2-Dichloroethene	ug/L	50	46.1	92	71-124	
cis-1,3-Dichloropropene	ug/L	50	48.3	97	77-121	
Dibromochloromethane	ug/L	50	49.5	99	67-122	
Dichlorodifluoromethane	ug/L	50	42.8	86	28-148	
Ethylbenzene	ug/L	50	50.6	101	79-116	
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	100	100	78-119	
Methyl acetate	ug/L	50	43.3	87	47-155	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	44.5	89	58-135	
Methylene Chloride	ug/L	50	44.6	89	49-145	
o-Xylene	ug/L	50	50.8	102	77-121	
Styrene	ug/L	50	50.0	100	81-123	
Tetrachloroethene	ug/L	50	52.4	105	62-138	
Toluene	ug/L	50	48.8	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.3	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	49.0	98	77-121	
Trichloroethene	ug/L	50	48.2	96	77-117	
Trichlorofluoromethane	ug/L	50	49.2	98	45-164	
Vinyl chloride	ug/L	50	44.9	90	48-130	
4-Bromofluorobenzene (S)	%.			102	78-121	
Dibromofluoromethane (S)	%.			93	74-128	
Toluene-d8 (S)	%.			99	76-124	

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.3	99	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	57.2	114	65-129	
1,1,2-Trichloroethane	ug/L	50	52.3	105	75-121	
1,1-Dichloroethane	ug/L	50	47.9	96	71-127	
1,1-Dichloroethene	ug/L	50	46.5	93	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.7	105	75-125	
1,2-Dichloroethane	ug/L	50	48.9	98	65-131	
1,2-Dichloropropane	ug/L	50	50.4	101	72-125	
2-Butanone (MEK)	ug/L	50	52.1	104	34-170	
2-Hexanone	ug/L	50	58.5	117	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	52.2	104	58-141	
Acetone	ug/L	50	43.1	86	16-192	
Benzene	ug/L	50	46.5	93	74-132	
Bromodichloromethane	ug/L	50	52.4	105	73-117	
Bromoform	ug/L	50	41.7	83	58-132	
Bromomethane	ug/L	50	57.6	115	47-157	
Carbon disulfide	ug/L	50	46.5	93	52-145	
Carbon tetrachloride	ug/L	50	47.8	96	68-129	
Chlorobenzene	ug/L	50	48.2	96	79-121	
Chloroethane	ug/L	50	47.7	95	34-160	
Chloroform	ug/L	50	47.2	94	70-120	
Chloromethane	ug/L	50	36.9	74	44-142	
cis-1,2-Dichloroethene	ug/L	50	45.6	91	71-124	
cis-1,3-Dichloropropene	ug/L	50	52.3	105	77-121	
Dibromochloromethane	ug/L	50	48.3	97	67-122	
Dichlorodifluoromethane	ug/L	50	46.9	94	28-148	
Ethylbenzene	ug/L	50	48.6	97	79-116	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	97.4	97	78-119	
Methyl acetate	ug/L	50	53.6	107	47-155	
Methyl-tert-butyl ether	ug/L	50	48.7	97	58-135	
Methylene Chloride	ug/L	50	45.5	91	49-145	
o-Xylene	ug/L	50	48.0	96	77-121	
Styrene	ug/L	50	48.0	96	81-123	
Tetrachloroethene	ug/L	50	48.2	96	62-138	
Toluene	ug/L	50	48.9	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.7	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	54.1	108	77-121	
Trichloroethene	ug/L	50	47.6	95	77-117	
Trichlorofluoromethane	ug/L	50	62.6	125	45-164	
Vinyl chloride	ug/L	50	54.8	110	48-130	
4-Bromofluorobenzene (S)	%.			99	78-121	
Dibromofluoromethane (S)	%.			99	74-128	
Toluene-d8 (S)	%.			101	76-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	45.9	45.5	92	91	73-141	1	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.7	41.8	85	84	48-148	2	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	46.2	45.7	92	91	46-154	1	20	
1,1-Dichloroethane	ug/L	ND	50	50	40.8	40.5	82	81	63-145	1	20	
1,1-Dichloroethene	ug/L	ND	50	50	40.4	42.0	81	84	28-176	4	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.7	46.8	95	94	69-134	2	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.3	45.1	93	90	51-147	2	20	
1,2-Dichloropropane	ug/L	ND	50	50	43.2	42.8	86	86	64-140	1	20	
2-Butanone (MEK)	ug/L	ND	50	50	26.6	25.4	53	51	10-200	5	20	
2-Hexanone	ug/L	ND	50	50	36.8	35.1	74	70	40-157	5	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	42.0	41.5	84	83	36-165	1	20	
Acetone	ug/L	ND	50	50	16.1	17.3	32	35	10-200	7	20	
Benzene	ug/L	ND	50	50	42.8	42.7	86	85	29-186	0	20	
Bromodichloromethane	ug/L	ND	50	50	49.2	48.6	98	97	58-139	1	20	
Bromoform	ug/L	ND	50	50	50.7	49.7	101	99	57-135	2	20	
Bromomethane	ug/L	ND	50	50	46.5	52.4	93	105	42-168	12	20	
Carbon disulfide	ug/L	ND	50	50	37.0	39.1	74	78	44-170	6	20	
Carbon tetrachloride	ug/L	ND	50	50	48.2	48.0	96	96	45-162	0	20	
Chlorobenzene	ug/L	ND	50	50	47.7	47.8	95	96	71-135	0	20	
Chloroethane	ug/L	ND	50	50	44.1	47.7	88	95	32-175	8	20	
Chloroform	ug/L	ND	50	50	44.2	43.9	88	88	61-136	1	20	
Chloromethane	ug/L	ND	50	50	41.9	45.8	84	92	38-154	9	20	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
cis-1,2-Dichloroethene	ug/L	ND	50	50	43.2	43.9	86	88	44-160	2	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	45.8	45.3	92	91	47-153	1	20	
Dibromochloromethane	ug/L	ND	50	50	49.9	49.3	100	99	64-130	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	56.5	62.6	113	125	22-160	10	20	
Ethylbenzene	ug/L	ND	50	50	48.4	47.5	97	95	51-153	2	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	43.5	43.7	87	87	68-145	0	20	
m&p-Xylene	ug/L	ND	100	100	94.8	96.1	95	96	30-173	1	20	
Methyl acetate	ug/L	ND	50	50	42.8	37.4	86	75	20-173	13	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	41.0	40.1	82	80	36-160	2	20	
Methylene Chloride	ug/L	ND	50	50	40.4	40.3	81	81	56-140	0	20	
o-Xylene	ug/L	ND	50	50	48.3	48.7	97	97	10-197	1	20	
Styrene	ug/L	ND	50	50	46.3	47.1	93	94	37-163	2	20	
Tetrachloroethene	ug/L	ND	50	50	47.6	48.6	95	97	18-193	2	20	
Toluene	ug/L	ND	50	50	45.6	45.8	91	92	33-175	0	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	40.7	40.9	81	82	63-140	0	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	45.9	46.4	92	93	47-153	1	20	
Trichloroethene	ug/L	ND	50	50	44.6	44.2	89	88	24-181	1	20	
Trichlorofluoromethane	ug/L	ND	50	50	45.9	50.7	92	101	37-182	10	20	
Vinyl chloride	ug/L	ND	50	50	44.1	46.8	88	94	19-169	6	20	
4-Bromofluorobenzene (S)	%.						103	102	78-121			
Dibromofluoromethane (S)	%.						93	92	74-128			
Toluene-d8 (S)	%.						99	99	76-124			

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4320 Midmost Dr
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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

QC Batch: 523097
QC Batch Method: EPA 3510
Analysis Method: EPA 8270E
Analysis Description: 8270E Water MSSV Low Volume
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 20373467001

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,2-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,3-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,4-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2,4,5-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4,6-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dimethylphenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dinitrophenol	ug/L	ND	50.0	11/26/25 13:40	
2,4-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2,6-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2-Chloronaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Chlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Methylphenol(o-Cresol)	ug/L	ND	5.0	11/26/25 13:40	
2-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
2-Nitrophenol	ug/L	ND	5.0	11/26/25 13:40	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	5.0	11/26/25 13:40	
3,3'-Dichlorobenzidine	ug/L	ND	5.0	11/26/25 13:40	
3-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4,6-Dinitro-2-methylphenol	ug/L	ND	10.0	11/26/25 13:40	
4-Bromophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Chloro-3-methylphenol	ug/L	ND	5.0	11/26/25 13:40	
4-Chloroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Nitrophenol	ug/L	ND	10.0	11/26/25 13:40	
Acenaphthene	ug/L	ND	5.0	11/26/25 13:40	
Acenaphthylene	ug/L	ND	5.0	11/26/25 13:40	
Aniline	ug/L	ND	5.0	11/26/25 13:40	
Anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzidine	ug/L	ND	50.0	11/26/25 13:40	
Benzo(a)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(a)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(b)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(g,h,i)perylene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(k)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzoic acid	ug/L	ND	50.0	11/26/25 13:40	
Benzyl alcohol	ug/L	ND	5.0	11/26/25 13:40	

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QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethoxy)methane	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	11/26/25 13:40	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	11/26/25 13:40	
Butylbenzylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Carbazole	ug/L	ND	5.0	11/26/25 13:40	
Chrysene	ug/L	ND	5.0	11/26/25 13:40	
Di-n-butylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Di-n-octylphthalate	ug/L	ND	10.0	11/26/25 13:40	CH
Dibenz(a,h)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Dibenzofuran	ug/L	ND	5.0	11/26/25 13:40	
Diethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Dimethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Fluorene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorocyclopentadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloroethane	ug/L	ND	5.0	11/26/25 13:40	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Isophorone	ug/L	ND	5.0	11/26/25 13:40	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodimethylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodiphenylamine	ug/L	ND	5.0	11/26/25 13:40	
Naphthalene	ug/L	ND	5.0	11/26/25 13:40	
Nitrobenzene	ug/L	ND	5.0	11/26/25 13:40	
Pentachlorophenol	ug/L	ND	5.0	11/26/25 13:40	
Phenanthrene	ug/L	ND	5.0	11/26/25 13:40	
Phenol	ug/L	ND	5.0	11/26/25 13:40	
Pyrene	ug/L	ND	5.0	11/26/25 13:40	
Pyridine	ug/L	ND	10.0	11/26/25 13:40	
2,4,6-Tribromophenol (S)	%	64	32-141	11/26/25 13:40	
2-Fluorobiphenyl (S)	%	39	15-130	11/26/25 13:40	
2-Fluorophenol (S)	%	26	10-130	11/26/25 13:40	
Nitrobenzene-d5 (S)	%	55	13-130	11/26/25 13:40	
Phenol-d6 (S)	%	15	10-130	11/26/25 13:40	
Terphenyl-d14 (S)	%	83	50-133	11/26/25 13:40	

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	24.7	49	37-130	
1,2-Dichlorobenzene	ug/L	50	25.7	51	39-130	
1,3-Dichlorobenzene	ug/L	50	24.4	49	34-130	

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QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	24.0	48	36-130	
1-Methylnaphthalene	ug/L	50	24.3	49	45-130	
2,4,5-Trichlorophenol	ug/L	50	34.3	69	55-130	
2,4,6-Trichlorophenol	ug/L	50	34.4	69	59-130	
2,4-Dichlorophenol	ug/L	50	29.7	59	55-130	
2,4-Dimethylphenol	ug/L	50	32.5	65	47-130	
2,4-Dinitrophenol	ug/L	50	20.8J	42	10-131	
2,4-Dinitrotoluene	ug/L	50	37.6	75	69-130	
2,6-Dinitrotoluene	ug/L	50	38.2	76	61-130	
2-Chloronaphthalene	ug/L	50	27.6	55	48-130	
2-Chlorophenol	ug/L	50	27.7	55	52-130	
2-Methylnaphthalene	ug/L	50	23.0	46	41-130	
2-Methylphenol(o-Cresol)	ug/L	50	22.2	44	47-130	L2
2-Nitroaniline	ug/L	50	38.4	77	62-143	
2-Nitrophenol	ug/L	50	28.7	57	53-130	
3&4-Methylphenol(m&p Cresol)	ug/L	50	22.9	46	42-130	
3,3'-Dichlorobenzidine	ug/L	50	26.4	53	26-130	
3-Nitroaniline	ug/L	50	39.9	80	58-148	
4,6-Dinitro-2-methylphenol	ug/L	50	27.9	56	37-130	
4-Bromophenylphenyl ether	ug/L	50	32.2	64	55-130	
4-Chloro-3-methylphenol	ug/L	50	31.5	63	52-130	
4-Chloroaniline	ug/L	50	34.0	68	44-149	
4-Chlorophenylphenyl ether	ug/L	50	36.8	74	57-130	
4-Nitroaniline	ug/L	50	39.3	79	42-153	
4-Nitrophenol	ug/L	50	10.5	21	11-130	
Acenaphthene	ug/L	50	30.5	61	49-130	
Acenaphthylene	ug/L	50	32.0	64	53-130	
Aniline	ug/L	50	24.0	48	10-185	
Anthracene	ug/L	50	40.0	80	66-131	
Benzidine	ug/L		ND			
Benzo(a)anthracene	ug/L	50	41.2	82	69-130	
Benzo(a)pyrene	ug/L	50	40.5	81	68-130	
Benzo(b)fluoranthene	ug/L	50	42.2	84	68-130	
Benzo(g,h,i)perylene	ug/L	50	42.1	84	65-130	
Benzo(k)fluoranthene	ug/L	50	42.2	84	70-130	
Benzoic acid	ug/L	50	ND	20	14-130	
Benzyl alcohol	ug/L	50	25.4	51	46-130	
Biphenyl (Diphenyl)	ug/L		ND			
bis(2-Chloroethoxy)methane	ug/L	50	32.1	64	55-130	
bis(2-Chloroethyl) ether	ug/L	50	31.5	63	54-130	
bis(2-Ethylhexyl)phthalate	ug/L	50	40.5	81	66-130	
Butylbenzylphthalate	ug/L	50	41.4	83	66-130	
Carbazole	ug/L	50	42.7	85	63-156	
Chrysene	ug/L	50	43.5	87	70-130	
Di-n-butylphthalate	ug/L	50	41.3	83	64-130	
Di-n-octylphthalate	ug/L	50	37.7	75	53-130	CH
Dibenz(a,h)anthracene	ug/L	50	36.5	73	58-130	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibenzofuran	ug/L	50	34.4	69	58-130	
Diethylphthalate	ug/L	50	42.8	86	70-130	
Dimethylphthalate	ug/L	50	40.9	82	67-130	
Fluoranthene	ug/L	50	40.9	82	65-131	
Fluorene	ug/L	50	37.0	74	58-130	
Hexachloro-1,3-butadiene	ug/L	50	21.5	43	26-130	
Hexachlorobenzene	ug/L	50	34.3	69	61-130	
Hexachlorocyclopentadiene	ug/L	50	16.3	33	15-130	
Hexachloroethane	ug/L	50	22.6	45	29-130	
Indeno(1,2,3-cd)pyrene	ug/L	50	31.2	62	48-130	
Isophorone	ug/L	50	32.1	64	55-130	
N-Nitroso-di-n-propylamine	ug/L	50	30.2	60	53-130	
N-Nitrosodimethylamine	ug/L	50	15.9	32	32-130	
N-Nitrosodiphenylamine	ug/L	50	34.3	69	63-130	
Naphthalene	ug/L	50	26.6	53	49-130	
Nitrobenzene	ug/L	50	34.5	69	63-130	
Pentachlorophenol	ug/L	50	32.5	65	53-130	
Phenanthrene	ug/L	50	39.9	80	63-139	
Phenol	ug/L	50	11.0	22	23-130	L2
Pyrene	ug/L	50	44.9	90	70-130	
Pyridine	ug/L	50	9.4J	19	10-130	
2,4,6-Tribromophenol (S)	%			77	32-141	
2-Fluorobiphenyl (S)	%			53	15-130	
2-Fluorophenol (S)	%			30	10-130	
Nitrobenzene-d5 (S)	%			62	13-130	
Phenol-d6 (S)	%			20	10-130	
Terphenyl-d14 (S)	%			86	50-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/L	<0.0024 mg/L	50	50	28.8	27.8	58	56	26-130	4	36	
1,2-Dichlorobenzene	ug/L	<0.0020 mg/L	50	50	30.3	29.2	61	58	26-130	4	33	
1,3-Dichlorobenzene	ug/L	<0.0022 mg/L	50	50	27.0	28.0	54	56	23-130	4	40	
1,4-Dichlorobenzene	ug/L	<0.0018 mg/L	50	50	28.5	27.6	57	55	22-130	3	39	
1-Methylnaphthalene	ug/L	<0.0014 mg/L	50	50	30.2	30.2	60	60	32-130	0	22	
2,4,5-Trichlorophenol	ug/L	<0.0018 mg/L	50	50	35.4	38.5	71	77	10-131	8	50	
2,4,6-Trichlorophenol	ug/L	<0.0020 mg/L	50	50	37.7	36.6	75	73	10-130	3	50	

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Pace Analytical Services, LLC
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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dichlorophenol	ug/L	<0.0015 mg/L	50	50	35.1	32.8	70	66	19-130	7	45	
2,4-Dimethylphenol	ug/L	<0.0013 mg/L	50	50	31.4	37.9	63	76	44-130	19	21	
2,4-Dinitrophenol	ug/L	<0.012 mg/L	50	50	28J	27.1J	56	54	10-200		29	
2,4-Dinitrotoluene	ug/L	<0.0012 mg/L	50	50	41.9	41.2	84	82	48-130	2	20	
2,6-Dinitrotoluene	ug/L	<0.00085 mg/L	50	50	40.4	40.2	81	80	37-130	1	21	
2-Chloronaphthalene	ug/L	<0.0012 mg/L	50	50	32.9	33.4	66	67	32-130	2	25	
2-Chlorophenol	ug/L	<0.0026 mg/L	50	50	30.5	31.0	61	62	21-130	2	38	
2-Methylnaphthalene	ug/L	<0.0015 mg/L	50	50	30.8	30.5	62	61	28-130	1	23	
2-Methylphenol(o-Cresol)	ug/L	<0.00077 mg/L	50	50	26.4	26.5	53	53	36-130	1	32	
2-Nitroaniline	ug/L	<0.0026 mg/L	50	50	43.9	46.0	88	92	11-158	5	20	
2-Nitrophenol	ug/L	<0.0015 mg/L	50	50	34.7	33.4	69	67	14-130	4	41	
3&4-Methylphenol(m&p Cresol)	ug/L	<0.0018 mg/L	50	50	25.5	26.6	51	53	20-130	4	38	
3,3'-Dichlorobenzidine	ug/L	<0.0015 mg/L	50	50	21.4	21.3	43	43	10-130	0	28	
3-Nitroaniline	ug/L	<0.0018 mg/L	50	50	40.0	41.8	80	84	17-155	4	27	
4,6-Dinitro-2-methylphenol	ug/L	<0.0012 mg/L	50	50	33.6	30.9	67	62	10-137	8	34	
4-Bromophenylphenyl ether	ug/L	<0.0018 mg/L	50	50	38.6	38.2	77	76	42-145	1	21	
4-Chloro-3-methylphenol	ug/L	<0.00094 mg/L	50	50	34.4	34.3	69	69	43-130	0	20	
4-Chloroaniline	ug/L	<0.0025 mg/L	50	50	35.5	33.8	71	68	19-154	5	22	
4-Chlorophenylphenyl ether	ug/L	<0.0020 mg/L	50	50	40.8	38.4	82	77	43-147	6	20	
4-Nitroaniline	ug/L	<0.0024 mg/L	50	50	42.5	35.0	85	70	10-159	19	36	
4-Nitrophenol	ug/L	<0.0083 mg/L	50	50	13.5	13.1	27	26	10-130	3	36	
Acenaphthene	ug/L	<0.0015 mg/L	50	50	35.8	34.9	72	70	32-132	3	21	
Acenaphthylene	ug/L	<0.0013 mg/L	50	50	38.5	37.2	77	74	37-131	3	20	
Aniline	ug/L	<0.0026 mg/L	50	50	26.8	25.4	54	51	16-149	5	28	
Anthracene	ug/L	<0.0017 mg/L	50	50	43.2	42.4	86	85	43-136	2	20	
Benzo(a)anthracene	ug/L	<0.0012 mg/L	50	50	41.9	41.5	84	83	47-130	1	20	
Benzo(a)pyrene	ug/L	<0.0013 mg/L	50	50	43.4	43.3	87	87	36-130	0	20	

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzo(b)fluoranthene	ug/L	<0.0014 mg/L	50	50	42.6	41.1	85	82	41-130	4	20	
Benzo(g,h,i)perylene	ug/L	<0.0017 mg/L	50	50	43.4	43.6	87	87	41-131	0	20	
Benzo(k)fluoranthene	ug/L	<0.0014 mg/L	50	50	43.2	43.0	86	86	45-131	0	20	
Benzoic acid	ug/L	<0.019 mg/L	50	50	ND	ND	14	16	10-130		20	
Benzyl alcohol	ug/L	<0.0032 mg/L	50	50	30.8	30.5	62	61	46-130	1	21	
bis(2-Chloroethoxy)methane	ug/L	<0.0011 mg/L	50	50	38.4	36.7	77	73	40-130	4	20	
bis(2-Chloroethyl) ether	ug/L	<0.0062 mg/L	50	50	33.8	34.6	68	69	32-134	3	20	
bis(2-Ethylhexyl)phthalate	ug/L	<0.0021 mg/L	50	50	46.4	45.1	93	90	34-130	3	20	
Butylbenzylphthalate	ug/L	<0.0037 mg/L	50	50	46.1	41.8	92	84	39-130	10	20	
Carbazole	ug/L	<0.0011 mg/L	50	50	46.5	44.6	93	89	45-154	4	20	
Chrysene	ug/L	<0.0018 mg/L	50	50	44.8	43.2	90	86	53-135	4	20	
Di-n-butylphthalate	ug/L	<0.0012 mg/L	50	50	44.7	44.6	89	89	41-130	0	20	
Di-n-octylphthalate	ug/L	<0.0046 mg/L	50	50	45.3	45.5	91	91	24-130	0	20	CH
Dibenz(a,h)anthracene	ug/L	<0.0023 mg/L	50	50	41.1	37.1	82	74	36-130	10	20	
Dibenzofuran	ug/L	<0.00093 mg/L	50	50	40.2	39.7	80	79	47-140	1	20	
Diethylphthalate	ug/L	<0.0012 mg/L	50	50	44.5	43.1	89	86	48-130	3	20	
Dimethylphthalate	ug/L	<0.0013 mg/L	50	50	41.7	40.7	83	81	44-130	2	20	
Fluoranthene	ug/L	<0.0016 mg/L	50	50	43.1	41.0	86	82	47-131	5	20	
Fluorene	ug/L	<0.0014 mg/L	50	50	41.5	40.0	83	80	43-135	4	20	
Hexachloro-1,3-butadiene	ug/L	<0.0025 mg/L	50	50	26.3	25.9	53	52	10-130	2	50	
Hexachlorobenzene	ug/L	<0.0016 mg/L	50	50	39.0	37.9	78	76	51-142	3	20	
Hexachlorocyclopentadiene	ug/L	<0.0019 mg/L	50	50	17.0	17.6	34	35	10-130	3	50	
Hexachloroethane	ug/L	<0.0015 mg/L	50	50	27.7	26.3	55	53	10-130	5	50	
Indeno(1,2,3-cd)pyrene	ug/L	<0.0018 mg/L	50	50	36.5	34.2	73	68	30-130	6	20	
Isophorone	ug/L	<0.00098 mg/L	50	50	36.3	35.4	73	71	50-130	3	20	
N-Nitroso-di-n-propylamine	ug/L	<0.00082 mg/L	50	50	36.1	34.7	72	69	35-130	4	30	
N-Nitrosodimethylamine	ug/L	<0.0015 mg/L	50	50	16.0	17.9	32	36	10-130	11	31	

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
N-Nitrosodiphenylamine	ug/L	<0.00041 mg/L	50	50	41.9	42.2	84	84	57-130	1	20	
Naphthalene	ug/L	<0.0017 mg/L	50	50	32.1	30.8	63	61	34-130	4	20	
Nitrobenzene	ug/L	<0.0016 mg/L	50	50	39.8	38.6	80	77	50-132	3	23	
Pentachlorophenol	ug/L	<0.0016 mg/L	50	50	37.1	35.7	74	71	10-137	4	45	
Phenanthrene	ug/L	<0.0011 mg/L	50	50	43.0	41.5	86	83	48-142	4	20	
Phenol	ug/L	<0.00098 mg/L	50	50	12.4	12.1	25	24	10-130	2	36	1b
Pyrene	ug/L	<0.00098 mg/L	50	50	44.3	39.3	89	79	48-134	12	20	
Pyridine	ug/L	<0.0018 mg/L	50	50	17.5	11.4	35	23	17-130	42	50	
2,4,6-Tribromophenol (S)	%						75	74	32-141			
2-Fluorobiphenyl (S)	%						61	59	15-130			
2-Fluorophenol (S)	%						31	30	10-130			
Nitrobenzene-d5 (S)	%						70	68	13-130			
Phenol-d6 (S)	%						23	23	10-130			
Terphenyl-d14 (S)	%						83	74	50-133			

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QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

QC Batch: 376090
QC Batch Method: EPA 1664B, 2010
Analysis Method: EPA 1664B, 2010
Analysis Description: 1664 HEM, Oil and Grease
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373467001

METHOD BLANK: 1826560 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	11/24/25 12:18	

LABORATORY CONTROL SAMPLE: 1826561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	34.4	86	78-114	

MATRIX SPIKE SAMPLE: 1826562

Parameter	Units	20373385002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	33.7	80	78-114	

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QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

QC Batch: 1147576
QC Batch Method: SM 4500-S2F
Analysis Method: SM 4500-S2F
Analysis Description: 4500S2F Sulfide
Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 20373467001

METHOD BLANK: 6290584 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	11/25/25 09:32	

LABORATORY CONTROL SAMPLE & LCSD: 6290585 6290586

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	6	5.8	5.8	96	96	80-120	0	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

QC Batch: 376100
QC Batch Method: EPA 351.2
Analysis Method: EPA 351.2
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373467001

METHOD BLANK: 1826586 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.15	11/26/25 15:08	

LABORATORY CONTROL SAMPLE: 1826587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	6.6	6.5	100	90-110	

MATRIX SPIKE SAMPLE: 1826589

Parameter	Units	20372419001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	2.5	166	242	75-125	M1

SAMPLE DUPLICATE: 1826588

Parameter	Units	20372419001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	164	2	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

QC Batch: 375770
QC Batch Method: SM 4500-NO3 F
Analysis Method: SM 4500-NO3 F
Analysis Description: SM4500NO3-F, Nitrate, Preserved
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373467001

METHOD BLANK: 1824783 Matrix: Water
Associated Lab Samples: 20373467001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.050	11/20/25 15:09	

LABORATORY CONTROL SAMPLE: 1824784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	6	5.6	93	90-110	

MATRIX SPIKE SAMPLE: 1824786

Parameter	Units	20373411001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	1	1.1	93	80-120	

SAMPLE DUPLICATE: 1824785

Parameter	Units	20373411001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	0.15	3	20	

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QUALIFIERS

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

ANALYTE QUALIFIERS

1b	This sample was sub-sampled from an AG1 for a 100 mL extraction.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P1	Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

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251-344-9106

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Produced Liquids - Bon Secour
Pace Project No.: 20373467

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20373467001	**Produced Liquid**	EPA 3510	523097	EPA 8270E	523163
20373467001	**Produced Liquid**	EPA 8260B	375900		
20373467001	**Produced Liquid**	EPA 1664B, 2010	376090		
20373467001	**Produced Liquid**	SM 4500-H+B	1147808		
20373467001	**Produced Liquid**	SM 4500-S2F	1147576		
20373467001	**Produced Liquid**	40CFR PART 432.2	376483		
20373467001	**Produced Liquid**	EPA 351.2	376100	EPA 351.2	376361
20373467001	**Produced Liquid**	SM 4500-NO3 F	375770		

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Pace® Location Requested (City/State):
Pace Analytical Mobile
4320 Midmost Dr, Mobile, AL 36609

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO# : 20373467

20373467

Company Name:	W&T Offshore/Aquasition II LLC
Street Address:	6000 Deakle Road Theodore, AL 36582
Customer Project #:	
Project Name:	Produced Liquids - Bon Secour Bay
Site Collection Info/Facility ID (as applicable):	MB 624 Produced Liquids SOV

Contact/Report To:	Laurentiu Pirvu
Phone #:	(251)973-4627
E-Mail:	lpirvu@wtoffshore.com
Cc E-Mail:	
Invoice To:	Invoice Aquasition II
Invoice E-Mail:	apinv@wtoffshore.com
Purchase Order # (if applicable):	380000-353248
Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET

County / State origin of sample(s): Alabama

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	8260 MSV	8270 w/PAH	CO2	HEM, Oil and Grease	Hydrogen Sulfide	TKN, NO2+NO3, TN	Sample Comment
SB Produced liquid	SB		11-18-25	9:00 AM	11-18-25	9:30 AM										
SB Produced liquid	SB															
SB Produced liquid	SB															
SB Produced liquid	SB															
SB Produced liquid	SB															
SB Produced liquid	SB															
SB Produced liquid	SB															
SB Produced liquid	SB															

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Mary Kathryn Brenner

AcctNum / Client ID:

Table #:

Profile / Template: 17643

Prelog / Bottle Ord. ID: EZ 3322746

Preservation non conformance identified for sample

Additional Instructions from Pace®:

Collected By: (Printed Name) Russell Hardesty

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	MOTUM 1	0	15.2	15.2	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
	11-18-25/9:00 AM			
WOT OFFSHORE	11-18-25 3:15 pm	Elizabeth Ray	11/18/25 1546	Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace Analytical

Sample Condition Upon Receipt

4320 Midmost Dr. Mobile, AL 36609

Project #:

WO#: 20373467

PM: MKB Due Date: 11/26/25

CLIENT: MO-WT

Courier: ☐ Pace ☑ Client ☐ FedEx ☐ UPS ☐ Other Tracking # _____

Custody Seal on Cooler/Box Present: [see COC] Custody Seals intact: ☐Yes ☐No

Thermometer Used: ☐ Therm Fisher IR 001 ☑ Other: MOTM21

Type of Ice: (Wet) Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Date and Initials of person examining contents: CA 11/18/25

Temp must be measured from temperature blank when present

			Comments:
Temperature Blank Present:	☐Yes	☑No ☐N/A	1
Chain of Custody Present:	☑Yes	☐No ☐N/A	2
Chain of Custody Complete:	☑Yes	☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes	☐No ☐N/A	4
Sampler Name on COC:	☑Yes	☐No ☐N/A	5
Short Hold Time Analyses (<72 hr):	☐Yes	☑No ☐N/A	6
Rush Turn Around Requested:	☐Yes	☑No ☐N/A	7
Samples Arrived within Hold Time:	☑Yes	☐No ☐N/A	8
Sufficient Volume:	☑Yes	☐No ☐N/A	9
Correct Containers Used:	☑Yes	☐No ☐N/A	10
Filtered vol. Rec. for Diss. tests	☐Yes	☐No ☑N/A	11
Sample Labels match COC:	☑Yes	☐No ☐N/A	12
All containers received within manufacturer's precautionary and/or expiration dates:	☑Yes	☐No ☐N/A	13
All containers needing chemical preservation have been checked (except VOA, micro, & O&G):	☐Yes	☐No ☑N/A	14
All containers preservation checked found to be in compliance with EPA recommendation:	☐Yes	☐No ☑N/A	15 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	☐Yes	☑No ☐N/A	16
Trip Blank Present:	☐Yes	☑No	17

Client Notification/Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Client Aware Samples are out of temp

ANALYSIS OF PRODUCED LIQUIDS

FAIRWAY FIELD

Marvin Rogers

To: ddethan@wtoffshore.com
Cc: Nick Tew; Rebecca Pritchett; ksullivan@wtoffshore.com; Kirk McQuillan; Butch Gregory; Elbert Patterson; Leigh Blake
Subject: W&T Produced liquids line; sampling; analysis

Mr. Dethan,
Ms. Leigh Blake and the Board's South Alabama field office received your email dated December 2, 2025, about the contents of the W&T's produced liquids line. This is to remind you and W&T Offshore that your company's analysis of the contents of the produced line is due to be included in a response to Dr. Tew's letter of August 27, 2025. We understand from your email and the attachments that there are numerous details in preparing the analysis. We request that in your written response to Dr. Tew's letter that you prepare a written summary of the contents of the produced liquids line. You may wish to review Dr. Tew's letter, particularly the section entitled *Recent leaks in produced liquids pipeline.*

Marvin Rogers

Marvin Rogers
General Counsel
Assistant Attorney General
Alabama Oil and Gas Board
205-247-3680 office
205-394-3185 cell

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

STATE OF ALABAMA

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

August 27, 2025

Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

RE: Deficiencies in Offshore Operations

Dear Mr. Williford:

The Board's staff has determined that W&T Offshore has various deficiencies in offshore operations. We trust you will address them in an expeditious manner.

Bottom plugs in temporarily abandoned wells—We note that you have approximately 13 wells in temporarily abandoned status. Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* requires a bottom plug on all temporarily abandoned wells. You should submit a schedule for installing these bottom plugs.

Parted casing in State Lease 615 #1 Well—As you are aware, a well with parted tubing cannot be utilized until the well is repaired. Please submit a schedule for repairing the well (or plugging the well).

Unsafe platform; State Lease 537, Tract 112 #4 Well—You should immediately rectify the unsafe platform.

Recent leaks in produced liquids pipeline—Leigh Blake, Manager of South Alabama Field Operations, has noted that W&T has had five leaks in a produced liquids pipeline since November 2024. Such leaks are required to be reported on Form OGB-27, *Notification of Fire, Spill, Leak, or Blowout*. A form has not been filed for all five leaks, and the forms are missing accurate and complete information. Furthermore, on some of the forms, the determination of the estimated volume of the leak has been omitted.

Please determine the amount of the liquid that leaked from the pipeline and obtain an analysis of the contents of the produced liquids line. We assume that the produced liquids transported through the line include saltwater, corrosion inhibitor, scale inhibitor, gas condensate, and diesel fuel as well as traces of other elements.

Recertifications of structural integrity—Rule 400-2-6-.09 (4) of the *State Oil and Gas Board Administrative Code* requires an offshore operator to recertify the structural integrity of offshore platforms every five years. W&T is overdue in submitting these recertifications.

Please address these deficiencies and supply the information requested.

Thank you for your cooperation.

Sincerely yours,

Berry H. (Nick) Tew, Jr.
State Geologist and Oil & Gas Supervisor

CC:

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

JSt

Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

December 02, 2025

Laurentiu Pirvu
W&T Offshore
6000 Deakle Road
Theodore, AL 36582

RE: Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Dear Laurentiu Pirvu:

Enclosed are the analytical results for sample(s) received by the laboratory on November 18, 2025. The results relate only to the samples included in this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - New Orleans
- Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MK Brenner

Mary Kathryn Brenner
marykathryn.brenner@pacelabs.com
251-344-9106
Project Manager

Enclosures

cc: Deepu Dethan, W&T Offshore
Rocky Folse
Doris Leach, W&T Offshore/Aquasition II LLC

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

CERTIFICATIONS

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Pace Analytical Services New Orleans
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 2000662024-10
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Texas Commission on Env. Quality (NELAC): T104704405-23-18
U.S. Dept. of Agriculture Foreign Soil Import: 525-23-117-89728

Pace Analytical Services Ormond Beach
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
California Certification# 3096
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
DoD-ANAB #:ADE-3199
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Utah FL NELAC Reciprocity
Utah
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida DOH Certification # E87948
Illinois EPA Certification # 200050
ISO/IEC 17025 (A2LA) Certification # 6154.01
Kentucky UST DEP Certification # 123059
Louisiana DEQ Certification # 04168
Minnesota DOH Certification # 055-999-334
New York DOH Certification # 12064
North Dakota DEQ Certification # R-150
ISO/IEC 17025 (A2LA) Certification # 6154.01
South Carolina DES Certification # 83006001
Texas TCEQ Certification # T104704529
USDA APHIS Foreign Soil Permit # 525-24-3-36355
U.S. Fish & Wildlife Service Permit # 51774A
Virginia VELAP Certification # 460263
Wisconsin DATCP Certification # 444
Wisconsin DNR Certification # 405132750

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

SAMPLE SUMMARY

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20373469001	**Fairway**	Water	11/18/25 13:30	11/18/25 15:45

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

SAMPLE ANALYTE COUNT

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20373469001	Fairway	EPA 8270E	TPO	77	PASI-G
		EPA 8260B	JRP	44	PASI-N
		EPA 1664B, 2010	TMO	1	PASI-N
		SM 2320B	JH2	1	PASI-O
		SM 2510B	TMM2	1	PASI-O
		SM 4500-S2F	JJB	1	PASI-O
		40CFR PART 432.2	TAE	1	PASI-N
		EPA 351.2	TAE	1	PASI-N
		SM 4500-NO3 F	JLH	1	PASI-N

PASI-G = Pace Analytical Services - Green Bay
PASI-N = Pace Analytical Services - New Orleans
PASI-O = Pace Analytical Services - Ormond Beach

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Sample: Fairway **Lab ID: 20373469001** Collected: 11/18/25 13:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Phenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	108-95-2	D3,L2
bis(2-Chloroethyl) ether	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:27	111-44-4	
2-Chlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	106-46-7	
Benzyl alcohol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	100-51-6	
1,2-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	95-50-1	
2-Methylphenol(o-Cresol)	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	95-48-7	L2
3&4-Methylphenol(m&p Cresol)	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27		
N-Nitroso-di-n-propylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	621-64-7	
Hexachloroethane	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	67-72-1	
Nitrobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	98-95-3	
Isophorone	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	78-59-1	
2-Nitrophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	88-75-5	
2,4-Dimethylphenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	105-67-9	
Benzoic acid	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 19:27	65-85-0	
bis(2-Chloroethoxy)methane	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	111-91-1	
2,4-Dichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	120-82-1	
Naphthalene	**3310**	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	91-20-3	
4-Chloroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	59-50-7	
2-Methylnaphthalene	**1800**	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	91-57-6	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	77-47-4	
2,4,6-Trichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	95-95-4	
2-Chloronaphthalene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	91-58-7	
2-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	88-74-4	
Dimethylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	131-11-3	
Acenaphthylene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	606-20-2	
3-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	99-09-2	
Acenaphthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	83-32-9	
2,4-Dinitrophenol	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 19:27	51-28-5	
4-Nitrophenol	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:27	100-02-7	
Dibenzofuran	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	121-14-2	
Diethylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	7005-72-3	
Fluorene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	86-73-7	
4-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:27	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	101-55-3	
Hexachlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	118-74-1	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Sample: Fairway **Lab ID: 20373469001** Collected: 11/18/25 13:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Pentachlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	87-86-5	
Phenanthrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	85-01-8	
Anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	120-12-7	
Di-n-butylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	84-74-2	
Fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	206-44-0	
Pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	129-00-0	
Butylbenzylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	91-94-1	
Benzo(a)anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	56-55-3	
Chrysene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	117-81-7	
Di-n-octylphthalate	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:27	117-84-0	CH
Benzo(b)fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	207-08-9	
Benzo(a)pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	53-70-3	
Benzo(g,h,i)perylene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	191-24-2	
Pyridine	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:27	110-86-1	
N-Nitrosodimethylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	62-75-9	
Carbazole	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	86-74-8	
1-Methylnaphthalene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	90-12-0	
Benzidine	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 19:27	92-87-5	
Biphenyl (Diphenyl)	1440	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	92-52-4	
Aniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:27	62-53-3	
Surrogates								
Nitrobenzene-d5 (S)	57	%	13-130	20	11/25/25 07:02	11/26/25 19:27	4165-60-0	
2-Fluorobiphenyl (S)	72	%	15-130	20	11/25/25 07:02	11/26/25 19:27	321-60-8	
Terphenyl-d14 (S)	75	%	50-133	20	11/25/25 07:02	11/26/25 19:27	1718-51-0	
Phenol-d6 (S)	20	%	10-130	20	11/25/25 07:02	11/26/25 19:27	13127-88-3	
2-Fluorophenol (S)	31	%	10-130	20	11/25/25 07:02	11/26/25 19:27	367-12-4	
2,4,6-Tribromophenol (S)	56	%	32-141	20	11/25/25 07:02	11/26/25 19:27	118-79-6	
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Acetone	ND	ug/L	1000	100		11/21/25 14:10	67-64-1	
Benzene	15300	ug/L	500	100		11/21/25 14:10	71-43-2	D4
Bromodichloromethane	ND	ug/L	500	100		11/21/25 14:10	75-27-4	
Bromoform	ND	ug/L	500	100		11/21/25 14:10	75-25-2	
Bromomethane	ND	ug/L	500	100		11/21/25 14:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	1000	100		11/21/25 14:10	78-93-3	
Carbon disulfide	ND	ug/L	500	100		11/21/25 14:10	75-15-0	
Carbon tetrachloride	ND	ug/L	500	100		11/21/25 14:10	56-23-5	
Chlorobenzene	ND	ug/L	500	100		11/21/25 14:10	108-90-7	
Chloroethane	ND	ug/L	500	100		11/21/25 14:10	75-00-3	
Chloroform	ND	ug/L	500	100		11/21/25 14:10	67-66-3	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Sample: Fairway **Lab ID: 20373469001** Collected: 11/18/25 13:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Chloromethane	ND	ug/L	500	100		11/21/25 14:10	74-87-3	
Dibromochloromethane	ND	ug/L	500	100		11/21/25 14:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	500	100		11/21/25 14:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	500	100		11/21/25 14:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	500	100		11/21/25 14:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	500	100		11/21/25 14:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	500	100		11/21/25 14:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	500	100		11/21/25 14:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	500	100		11/21/25 14:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	500	100		11/21/25 14:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	500	100		11/21/25 14:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	500	100		11/21/25 14:10	10061-02-6	
Ethylbenzene	**9080**	ug/L	500	100		11/21/25 14:10	100-41-4	
2-Hexanone	ND	ug/L	1000	100		11/21/25 14:10	591-78-6	
Isopropylbenzene (Cumene)	**4020**	ug/L	500	100		11/21/25 14:10	98-82-8	
Methyl acetate	ND	ug/L	1000	100		11/21/25 14:10	79-20-9	
Methylene Chloride	ND	ug/L	500	100		11/21/25 14:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1000	100		11/21/25 14:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	500	100		11/21/25 14:10	1634-04-4	
Styrene	ND	ug/L	500	100		11/21/25 14:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	500	100		11/21/25 14:10	79-34-5	
Tetrachloroethene	ND	ug/L	500	100		11/21/25 14:10	127-18-4	
Toluene	**16900**	ug/L	500	100		11/21/25 14:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	500	100		11/21/25 14:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	500	100		11/21/25 14:10	79-00-5	
Trichloroethene	ND	ug/L	500	100		11/21/25 14:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	500	100		11/21/25 14:10	75-69-4	
Vinyl chloride	ND	ug/L	200	100		11/21/25 14:10	75-01-4	
m&p-Xylene	**5750**	ug/L	1000	100		11/21/25 14:10	179601-23-1	
o-Xylene	**964**	ug/L	500	100		11/21/25 14:10	95-47-6	
Surrogates								
Toluene-d8 (S)	103	%.	76-124	100		11/21/25 14:10	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	78-121	100		11/21/25 14:10	460-00-4	
Dibromofluoromethane (S)	96	%.	74-128	100		11/21/25 14:10	1868-53-7	
HEM, Oil and Grease	Analytical Method: EPA 1664B, 2010 Pace Analytical Services - New Orleans							
Oil and Grease	**1050**	mg/L	5.0	1		11/24/25 12:18		
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Ormond Beach							
Alkalinity, Total as CaCO3	**63.8**	mg/L	5.0	1		11/24/25 17:47		

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251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Sample: Fairway **Lab ID: 20373469001** Collected: 11/18/25 13:30 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B Pace Analytical Services - Ormond Beach							
Specific Conductance @ 25C	**39200**	umhos/cm	2.0	1		11/26/25 00:37		
4500S2F Sulfide	Analytical Method: SM 4500-S2F Pace Analytical Services - Ormond Beach							
Sulfide	**144**	mg/L	0.10	1		11/25/25 10:42	18496-25-8	
Total Nitrogen Calculation	Analytical Method: 40CFR PART 432.2 Pace Analytical Services - New Orleans							
Nitrogen	**107**	mg/L	0.15	1		12/01/25 09:45	7727-37-9	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - New Orleans							
Nitrogen, Kjeldahl, Total	**105**	mg/L	3.0	1	11/24/25 11:28	11/26/25 15:18	7727-37-9	P1
4500NO3-F, NO3-NO2	Analytical Method: SM 4500-NO3 F Pace Analytical Services - New Orleans							
Nitrogen, NO2 plus NO3	**1.4**	mg/L	1.0	20		11/20/25 15:17		D4

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 375900
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373469001

METHOD BLANK: 1825488
Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloropropane	ug/L	ND	5.0	11/20/25 15:05	
2-Butanone (MEK)	ug/L	ND	10.0	11/20/25 15:05	
2-Hexanone	ug/L	ND	10.0	11/20/25 15:05	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/20/25 15:05	
Acetone	ug/L	ND	10.0	11/20/25 15:05	
Benzene	ug/L	ND	5.0	11/20/25 15:05	
Bromodichloromethane	ug/L	ND	5.0	11/20/25 15:05	
Bromoform	ug/L	ND	5.0	11/20/25 15:05	
Bromomethane	ug/L	ND	5.0	11/20/25 15:05	
Carbon disulfide	ug/L	ND	5.0	11/20/25 15:05	
Carbon tetrachloride	ug/L	ND	5.0	11/20/25 15:05	
Chlorobenzene	ug/L	ND	5.0	11/20/25 15:05	
Chloroethane	ug/L	ND	5.0	11/20/25 15:05	
Chloroform	ug/L	ND	5.0	11/20/25 15:05	
Chloromethane	ug/L	ND	5.0	11/20/25 15:05	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Dibromochloromethane	ug/L	ND	5.0	11/20/25 15:05	
Dichlorodifluoromethane	ug/L	ND	5.0	11/20/25 15:05	
Ethylbenzene	ug/L	ND	5.0	11/20/25 15:05	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/20/25 15:05	
m&p-Xylene	ug/L	ND	10.0	11/20/25 15:05	
Methyl acetate	ug/L	ND	10.0	11/20/25 15:05	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/20/25 15:05	
Methylene Chloride	ug/L	ND	5.0	11/20/25 15:05	
o-Xylene	ug/L	ND	5.0	11/20/25 15:05	
Styrene	ug/L	ND	5.0	11/20/25 15:05	
Tetrachloroethene	ug/L	ND	5.0	11/20/25 15:05	
Toluene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Trichloroethene	ug/L	ND	5.0	11/20/25 15:05	
Trichlorofluoromethane	ug/L	ND	5.0	11/20/25 15:05	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	2.0	11/20/25 15:05	
4-Bromofluorobenzene (S)	%.	98	78-121	11/20/25 15:05	
Dibromofluoromethane (S)	%.	94	74-128	11/20/25 15:05	
Toluene-d8 (S)	%.	99	76-124	11/20/25 15:05	

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloropropane	ug/L	ND	5.0	11/21/25 11:59	
2-Butanone (MEK)	ug/L	ND	10.0	11/21/25 11:59	
2-Hexanone	ug/L	ND	10.0	11/21/25 11:59	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/21/25 11:59	
Acetone	ug/L	ND	10.0	11/21/25 11:59	
Benzene	ug/L	ND	5.0	11/21/25 11:59	
Bromodichloromethane	ug/L	ND	5.0	11/21/25 11:59	
Bromoform	ug/L	ND	5.0	11/21/25 11:59	
Bromomethane	ug/L	ND	5.0	11/21/25 11:59	
Carbon disulfide	ug/L	ND	5.0	11/21/25 11:59	
Carbon tetrachloride	ug/L	ND	5.0	11/21/25 11:59	
Chlorobenzene	ug/L	ND	5.0	11/21/25 11:59	
Chloroethane	ug/L	ND	5.0	11/21/25 11:59	
Chloroform	ug/L	ND	5.0	11/21/25 11:59	
Chloromethane	ug/L	ND	5.0	11/21/25 11:59	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Dibromochloromethane	ug/L	ND	5.0	11/21/25 11:59	
Dichlorodifluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Ethylbenzene	ug/L	ND	5.0	11/21/25 11:59	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/21/25 11:59	
m&p-Xylene	ug/L	ND	10.0	11/21/25 11:59	
Methyl acetate	ug/L	ND	10.0	11/21/25 11:59	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/21/25 11:59	
Methylene Chloride	ug/L	ND	5.0	11/21/25 11:59	
o-Xylene	ug/L	ND	5.0	11/21/25 11:59	
Styrene	ug/L	ND	5.0	11/21/25 11:59	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	5.0	11/21/25 11:59	
Toluene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Trichloroethene	ug/L	ND	5.0	11/21/25 11:59	
Trichlorofluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Vinyl chloride	ug/L	ND	2.0	11/21/25 11:59	
4-Bromofluorobenzene (S)	%.	101	78-121	11/21/25 11:59	
Dibromofluoromethane (S)	%.	105	74-128	11/21/25 11:59	
Toluene-d8 (S)	%.	103	76-124	11/21/25 11:59	

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	48.9	98	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	44.2	88	65-129	
1,1,2-Trichloroethane	ug/L	50	47.3	95	75-121	
1,1-Dichloroethane	ug/L	50	44.8	90	71-127	
1,1-Dichloroethene	ug/L	50	47.9	96	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	75-125	
1,2-Dichloroethane	ug/L	50	47.4	95	65-131	
1,2-Dichloropropane	ug/L	50	45.7	91	72-125	
2-Butanone (MEK)	ug/L	50	40.8	82	34-170	
2-Hexanone	ug/L	50	45.2	90	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.9	90	58-141	
Acetone	ug/L	50	38.3	77	16-192	
Benzene	ug/L	50	44.8	90	74-132	
Bromodichloromethane	ug/L	50	49.9	100	73-117	
Bromoform	ug/L	50	50.8	102	58-132	
Bromomethane	ug/L	50	45.1	90	47-157	
Carbon disulfide	ug/L	50	45.0	90	52-145	
Carbon tetrachloride	ug/L	50	49.6	99	68-129	
Chlorobenzene	ug/L	50	50.6	101	79-121	
Chloroethane	ug/L	50	44.6	89	34-160	
Chloroform	ug/L	50	46.0	92	70-120	
Chloromethane	ug/L	50	39.8	80	44-142	
cis-1,2-Dichloroethene	ug/L	50	46.1	92	71-124	
cis-1,3-Dichloropropene	ug/L	50	48.3	97	77-121	
Dibromochloromethane	ug/L	50	49.5	99	67-122	
Dichlorodifluoromethane	ug/L	50	42.8	86	28-148	
Ethylbenzene	ug/L	50	50.6	101	79-116	
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	100	100	78-119	
Methyl acetate	ug/L	50	43.3	87	47-155	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	44.5	89	58-135	
Methylene Chloride	ug/L	50	44.6	89	49-145	
o-Xylene	ug/L	50	50.8	102	77-121	
Styrene	ug/L	50	50.0	100	81-123	
Tetrachloroethene	ug/L	50	52.4	105	62-138	
Toluene	ug/L	50	48.8	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.3	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	49.0	98	77-121	
Trichloroethene	ug/L	50	48.2	96	77-117	
Trichlorofluoromethane	ug/L	50	49.2	98	45-164	
Vinyl chloride	ug/L	50	44.9	90	48-130	
4-Bromofluorobenzene (S)	%.			102	78-121	
Dibromofluoromethane (S)	%.			93	74-128	
Toluene-d8 (S)	%.			99	76-124	

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.3	99	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	57.2	114	65-129	
1,1,2-Trichloroethane	ug/L	50	52.3	105	75-121	
1,1-Dichloroethane	ug/L	50	47.9	96	71-127	
1,1-Dichloroethene	ug/L	50	46.5	93	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.7	105	75-125	
1,2-Dichloroethane	ug/L	50	48.9	98	65-131	
1,2-Dichloropropane	ug/L	50	50.4	101	72-125	
2-Butanone (MEK)	ug/L	50	52.1	104	34-170	
2-Hexanone	ug/L	50	58.5	117	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	52.2	104	58-141	
Acetone	ug/L	50	43.1	86	16-192	
Benzene	ug/L	50	46.5	93	74-132	
Bromodichloromethane	ug/L	50	52.4	105	73-117	
Bromoform	ug/L	50	41.7	83	58-132	
Bromomethane	ug/L	50	57.6	115	47-157	
Carbon disulfide	ug/L	50	46.5	93	52-145	
Carbon tetrachloride	ug/L	50	47.8	96	68-129	
Chlorobenzene	ug/L	50	48.2	96	79-121	
Chloroethane	ug/L	50	47.7	95	34-160	
Chloroform	ug/L	50	47.2	94	70-120	
Chloromethane	ug/L	50	36.9	74	44-142	
cis-1,2-Dichloroethene	ug/L	50	45.6	91	71-124	
cis-1,3-Dichloropropene	ug/L	50	52.3	105	77-121	
Dibromochloromethane	ug/L	50	48.3	97	67-122	
Dichlorodifluoromethane	ug/L	50	46.9	94	28-148	
Ethylbenzene	ug/L	50	48.6	97	79-116	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	97.4	97	78-119	
Methyl acetate	ug/L	50	53.6	107	47-155	
Methyl-tert-butyl ether	ug/L	50	48.7	97	58-135	
Methylene Chloride	ug/L	50	45.5	91	49-145	
o-Xylene	ug/L	50	48.0	96	77-121	
Styrene	ug/L	50	48.0	96	81-123	
Tetrachloroethene	ug/L	50	48.2	96	62-138	
Toluene	ug/L	50	48.9	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.7	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	54.1	108	77-121	
Trichloroethene	ug/L	50	47.6	95	77-117	
Trichlorofluoromethane	ug/L	50	62.6	125	45-164	
Vinyl chloride	ug/L	50	54.8	110	48-130	
4-Bromofluorobenzene (S)	%.			99	78-121	
Dibromofluoromethane (S)	%.			99	74-128	
Toluene-d8 (S)	%.			101	76-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	45.9	45.5	92	91	73-141	1	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.7	41.8	85	84	48-148	2	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	46.2	45.7	92	91	46-154	1	20	
1,1-Dichloroethane	ug/L	ND	50	50	40.8	40.5	82	81	63-145	1	20	
1,1-Dichloroethene	ug/L	ND	50	50	40.4	42.0	81	84	28-176	4	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.7	46.8	95	94	69-134	2	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.3	45.1	93	90	51-147	2	20	
1,2-Dichloropropane	ug/L	ND	50	50	43.2	42.8	86	86	64-140	1	20	
2-Butanone (MEK)	ug/L	ND	50	50	26.6	25.4	53	51	10-200	5	20	
2-Hexanone	ug/L	ND	50	50	36.8	35.1	74	70	40-157	5	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	42.0	41.5	84	83	36-165	1	20	
Acetone	ug/L	ND	50	50	16.1	17.3	32	35	10-200	7	20	
Benzene	ug/L	ND	50	50	42.8	42.7	86	85	29-186	0	20	
Bromodichloromethane	ug/L	ND	50	50	49.2	48.6	98	97	58-139	1	20	
Bromoform	ug/L	ND	50	50	50.7	49.7	101	99	57-135	2	20	
Bromomethane	ug/L	ND	50	50	46.5	52.4	93	105	42-168	12	20	
Carbon disulfide	ug/L	ND	50	50	37.0	39.1	74	78	44-170	6	20	
Carbon tetrachloride	ug/L	ND	50	50	48.2	48.0	96	96	45-162	0	20	
Chlorobenzene	ug/L	ND	50	50	47.7	47.8	95	96	71-135	0	20	
Chloroethane	ug/L	ND	50	50	44.1	47.7	88	95	32-175	8	20	
Chloroform	ug/L	ND	50	50	44.2	43.9	88	88	61-136	1	20	
Chloromethane	ug/L	ND	50	50	41.9	45.8	84	92	38-154	9	20	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
cis-1,2-Dichloroethene	ug/L	ND	50	50	43.2	43.9	86	88	44-160	2	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	45.8	45.3	92	91	47-153	1	20	
Dibromochloromethane	ug/L	ND	50	50	49.9	49.3	100	99	64-130	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	56.5	62.6	113	125	22-160	10	20	
Ethylbenzene	ug/L	ND	50	50	48.4	47.5	97	95	51-153	2	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	43.5	43.7	87	87	68-145	0	20	
m&p-Xylene	ug/L	ND	100	100	94.8	96.1	95	96	30-173	1	20	
Methyl acetate	ug/L	ND	50	50	42.8	37.4	86	75	20-173	13	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	41.0	40.1	82	80	36-160	2	20	
Methylene Chloride	ug/L	ND	50	50	40.4	40.3	81	81	56-140	0	20	
o-Xylene	ug/L	ND	50	50	48.3	48.7	97	97	10-197	1	20	
Styrene	ug/L	ND	50	50	46.3	47.1	93	94	37-163	2	20	
Tetrachloroethene	ug/L	ND	50	50	47.6	48.6	95	97	18-193	2	20	
Toluene	ug/L	ND	50	50	45.6	45.8	91	92	33-175	0	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	40.7	40.9	81	82	63-140	0	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	45.9	46.4	92	93	47-153	1	20	
Trichloroethene	ug/L	ND	50	50	44.6	44.2	89	88	24-181	1	20	
Trichlorofluoromethane	ug/L	ND	50	50	45.9	50.7	92	101	37-182	10	20	
Vinyl chloride	ug/L	ND	50	50	44.1	46.8	88	94	19-169	6	20	
4-Bromofluorobenzene (S)	%.						103	102	78-121			
Dibromofluoromethane (S)	%.						93	92	74-128			
Toluene-d8 (S)	%.						99	99	76-124			

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4320 Midmost Dr
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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 523097
QC Batch Method: EPA 3510
Analysis Method: EPA 8270E
Analysis Description: 8270E Water MSSV Low Volume
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 20373469001

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,2-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,3-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,4-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2,4,5-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4,6-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dimethylphenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dinitrophenol	ug/L	ND	50.0	11/26/25 13:40	
2,4-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2,6-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2-Chloronaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Chlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Methylphenol(o-Cresol)	ug/L	ND	5.0	11/26/25 13:40	
2-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
2-Nitrophenol	ug/L	ND	5.0	11/26/25 13:40	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	5.0	11/26/25 13:40	
3,3'-Dichlorobenzidine	ug/L	ND	5.0	11/26/25 13:40	
3-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4,6-Dinitro-2-methylphenol	ug/L	ND	10.0	11/26/25 13:40	
4-Bromophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Chloro-3-methylphenol	ug/L	ND	5.0	11/26/25 13:40	
4-Chloroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Nitrophenol	ug/L	ND	10.0	11/26/25 13:40	
Acenaphthene	ug/L	ND	5.0	11/26/25 13:40	
Acenaphthylene	ug/L	ND	5.0	11/26/25 13:40	
Aniline	ug/L	ND	5.0	11/26/25 13:40	
Anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzidine	ug/L	ND	50.0	11/26/25 13:40	
Benzo(a)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(a)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(b)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(g,h,i)perylene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(k)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzoic acid	ug/L	ND	50.0	11/26/25 13:40	
Benzyl alcohol	ug/L	ND	5.0	11/26/25 13:40	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethoxy)methane	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	11/26/25 13:40	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	11/26/25 13:40	
Butylbenzylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Carbazole	ug/L	ND	5.0	11/26/25 13:40	
Chrysene	ug/L	ND	5.0	11/26/25 13:40	
Di-n-butylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Di-n-octylphthalate	ug/L	ND	10.0	11/26/25 13:40	CH
Dibenz(a,h)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Dibenzofuran	ug/L	ND	5.0	11/26/25 13:40	
Diethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Dimethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Fluorene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorocyclopentadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloroethane	ug/L	ND	5.0	11/26/25 13:40	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Isophorone	ug/L	ND	5.0	11/26/25 13:40	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodimethylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodiphenylamine	ug/L	ND	5.0	11/26/25 13:40	
Naphthalene	ug/L	ND	5.0	11/26/25 13:40	
Nitrobenzene	ug/L	ND	5.0	11/26/25 13:40	
Pentachlorophenol	ug/L	ND	5.0	11/26/25 13:40	
Phenanthrene	ug/L	ND	5.0	11/26/25 13:40	
Phenol	ug/L	ND	5.0	11/26/25 13:40	
Pyrene	ug/L	ND	5.0	11/26/25 13:40	
Pyridine	ug/L	ND	10.0	11/26/25 13:40	
2,4,6-Tribromophenol (S)	%	64	32-141	11/26/25 13:40	
2-Fluorobiphenyl (S)	%	39	15-130	11/26/25 13:40	
2-Fluorophenol (S)	%	26	10-130	11/26/25 13:40	
Nitrobenzene-d5 (S)	%	55	13-130	11/26/25 13:40	
Phenol-d6 (S)	%	15	10-130	11/26/25 13:40	
Terphenyl-d14 (S)	%	83	50-133	11/26/25 13:40	

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	24.7	49	37-130	
1,2-Dichlorobenzene	ug/L	50	25.7	51	39-130	
1,3-Dichlorobenzene	ug/L	50	24.4	49	34-130	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	24.0	48	36-130	
1-Methylnaphthalene	ug/L	50	24.3	49	45-130	
2,4,5-Trichlorophenol	ug/L	50	34.3	69	55-130	
2,4,6-Trichlorophenol	ug/L	50	34.4	69	59-130	
2,4-Dichlorophenol	ug/L	50	29.7	59	55-130	
2,4-Dimethylphenol	ug/L	50	32.5	65	47-130	
2,4-Dinitrophenol	ug/L	50	20.8J	42	10-131	
2,4-Dinitrotoluene	ug/L	50	37.6	75	69-130	
2,6-Dinitrotoluene	ug/L	50	38.2	76	61-130	
2-Chloronaphthalene	ug/L	50	27.6	55	48-130	
2-Chlorophenol	ug/L	50	27.7	55	52-130	
2-Methylnaphthalene	ug/L	50	23.0	46	41-130	
2-Methylphenol(o-Cresol)	ug/L	50	22.2	44	47-130	L2
2-Nitroaniline	ug/L	50	38.4	77	62-143	
2-Nitrophenol	ug/L	50	28.7	57	53-130	
3&4-Methylphenol(m&p Cresol)	ug/L	50	22.9	46	42-130	
3,3'-Dichlorobenzidine	ug/L	50	26.4	53	26-130	
3-Nitroaniline	ug/L	50	39.9	80	58-148	
4,6-Dinitro-2-methylphenol	ug/L	50	27.9	56	37-130	
4-Bromophenylphenyl ether	ug/L	50	32.2	64	55-130	
4-Chloro-3-methylphenol	ug/L	50	31.5	63	52-130	
4-Chloroaniline	ug/L	50	34.0	68	44-149	
4-Chlorophenylphenyl ether	ug/L	50	36.8	74	57-130	
4-Nitroaniline	ug/L	50	39.3	79	42-153	
4-Nitrophenol	ug/L	50	10.5	21	11-130	
Acenaphthene	ug/L	50	30.5	61	49-130	
Acenaphthylene	ug/L	50	32.0	64	53-130	
Aniline	ug/L	50	24.0	48	10-185	
Anthracene	ug/L	50	40.0	80	66-131	
Benzidine	ug/L		ND			
Benzo(a)anthracene	ug/L	50	41.2	82	69-130	
Benzo(a)pyrene	ug/L	50	40.5	81	68-130	
Benzo(b)fluoranthene	ug/L	50	42.2	84	68-130	
Benzo(g,h,i)perylene	ug/L	50	42.1	84	65-130	
Benzo(k)fluoranthene	ug/L	50	42.2	84	70-130	
Benzoic acid	ug/L	50	ND	20	14-130	
Benzyl alcohol	ug/L	50	25.4	51	46-130	
Biphenyl (Diphenyl)	ug/L		ND			
bis(2-Chloroethoxy)methane	ug/L	50	32.1	64	55-130	
bis(2-Chloroethyl) ether	ug/L	50	31.5	63	54-130	
bis(2-Ethylhexyl)phthalate	ug/L	50	40.5	81	66-130	
Butylbenzylphthalate	ug/L	50	41.4	83	66-130	
Carbazole	ug/L	50	42.7	85	63-156	
Chrysene	ug/L	50	43.5	87	70-130	
Di-n-butylphthalate	ug/L	50	41.3	83	64-130	
Di-n-octylphthalate	ug/L	50	37.7	75	53-130	CH
Dibenz(a,h)anthracene	ug/L	50	36.5	73	58-130	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibenzofuran	ug/L	50	34.4	69	58-130	
Diethylphthalate	ug/L	50	42.8	86	70-130	
Dimethylphthalate	ug/L	50	40.9	82	67-130	
Fluoranthene	ug/L	50	40.9	82	65-131	
Fluorene	ug/L	50	37.0	74	58-130	
Hexachloro-1,3-butadiene	ug/L	50	21.5	43	26-130	
Hexachlorobenzene	ug/L	50	34.3	69	61-130	
Hexachlorocyclopentadiene	ug/L	50	16.3	33	15-130	
Hexachloroethane	ug/L	50	22.6	45	29-130	
Indeno(1,2,3-cd)pyrene	ug/L	50	31.2	62	48-130	
Isophorone	ug/L	50	32.1	64	55-130	
N-Nitroso-di-n-propylamine	ug/L	50	30.2	60	53-130	
N-Nitrosodimethylamine	ug/L	50	15.9	32	32-130	
N-Nitrosodiphenylamine	ug/L	50	34.3	69	63-130	
Naphthalene	ug/L	50	26.6	53	49-130	
Nitrobenzene	ug/L	50	34.5	69	63-130	
Pentachlorophenol	ug/L	50	32.5	65	53-130	
Phenanthrene	ug/L	50	39.9	80	63-139	
Phenol	ug/L	50	11.0	22	23-130	L2
Pyrene	ug/L	50	44.9	90	70-130	
Pyridine	ug/L	50	9.4J	19	10-130	
2,4,6-Tribromophenol (S)	%			77	32-141	
2-Fluorobiphenyl (S)	%			53	15-130	
2-Fluorophenol (S)	%			30	10-130	
Nitrobenzene-d5 (S)	%			62	13-130	
Phenol-d6 (S)	%			20	10-130	
Terphenyl-d14 (S)	%			86	50-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/L	<0.0024 mg/L	50	50	28.8	27.8	58	56	26-130	4	36	
1,2-Dichlorobenzene	ug/L	<0.0020 mg/L	50	50	30.3	29.2	61	58	26-130	4	33	
1,3-Dichlorobenzene	ug/L	<0.0022 mg/L	50	50	27.0	28.0	54	56	23-130	4	40	
1,4-Dichlorobenzene	ug/L	<0.0018 mg/L	50	50	28.5	27.6	57	55	22-130	3	39	
1-Methylnaphthalene	ug/L	<0.0014 mg/L	50	50	30.2	30.2	60	60	32-130	0	22	
2,4,5-Trichlorophenol	ug/L	<0.0018 mg/L	50	50	35.4	38.5	71	77	10-131	8	50	
2,4,6-Trichlorophenol	ug/L	<0.0020 mg/L	50	50	37.7	36.6	75	73	10-130	3	50	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dichlorophenol	ug/L	<0.0015 mg/L	50	50	35.1	32.8	70	66	19-130	7	45	
2,4-Dimethylphenol	ug/L	<0.0013 mg/L	50	50	31.4	37.9	63	76	44-130	19	21	
2,4-Dinitrophenol	ug/L	<0.012 mg/L	50	50	28J	27.1J	56	54	10-200		29	
2,4-Dinitrotoluene	ug/L	<0.0012 mg/L	50	50	41.9	41.2	84	82	48-130	2	20	
2,6-Dinitrotoluene	ug/L	<0.00085 mg/L	50	50	40.4	40.2	81	80	37-130	1	21	
2-Chloronaphthalene	ug/L	<0.0012 mg/L	50	50	32.9	33.4	66	67	32-130	2	25	
2-Chlorophenol	ug/L	<0.0026 mg/L	50	50	30.5	31.0	61	62	21-130	2	38	
2-Methylnaphthalene	ug/L	<0.0015 mg/L	50	50	30.8	30.5	62	61	28-130	1	23	
2-Methylphenol(o-Cresol)	ug/L	<0.00077 mg/L	50	50	26.4	26.5	53	53	36-130	1	32	
2-Nitroaniline	ug/L	<0.0026 mg/L	50	50	43.9	46.0	88	92	11-158	5	20	
2-Nitrophenol	ug/L	<0.0015 mg/L	50	50	34.7	33.4	69	67	14-130	4	41	
3&4-Methylphenol(m&p Cresol)	ug/L	<0.0018 mg/L	50	50	25.5	26.6	51	53	20-130	4	38	
3,3'-Dichlorobenzidine	ug/L	<0.0015 mg/L	50	50	21.4	21.3	43	43	10-130	0	28	
3-Nitroaniline	ug/L	<0.0018 mg/L	50	50	40.0	41.8	80	84	17-155	4	27	
4,6-Dinitro-2-methylphenol	ug/L	<0.0012 mg/L	50	50	33.6	30.9	67	62	10-137	8	34	
4-Bromophenylphenyl ether	ug/L	<0.0018 mg/L	50	50	38.6	38.2	77	76	42-145	1	21	
4-Chloro-3-methylphenol	ug/L	<0.00094 mg/L	50	50	34.4	34.3	69	69	43-130	0	20	
4-Chloroaniline	ug/L	<0.0025 mg/L	50	50	35.5	33.8	71	68	19-154	5	22	
4-Chlorophenylphenyl ether	ug/L	<0.0020 mg/L	50	50	40.8	38.4	82	77	43-147	6	20	
4-Nitroaniline	ug/L	<0.0024 mg/L	50	50	42.5	35.0	85	70	10-159	19	36	
4-Nitrophenol	ug/L	<0.0083 mg/L	50	50	13.5	13.1	27	26	10-130	3	36	
Acenaphthene	ug/L	<0.0015 mg/L	50	50	35.8	34.9	72	70	32-132	3	21	
Acenaphthylene	ug/L	<0.0013 mg/L	50	50	38.5	37.2	77	74	37-131	3	20	
Aniline	ug/L	<0.0026 mg/L	50	50	26.8	25.4	54	51	16-149	5	28	
Anthracene	ug/L	<0.0017 mg/L	50	50	43.2	42.4	86	85	43-136	2	20	
Benzo(a)anthracene	ug/L	<0.0012 mg/L	50	50	41.9	41.5	84	83	47-130	1	20	
Benzo(a)pyrene	ug/L	<0.0013 mg/L	50	50	43.4	43.3	87	87	36-130	0	20	

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzo(b)fluoranthene	ug/L	<0.0014 mg/L	50	50	42.6	41.1	85	82	41-130	4	20	
Benzo(g,h,i)perylene	ug/L	<0.0017 mg/L	50	50	43.4	43.6	87	87	41-131	0	20	
Benzo(k)fluoranthene	ug/L	<0.0014 mg/L	50	50	43.2	43.0	86	86	45-131	0	20	
Benzoic acid	ug/L	<0.019 mg/L	50	50	ND	ND	14	16	10-130		20	
Benzyl alcohol	ug/L	<0.0032 mg/L	50	50	30.8	30.5	62	61	46-130	1	21	
bis(2-Chloroethoxy)methane	ug/L	<0.0011 mg/L	50	50	38.4	36.7	77	73	40-130	4	20	
bis(2-Chloroethyl) ether	ug/L	<0.0062 mg/L	50	50	33.8	34.6	68	69	32-134	3	20	
bis(2-Ethylhexyl)phthalate	ug/L	<0.0021 mg/L	50	50	46.4	45.1	93	90	34-130	3	20	
Butylbenzylphthalate	ug/L	<0.0037 mg/L	50	50	46.1	41.8	92	84	39-130	10	20	
Carbazole	ug/L	<0.0011 mg/L	50	50	46.5	44.6	93	89	45-154	4	20	
Chrysene	ug/L	<0.0018 mg/L	50	50	44.8	43.2	90	86	53-135	4	20	
Di-n-butylphthalate	ug/L	<0.0012 mg/L	50	50	44.7	44.6	89	89	41-130	0	20	
Di-n-octylphthalate	ug/L	<0.0046 mg/L	50	50	45.3	45.5	91	91	24-130	0	20	CH
Dibenz(a,h)anthracene	ug/L	<0.0023 mg/L	50	50	41.1	37.1	82	74	36-130	10	20	
Dibenzofuran	ug/L	<0.00093 mg/L	50	50	40.2	39.7	80	79	47-140	1	20	
Diethylphthalate	ug/L	<0.0012 mg/L	50	50	44.5	43.1	89	86	48-130	3	20	
Dimethylphthalate	ug/L	<0.0013 mg/L	50	50	41.7	40.7	83	81	44-130	2	20	
Fluoranthene	ug/L	<0.0016 mg/L	50	50	43.1	41.0	86	82	47-131	5	20	
Fluorene	ug/L	<0.0014 mg/L	50	50	41.5	40.0	83	80	43-135	4	20	
Hexachloro-1,3-butadiene	ug/L	<0.0025 mg/L	50	50	26.3	25.9	53	52	10-130	2	50	
Hexachlorobenzene	ug/L	<0.0016 mg/L	50	50	39.0	37.9	78	76	51-142	3	20	
Hexachlorocyclopentadiene	ug/L	<0.0019 mg/L	50	50	17.0	17.6	34	35	10-130	3	50	
Hexachloroethane	ug/L	<0.0015 mg/L	50	50	27.7	26.3	55	53	10-130	5	50	
Indeno(1,2,3-cd)pyrene	ug/L	<0.0018 mg/L	50	50	36.5	34.2	73	68	30-130	6	20	
Isophorone	ug/L	<0.00098 mg/L	50	50	36.3	35.4	73	71	50-130	3	20	
N-Nitroso-di-n-propylamine	ug/L	<0.00082 mg/L	50	50	36.1	34.7	72	69	35-130	4	30	
N-Nitrosodimethylamine	ug/L	<0.0015 mg/l	50	50	16.0	17.9	32	36	10-130	11	31	

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
N-Nitrosodiphenylamine	ug/L	<0.00041 mg/L	50	50	41.9	42.2	84	84	57-130	1	20	
Naphthalene	ug/L	<0.0017 mg/L	50	50	32.1	30.8	63	61	34-130	4	20	
Nitrobenzene	ug/L	<0.0016 mg/L	50	50	39.8	38.6	80	77	50-132	3	23	
Pentachlorophenol	ug/L	<0.0016 mg/L	50	50	37.1	35.7	74	71	10-137	4	45	
Phenanthrene	ug/L	<0.0011 mg/L	50	50	43.0	41.5	86	83	48-142	4	20	
Phenol	ug/L	<0.00098 mg/L	50	50	12.4	12.1	25	24	10-130	2	36	1b
Pyrene	ug/L	<0.00098 mg/L	50	50	44.3	39.3	89	79	48-134	12	20	
Pyridine	ug/L	<0.0018 mg/L	50	50	17.5	11.4	35	23	17-130	42	50	
2,4,6-Tribromophenol (S)	%						75	74	32-141			
2-Fluorobiphenyl (S)	%						61	59	15-130			
2-Fluorophenol (S)	%						31	30	10-130			
Nitrobenzene-d5 (S)	%						70	68	13-130			
Phenol-d6 (S)	%						23	23	10-130			
Terphenyl-d14 (S)	%						83	74	50-133			

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Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 376090
QC Batch Method: EPA 1664B, 2010
Analysis Method: EPA 1664B, 2010
Analysis Description: 1664 HEM, Oil and Grease
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373469001

METHOD BLANK: 1826560 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	11/24/25 12:18	

LABORATORY CONTROL SAMPLE: 1826561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	34.4	86	78-114	

MATRIX SPIKE SAMPLE: 1826562

Parameter	Units	20373385002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	33.7	80	78-114	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 1147297
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 20373469001

METHOD BLANK: 6289260 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	11/24/25 13:47	

LABORATORY CONTROL SAMPLE: 6289261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	250	234	93	90-110	

SAMPLE DUPLICATE: 6289262

Parameter	Units	35999513009 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	88.5	88.4	0	20	

SAMPLE DUPLICATE: 6289263

Parameter	Units	35999264001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	148	147	1	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 1147868
QC Batch Method: SM 2510B
Analysis Method: SM 2510B
Analysis Description: 2510B Specific Conductance
Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 20373469001

METHOD BLANK: 6292432 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance @ 25C	umhos/cm	ND	2.0	11/26/25 00:15	

LABORATORY CONTROL SAMPLE: 6292433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance @ 25C	umhos/cm	1410	1410	100	95-105	

SAMPLE DUPLICATE: 6292434

Parameter	Units	35998195010 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance @ 25C	umhos/cm	2350	2400			

SAMPLE DUPLICATE: 6292435

Parameter	Units	35998476008 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance @ 25C	umhos/cm	296	297	1	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 1147576
QC Batch Method: SM 4500-S2F
Analysis Method: SM 4500-S2F
Analysis Description: 4500S2F Sulfide
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 20373469001

METHOD BLANK: 6290584 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	11/25/25 09:32	

LABORATORY CONTROL SAMPLE & LCSD: 6290585 6290586

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	6	5.8	5.8	96	96	80-120	0	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 376100
QC Batch Method: EPA 351.2
Analysis Method: EPA 351.2
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373469001

METHOD BLANK: 1826586 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.15	11/26/25 15:08	

LABORATORY CONTROL SAMPLE: 1826587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	6.6	6.5	100	90-110	

MATRIX SPIKE SAMPLE: 1826589

Parameter	Units	20372419001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	2.5	166	242	75-125	M1

SAMPLE DUPLICATE: 1826588

Parameter	Units	20372419001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	164	2	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

QC Batch: 375770
QC Batch Method: SM 4500-NO3 F
Analysis Method: SM 4500-NO3 F
Analysis Description: SM4500NO3-F, Nitrate, Preserved
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373469001

METHOD BLANK: 1824783 Matrix: Water
Associated Lab Samples: 20373469001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.050	11/20/25 15:09	

LABORATORY CONTROL SAMPLE: 1824784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	6	5.6	93	90-110	

MATRIX SPIKE SAMPLE: 1824786

Parameter	Units	20373411001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	1	1.1	93	80-120	

SAMPLE DUPLICATE: 1824785

Parameter	Units	20373411001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	0.15	3	20	

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251-344-9106

QUALIFIERS

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

ANALYTE QUALIFIERS

1b	This sample was sub-sampled from an AG1 for a 100 mL extraction.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P1	Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

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4320 Midmost Dr
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251-344-9106

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Produced Liquids - Fairway
Pace Project No.: 20373469

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20373469001	Fairway	EPA 3510	523097	EPA 8270E	523163
20373469001	Fairway	EPA 8260B	375900		
20373469001	Fairway	EPA 1664B, 2010	376090		
20373469001	Fairway	SM 2320B	1147297		
20373469001	Fairway	SM 2510B	1147868		
20373469001	Fairway	SM 4500-S2F	1147576		
20373469001	Fairway	40CFR PART 432.2	376483		
20373469001	Fairway	EPA 351.2	376100	EPA 351.2	376361
20373469001	Fairway	SM 4500-NO3 F	375770		

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Pace® Location Requested (City/State):
Pace Analytical Mobile
4320 Midmost Dr, Mobile, AL 36609

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY - Affix Workorder# or Label Here

WO# : 20373469

20373469

ompany Name:	W&T Offshore/Aquasition II LLC	Contact/Report To:	Laurentiu Pirvu
reet Address:	6000 Deakle Road Theodore, AL 36582	Phone #:	(251)973-4627
		E-Mail:	lpirvu@wtoffshore.com
		Cc E-Mail:	
istomer Project #:			
oject Name:	Produced Liquids - Fairway	Invoice To:	Invoice Aquasition II
		Invoice E-Mail:	apinv@wtoffshore.com
te Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	380000-353248
		Quote #:	

ne Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Alabama

ta Deliverables:

] Level II [ ] Level III [ ] Level IV

] EQUIS

] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units
1			11/18/25	1330	11/18/25	1330			
2			"	"	"	"			
3			"	"	"	"			
4			"	"	"	"			
5			"	"	"	"			
6			"	"	"	"			
7			"	"	"	"			
8			"	"	"	"			
Amber Vials - 1,2,3)			"	"	"	"			

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

8260 MSV	8270 w/PAH	CO2	HEM, Oil and Grease	Hydrogen Sulfide	TKN, NO2+NO3, TN

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: **Mary Kathryn Brenner**

AcctNum / Client ID:

Table #:

Profile / Template: **17643**

Prelog / Bottle Ord. ID: **EZ 3322748**

Sample Comment

Preservation non-conformance identified for sample.

ditional Instructions from Pace®:

Collected By:
(Printed Name) Troy Hebert Hotthephauser
Signature: Troy Hebert

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
0	AUOTHER	0	15.2	16.2	

quished by/Company: (Signature) WT OFFSHORE	Date/Time: 11-18-25 3:45PM	Received by/Company: (Signature)	Date/Time:	Tracking Number:
quished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 11/18/25 1546	Delivered by: [ ] In-Person [ ] Courier
quished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
quished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

mitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

WO#: 20373469

PM: MKB Due Date: 11/26/25

CLIENT: MO-WT

Pace Analytical

Sample Condition Upon Receipt

4320 Midmost Dr. Mobile, AL 36609

Project #:

Courier: ☐ Pace ☑ Client ☐ FedEx ☐ UPS ☐ Other Tracking # _____

Custody Seal on Cooler/Box Present: [see COC] Custody Seals intact: ☐Yes ☐No

Thermometer Used: ☐ Therm Fisher IR 001 ☑ Other: MOTM21

Type of Ice: (Wet) Blue None

Samples on Ice: [see COC]

Cooler Temperature: [see COC]

Date and Initials of person examining contents: GA 11/18/25

Temp must be measured from temperature blank when present

			Comments:
Temperature Blank Present:	☐Yes	☑No ☐N/A	1
Chain of Custody Present:	☑Yes	☐No ☐N/A	2
Chain of Custody Complete:	☑Yes	☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes	☐No ☐N/A	4
Sampler Name on COC:	☑Yes	☐No ☐N/A	5
Short Hold Time Analyses (<72 hr):	☐Yes	☑No ☐N/A	6
Rush Turn Around Requested:	☐Yes	☑No ☐N/A	7
Samples Arrived within Hold Time:	☑Yes	☐No ☐N/A	8
Sufficient Volume:	☑Yes	☐No ☐N/A	9
Correct Containers Used:	☑Yes	☐No ☐N/A	10
Filtered vol. Rec. for Diss. tests	☐Yes	☐No ☑N/A	11
Sample Labels match COC:	☑Yes	☐No ☐N/A	12
All containers received within manufacturer's precautionary and/or expiration dates:	☑Yes	☐No ☐N/A	13
All containers needing chemical preservation have been checked (except VOA, micro, & O&G):	☐Yes	☐No ☑N/A	14
All containers preservation checked found to be in compliance with EPA recommendation:	☐Yes	☐No ☑N/A	15 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	☐Yes	☑No ☐N/A	16
Trip Blank Present:	☐Yes	☑No	17

Client Notification/Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Client is aware samples out of temp

ANALYSIS OF PRODUCED LIQUIDS

LOWER MOBILE BAY -
MARY ANN FIELD

Marvin Rogers

From: Leigh Blake
Sent: Wednesday, January 7, 2026 10:53 AM
To: Marvin Rogers
Subject: Fwd: W&T Produced Liquids Sampling Request
Attachments: image002.jpg; image001.png; Bon Secour 20373467_frc.pdf; Fairway 20373469_frc.pdf; Mary Ann 20373461_frc.pdf; N Central Gulf 20373460_frc.pdf; Northwest Gulf 20373470 _frc.pdf

Begin forwarded message:

From: Deepu Dethan <ddethan@wtoffshore.com>
Date: December 2, 2025 at 3:48:45 PM CST
To: Leigh Blake <LBlake@ogb.state.al.us>
Cc: Eric Harbison <eharbison@wtoffshore.com>, "John C. Poole" <jpoole@wtoffshore.com>, Kendra Sullivan <ksullivan@wtoffshore.com>
Subject: W&T Produced Liquids Sampling Request

Hi Leigh:

Please find attached the lab results for the produced water samples collected. The lab had the following issues with the samples and was unable to run the analysis

- The Mary Ann, Bon Secour, and Northwest G samples cannot be run for pH and conductivity due to the sample's matrix. They have an excessive smell of gasoline which can damage the probes for these analysis.
- Also for all locations due to the alkalinity of the sample they were unable to run CO2.

Please let us know if how you would like to proceed.

Thanks
Deepu

Deepu Dethan
Environmental Manager
(251) 802-0204 (Direct)
ddethan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5778

From: Leigh Blake <LBlake@ogb.state.al.us>
Sent: Tuesday, October 14, 2025 2:20 PM
To: Deepu Dethan <ddethan@wtoffshore.com>; Kendra Sullivan <ksullivan@wtoffshore.com>; Eric Harbison <eharbison@wtoffshore.com>
Cc: Clayton Campbell <CCampbell@ogb.state.al.us>; Butch Gregory <bgregory@ogb.state.al.us>; Marvin Rogers <mrogers@ogb.state.al.us>
Subject: W&T Produced Liquids Sampling Request

Good afternoon,

AOGB is requesting analysis on the produced liquids leaving each of the following fields at the state separator: Norwest Gulf, North Central Gulf, Bon Secour Bay, Mary Ann – Lower Mobile Bay, and Fairway. A commingled analysis BEFORE the OTF inlet separator is also being requested. The following parameters are requested to be analyzed per EPA methods and submitted to AOGB: H2S, CO2, N2, VOCs and SVOCs (including PAHs). Additionally, we would like the oil/water ratio we previously discussed. Please provide this information by December 1, 2025.

Thank you,

Leigh Blake, P.E.
Manager, South Alabama Field Operations
Alabama Oil and Gas Board
(251) 626-8214 (Office)
(251) 525-3324 (Cell)

From: Deepu Dethan <ddethan@wtoffshore.com>
Sent: Tuesday, October 7, 2025 1:39 PM
To: Leigh Blake <LBlake@ogb.state.al.us>
Subject: My Contact information

Deepu Dethan
Environmental Manager
(251) 802-0204 (Direct)
ddethan@wtoffshore.com | www.wtoffshore.com
5718 Westheimer Rd, Suite 700 Houston, TX 77057-5778

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Marvin Rogers

To: ddethan@wtoffshore.com
Cc: Nick Tew; Rebecca Pritchett; ksullivan@wtoffshore.com; Kirk McQuillan; Butch Gregory; Elbert Patterson; Leigh Blake
Subject: W&T Produced liquids line; sampling; analysis

Mr. Dethan,
Ms. Leigh Blake and the Board's South Alabama field office received your email dated December 2, 2025, about the contents of the W&T's produced liquids line. This is to remind you and W&T Offshore that your company's analysis of the contents of the produced line is due to be included in a response to Dr. Tew's letter of August 27, 2025. We understand from your email and the attachments that there are numerous details in preparing the analysis. We request that in your written response to Dr. Tew's letter that you prepare a written summary of the contents of the produced liquids line. You may wish to review Dr. Tew's letter, particularly the section entitled *Recent leaks in produced liquids pipeline.*

Marvin Rogers

Marvin Rogers
General Counsel
Assistant Attorney General
Alabama Oil and Gas Board
205-247-3680 office
205-394-3185 cell

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

August 27, 2025

Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

RE: Deficiencies in Offshore Operations

Dear Mr. Williford:

The Board's staff has determined that W&T Offshore has various deficiencies in offshore operations. We trust you will address them in an expeditious manner.

Bottom plugs in temporarily abandoned wells—We note that you have approximately 13 wells in temporarily abandoned status. Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* requires a bottom plug on all temporarily abandoned wells. You should submit a schedule for installing these bottom plugs.

Parted casing in State Lease 615 #1 Well—As you are aware, a well with parted tubing cannot be utilized until the well is repaired. Please submit a schedule for repairing the well (or plugging the well).

Unsafe platform; State Lease 537, Tract 112 #4 Well—You should immediately rectify the unsafe platform.

Recent leaks in produced liquids pipeline—Leigh Blake, Manager of South Alabama Field Operations, has noted that W&T has had five leaks in a produced liquids pipeline since November 2024. Such leaks are required to be reported on Form OGB-27, *Notification of Fire, Spill, Leak, or Blowout*. A form has not been filed for all five leaks, and the forms are missing accurate and complete information. Furthermore, on some of the forms, the determination of the estimated volume of the leak has been omitted.

Please determine the amount of the liquid that leaked from the pipeline and obtain an analysis of the contents of the produced liquids line. We assume that the produced liquids transported through the line include saltwater, corrosion inhibitor, scale inhibitor, gas condensate, and diesel fuel as well as traces of other elements.

Recertifications of structural integrity—Rule 400-2-6-.09 (4) of the *State Oil and Gas Board Administrative Code* requires an offshore operator to recertify the structural integrity of offshore platforms every five years. W&T is overdue in submitting these recertifications.

Please address these deficiencies and supply the information requested.

Thank you for your cooperation.

Sincerely yours,

Berry H. (Nick) Tew, Jr.
State Geologist and Oil & Gas Supervisor

CC:

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

JSt

4320 Midmost Dr
Mobile, AL 36609
251-344-9106

December 02, 2025

Laurentiu Pirvu
W&T Offshore
6000 Deakle Road
Theodore, AL 36582

RE: Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Dear Laurentiu Pirvu:

Enclosed are the analytical results for sample(s) received by the laboratory on November 18, 2025. The results relate only to the samples included in this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - New Orleans
- Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MK Brenner

Mary Kathryn Brenner
marykathryn.brenner@pacelabs.com
251-344-9106
Project Manager

Enclosures

cc: Deepu Dethan, W&T Offshore
Rocky Folse
Doris Leach, W&T Offshore/Aquasition II LLC

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

CERTIFICATIONS

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Pace Analytical Services New Orleans
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 2000662024-10
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Texas Commission on Env. Quality (NELAC): T104704405-23-18
U.S. Dept. of Agriculture Foreign Soil Import: 525-23-117-89728

Pace Analytical Services Ormond Beach
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
California Certification# 3096
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
DoD-ANAB #:ADE-3199
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Utah FL NELAC Reciprocity
Utah
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida DOH Certification # E87948
Illinois EPA Certification # 200050
ISO/IEC 17025 (A2LA) Certification # 6154.01
Kentucky UST DEP Certification # 123059
Louisiana DEQ Certification # 04168
Minnesota DOH Certification # 055-999-334
New York DOH Certification # 12064
North Dakota DEQ Certification # R-150
ISO/IEC 17025 (A2LA) Certification # 6154.01
South Carolina DES Certification # 83006001
Texas TCEQ Certification # T104704529
USDA APHIS Foreign Soil Permit # 525-24-3-36355
U.S. Fish & Wildlife Service Permit # 51774A
Virginia VELAP Certification # 460263
Wisconsin DATCP Certification # 444
Wisconsin DNR Certification # 405132750

REPORT OF LABORATORY ANALYSIS

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

SAMPLE SUMMARY

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20373461001	**Mary Ann Lower Mob Bay**	Water	11/18/25 08:32	11/18/25 15:45

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20373461001	**Mary Ann Lower Mob Bay**	EPA 8270E	TPO	77	PASI-G
		EPA 8260B	JRP	44	PASI-N
		EPA 1664B, 2010	TMO	1	PASI-N
		SM 2320B	JH2	1	PASI-O
		SM 4500-H+B	SWB	1	PASI-O
		SM 4500-S2F	JJB	1	PASI-O
		40CFR PART 432.2	TAE	1	PASI-N
		EPA 351.2	TAE	1	PASI-N
		SM 4500-NO3 F	JLH	1	PASI-N

PASI-G = Pace Analytical Services - Green Bay
PASI-N = Pace Analytical Services - New Orleans
PASI-O = Pace Analytical Services - Ormond Beach

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Sample: Mary Ann Lower Mob Bay **Lab ID: 20373461001** Collected: 11/18/25 08:32 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Phenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	108-95-2	D3,L2
bis(2-Chloroethyl) ether	ND	ug/L	4000	40	11/25/25 07:02	11/26/25 19:05	111-44-4	
2-Chlorophenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	106-46-7	
Benzyl alcohol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	100-51-6	
1,2-Dichlorobenzene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	95-50-1	
2-Methylphenol(o-Cresol)	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	95-48-7	L2
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05		
N-Nitroso-di-n-propylamine	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	621-64-7	
Hexachloroethane	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	67-72-1	
Nitrobenzene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	98-95-3	
Isophorone	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	78-59-1	
2-Nitrophenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	88-75-5	
2,4-Dimethylphenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	105-67-9	
Benzoic acid	ND	ug/L	20000	40	11/25/25 07:02	11/26/25 19:05	65-85-0	
bis(2-Chloroethoxy)methane	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	111-91-1	
2,4-Dichlorophenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	120-82-1	
Naphthalene	**21000**	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	91-20-3	
4-Chloroaniline	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	59-50-7	
2-Methylnaphthalene	**6690**	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	91-57-6	
Hexachlorocyclopentadiene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	77-47-4	
2,4,6-Trichlorophenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	95-95-4	
2-Chloronaphthalene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	91-58-7	
2-Nitroaniline	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	88-74-4	
Dimethylphthalate	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	131-11-3	
Acenaphthylene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	606-20-2	
3-Nitroaniline	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	99-09-2	
Acenaphthene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	83-32-9	
2,4-Dinitrophenol	ND	ug/L	20000	40	11/25/25 07:02	11/26/25 19:05	51-28-5	
4-Nitrophenol	ND	ug/L	4000	40	11/25/25 07:02	11/26/25 19:05	100-02-7	
Dibenzofuran	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	121-14-2	
Diethylphthalate	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	7005-72-3	
Fluorene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	86-73-7	
4-Nitroaniline	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	4000	40	11/25/25 07:02	11/26/25 19:05	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	101-55-3	
Hexachlorobenzene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	118-74-1	

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Sample: Mary Ann Lower Mob Bay **Lab ID: 20373461001** Collected: 11/18/25 08:32 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510							
	Pace Analytical Services - Green Bay							
Pentachlorophenol	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	87-86-5	
Phenanthrene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	85-01-8	
Anthracene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	120-12-7	
Di-n-butylphthalate	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	84-74-2	
Fluoranthene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	206-44-0	
Pyrene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	129-00-0	
Butylbenzylphthalate	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	91-94-1	
Benzo(a)anthracene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	56-55-3	
Chrysene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	117-81-7	
Di-n-octylphthalate	ND	ug/L	4000	40	11/25/25 07:02	11/26/25 19:05	117-84-0	CH
Benzo(b)fluoranthene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	207-08-9	
Benzo(a)pyrene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	53-70-3	
Benzo(g,h,i)perylene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	191-24-2	
Pyridine	ND	ug/L	4000	40	11/25/25 07:02	11/26/25 19:05	110-86-1	
N-Nitrosodimethylamine	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	62-75-9	
Carbazole	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	86-74-8	
1-Methylnaphthalene	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	90-12-0	
Benzidine	ND	ug/L	20000	40	11/25/25 07:02	11/26/25 19:05	92-87-5	
Biphenyl (Diphenyl)	**4160**	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	92-52-4	
Aniline	ND	ug/L	2000	40	11/25/25 07:02	11/26/25 19:05	62-53-3	
Surrogates								
Nitrobenzene-d5 (S)	47	%	13-130	40	11/25/25 07:02	11/26/25 19:05	4165-60-0	
2-Fluorobiphenyl (S)	61	%	15-130	40	11/25/25 07:02	11/26/25 19:05	321-60-8	
Terphenyl-d14 (S)	60	%	50-133	40	11/25/25 07:02	11/26/25 19:05	1718-51-0	
Phenol-d6 (S)	17	%	10-130	40	11/25/25 07:02	11/26/25 19:05	13127-88-3	
2-Fluorophenol (S)	0	%	10-130	40	11/25/25 07:02	11/26/25 19:05	367-12-4	S4
2,4,6-Tribromophenol (S)	41	%	32-141	40	11/25/25 07:02	11/26/25 19:05	118-79-6	
8260 MSV	Analytical Method: EPA 8260B							
	Pace Analytical Services - New Orleans							
Acetone	ND	ug/L	100000	10000		11/21/25 13:32	67-64-1	
Benzene	**350000**	ug/L	50000	10000		11/21/25 13:32	71-43-2	D4
Bromodichloromethane	ND	ug/L	50000	10000		11/21/25 13:32	75-27-4	
Bromoform	ND	ug/L	50000	10000		11/21/25 13:32	75-25-2	
Bromomethane	ND	ug/L	50000	10000		11/21/25 13:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	100000	10000		11/21/25 13:32	78-93-3	
Carbon disulfide	ND	ug/L	50000	10000		11/21/25 13:32	75-15-0	
Carbon tetrachloride	ND	ug/L	50000	10000		11/21/25 13:32	56-23-5	
Chlorobenzene	ND	ug/L	50000	10000		11/21/25 13:32	108-90-7	
Chloroethane	ND	ug/L	50000	10000		11/21/25 13:32	75-00-3	
Chloroform	ND	ug/L	50000	10000		11/21/25 13:32	67-66-3	

REPORT OF LABORATORY ANALYSIS

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Sample: Mary Ann Lower Mob Bay **Lab ID: 20373461001** Collected: 11/18/25 08:32 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Chloromethane	ND	ug/L	50000	10000		11/21/25 13:32	74-87-3	
Dibromochloromethane	ND	ug/L	50000	10000		11/21/25 13:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	50000	10000		11/21/25 13:32	106-93-4	
Dichlorodifluoromethane	ND	ug/L	50000	10000		11/21/25 13:32	75-71-8	HS
1,1-Dichloroethane	ND	ug/L	50000	10000		11/21/25 13:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	50000	10000		11/21/25 13:32	107-06-2	
1,1-Dichloroethene	ND	ug/L	50000	10000		11/21/25 13:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	50000	10000		11/21/25 13:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	50000	10000		11/21/25 13:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	50000	10000		11/21/25 13:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	50000	10000		11/21/25 13:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	50000	10000		11/21/25 13:32	10061-02-6	
Ethylbenzene	**88900**	ug/L	50000	10000		11/21/25 13:32	100-41-4	
2-Hexanone	ND	ug/L	100000	10000		11/21/25 13:32	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	50000	10000		11/21/25 13:32	98-82-8	
Methyl acetate	ND	ug/L	100000	10000		11/21/25 13:32	79-20-9	
Methylene Chloride	ND	ug/L	50000	10000		11/21/25 13:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100000	10000		11/21/25 13:32	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	50000	10000		11/21/25 13:32	1634-04-4	
Styrene	ND	ug/L	50000	10000		11/21/25 13:32	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	50000	10000		11/21/25 13:32	79-34-5	
Tetrachloroethene	ND	ug/L	50000	10000		11/21/25 13:32	127-18-4	
Toluene	**253000**	ug/L	50000	10000		11/21/25 13:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	50000	10000		11/21/25 13:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	50000	10000		11/21/25 13:32	79-00-5	
Trichloroethene	ND	ug/L	50000	10000		11/21/25 13:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	50000	10000		11/21/25 13:32	75-69-4	
Vinyl chloride	ND	ug/L	20000	10000		11/21/25 13:32	75-01-4	
m&p-Xylene	ND	ug/L	100000	10000		11/21/25 13:32	179601-23-1	
o-Xylene	ND	ug/L	50000	10000		11/21/25 13:32	95-47-6	
Surrogates								
Toluene-d8 (S)	103	%.	76-124	10000		11/21/25 13:32	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	78-121	10000		11/21/25 13:32	460-00-4	
Dibromofluoromethane (S)	97	%.	74-128	10000		11/21/25 13:32	1868-53-7	
HEM, Oil and Grease	Analytical Method: EPA 1664B, 2010 Pace Analytical Services - New Orleans							
Oil and Grease	**1130**	mg/L	5.7	1		11/24/25 12:18		P1
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Ormond Beach							
Alkalinity, Total as CaCO3	**75.0**	mg/L	5.0	1		11/21/25 21:43		

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Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Sample: Mary Ann Lower Mob Bay **Lab ID: 20373461001** Collected: 11/18/25 08:32 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Ormond Beach							
pH at 25 Degrees C	**5.6**	Std. Units	0.10	1		11/25/25 16:23		H6
4500S2F Sulfide	Analytical Method: SM 4500-S2F Pace Analytical Services - Ormond Beach							
Sulfide	**672**	mg/L	0.10	1		11/25/25 10:29	18496-25-8	
Total Nitrogen Calculation	Analytical Method: 40CFR PART 432.2 Pace Analytical Services - New Orleans							
Nitrogen	**173**	mg/L	0.15	1		12/01/25 09:45	7727-37-9	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - New Orleans							
Nitrogen, Kjeldahl, Total	**173**	mg/L	3.0	1	11/24/25 11:28	11/26/25 15:16	7727-37-9	P1
4500NO3-F, NO3-NO2	Analytical Method: SM 4500-NO3 F Pace Analytical Services - New Orleans							
Nitrogen, NO2 plus NO3	ND	mg/L	5.0	100		11/20/25 15:15		D3

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QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

QC Batch: 375900
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373461001

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloropropane	ug/L	ND	5.0	11/20/25 15:05	
2-Butanone (MEK)	ug/L	ND	10.0	11/20/25 15:05	
2-Hexanone	ug/L	ND	10.0	11/20/25 15:05	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/20/25 15:05	
Acetone	ug/L	ND	10.0	11/20/25 15:05	
Benzene	ug/L	ND	5.0	11/20/25 15:05	
Bromodichloromethane	ug/L	ND	5.0	11/20/25 15:05	
Bromoform	ug/L	ND	5.0	11/20/25 15:05	
Bromomethane	ug/L	ND	5.0	11/20/25 15:05	
Carbon disulfide	ug/L	ND	5.0	11/20/25 15:05	
Carbon tetrachloride	ug/L	ND	5.0	11/20/25 15:05	
Chlorobenzene	ug/L	ND	5.0	11/20/25 15:05	
Chloroethane	ug/L	ND	5.0	11/20/25 15:05	
Chloroform	ug/L	ND	5.0	11/20/25 15:05	
Chloromethane	ug/L	ND	5.0	11/20/25 15:05	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Dibromochloromethane	ug/L	ND	5.0	11/20/25 15:05	
Dichlorodifluoromethane	ug/L	ND	5.0	11/20/25 15:05	
Ethylbenzene	ug/L	ND	5.0	11/20/25 15:05	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/20/25 15:05	
m&p-Xylene	ug/L	ND	10.0	11/20/25 15:05	
Methyl acetate	ug/L	ND	10.0	11/20/25 15:05	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/20/25 15:05	
Methylene Chloride	ug/L	ND	5.0	11/20/25 15:05	
o-Xylene	ug/L	ND	5.0	11/20/25 15:05	
Styrene	ug/L	ND	5.0	11/20/25 15:05	
Tetrachloroethene	ug/L	ND	5.0	11/20/25 15:05	
Toluene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Trichloroethene	ug/L	ND	5.0	11/20/25 15:05	
Trichlorofluoromethane	ug/L	ND	5.0	11/20/25 15:05	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	2.0	11/20/25 15:05	
4-Bromofluorobenzene (S)	%.	98	78-121	11/20/25 15:05	
Dibromofluoromethane (S)	%.	94	74-128	11/20/25 15:05	
Toluene-d8 (S)	%.	99	76-124	11/20/25 15:05	

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloropropane	ug/L	ND	5.0	11/21/25 11:59	
2-Butanone (MEK)	ug/L	ND	10.0	11/21/25 11:59	
2-Hexanone	ug/L	ND	10.0	11/21/25 11:59	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/21/25 11:59	
Acetone	ug/L	ND	10.0	11/21/25 11:59	
Benzene	ug/L	ND	5.0	11/21/25 11:59	
Bromodichloromethane	ug/L	ND	5.0	11/21/25 11:59	
Bromoform	ug/L	ND	5.0	11/21/25 11:59	
Bromomethane	ug/L	ND	5.0	11/21/25 11:59	
Carbon disulfide	ug/L	ND	5.0	11/21/25 11:59	
Carbon tetrachloride	ug/L	ND	5.0	11/21/25 11:59	
Chlorobenzene	ug/L	ND	5.0	11/21/25 11:59	
Chloroethane	ug/L	ND	5.0	11/21/25 11:59	
Chloroform	ug/L	ND	5.0	11/21/25 11:59	
Chloromethane	ug/L	ND	5.0	11/21/25 11:59	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Dibromochloromethane	ug/L	ND	5.0	11/21/25 11:59	
Dichlorodifluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Ethylbenzene	ug/L	ND	5.0	11/21/25 11:59	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/21/25 11:59	
m&p-Xylene	ug/L	ND	10.0	11/21/25 11:59	
Methyl acetate	ug/L	ND	10.0	11/21/25 11:59	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/21/25 11:59	
Methylene Chloride	ug/L	ND	5.0	11/21/25 11:59	
o-Xylene	ug/L	ND	5.0	11/21/25 11:59	
Styrene	ug/L	ND	5.0	11/21/25 11:59	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	5.0	11/21/25 11:59	
Toluene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Trichloroethene	ug/L	ND	5.0	11/21/25 11:59	
Trichlorofluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Vinyl chloride	ug/L	ND	2.0	11/21/25 11:59	
4-Bromofluorobenzene (S)	%.	101	78-121	11/21/25 11:59	
Dibromofluoromethane (S)	%.	105	74-128	11/21/25 11:59	
Toluene-d8 (S)	%.	103	76-124	11/21/25 11:59	

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	48.9	98	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	44.2	88	65-129	
1,1,2-Trichloroethane	ug/L	50	47.3	95	75-121	
1,1-Dichloroethane	ug/L	50	44.8	90	71-127	
1,1-Dichloroethene	ug/L	50	47.9	96	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	75-125	
1,2-Dichloroethane	ug/L	50	47.4	95	65-131	
1,2-Dichloropropane	ug/L	50	45.7	91	72-125	
2-Butanone (MEK)	ug/L	50	40.8	82	34-170	
2-Hexanone	ug/L	50	45.2	90	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.9	90	58-141	
Acetone	ug/L	50	38.3	77	16-192	
Benzene	ug/L	50	44.8	90	74-132	
Bromodichloromethane	ug/L	50	49.9	100	73-117	
Bromoform	ug/L	50	50.8	102	58-132	
Bromomethane	ug/L	50	45.1	90	47-157	
Carbon disulfide	ug/L	50	45.0	90	52-145	
Carbon tetrachloride	ug/L	50	49.6	99	68-129	
Chlorobenzene	ug/L	50	50.6	101	79-121	
Chloroethane	ug/L	50	44.6	89	34-160	
Chloroform	ug/L	50	46.0	92	70-120	
Chloromethane	ug/L	50	39.8	80	44-142	
cis-1,2-Dichloroethene	ug/L	50	46.1	92	71-124	
cis-1,3-Dichloropropene	ug/L	50	48.3	97	77-121	
Dibromochloromethane	ug/L	50	49.5	99	67-122	
Dichlorodifluoromethane	ug/L	50	42.8	86	28-148	
Ethylbenzene	ug/L	50	50.6	101	79-116	
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	100	100	78-119	
Methyl acetate	ug/L	50	43.3	87	47-155	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	44.5	89	58-135	
Methylene Chloride	ug/L	50	44.6	89	49-145	
o-Xylene	ug/L	50	50.8	102	77-121	
Styrene	ug/L	50	50.0	100	81-123	
Tetrachloroethene	ug/L	50	52.4	105	62-138	
Toluene	ug/L	50	48.8	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.3	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	49.0	98	77-121	
Trichloroethene	ug/L	50	48.2	96	77-117	
Trichlorofluoromethane	ug/L	50	49.2	98	45-164	
Vinyl chloride	ug/L	50	44.9	90	48-130	
4-Bromofluorobenzene (S)	%.			102	78-121	
Dibromofluoromethane (S)	%.			93	74-128	
Toluene-d8 (S)	%.			99	76-124	

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.3	99	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	57.2	114	65-129	
1,1,2-Trichloroethane	ug/L	50	52.3	105	75-121	
1,1-Dichloroethane	ug/L	50	47.9	96	71-127	
1,1-Dichloroethene	ug/L	50	46.5	93	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.7	105	75-125	
1,2-Dichloroethane	ug/L	50	48.9	98	65-131	
1,2-Dichloropropane	ug/L	50	50.4	101	72-125	
2-Butanone (MEK)	ug/L	50	52.1	104	34-170	
2-Hexanone	ug/L	50	58.5	117	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	52.2	104	58-141	
Acetone	ug/L	50	43.1	86	16-192	
Benzene	ug/L	50	46.5	93	74-132	
Bromodichloromethane	ug/L	50	52.4	105	73-117	
Bromoform	ug/L	50	41.7	83	58-132	
Bromomethane	ug/L	50	57.6	115	47-157	
Carbon disulfide	ug/L	50	46.5	93	52-145	
Carbon tetrachloride	ug/L	50	47.8	96	68-129	
Chlorobenzene	ug/L	50	48.2	96	79-121	
Chloroethane	ug/L	50	47.7	95	34-160	
Chloroform	ug/L	50	47.2	94	70-120	
Chloromethane	ug/L	50	36.9	74	44-142	
cis-1,2-Dichloroethene	ug/L	50	45.6	91	71-124	
cis-1,3-Dichloropropene	ug/L	50	52.3	105	77-121	
Dibromochloromethane	ug/L	50	48.3	97	67-122	
Dichlorodifluoromethane	ug/L	50	46.9	94	28-148	
Ethylbenzene	ug/L	50	48.6	97	79-116	

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REPORT OF LABORATORY ANALYSIS

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	97.4	97	78-119	
Methyl acetate	ug/L	50	53.6	107	47-155	
Methyl-tert-butyl ether	ug/L	50	48.7	97	58-135	
Methylene Chloride	ug/L	50	45.5	91	49-145	
o-Xylene	ug/L	50	48.0	96	77-121	
Styrene	ug/L	50	48.0	96	81-123	
Tetrachloroethene	ug/L	50	48.2	96	62-138	
Toluene	ug/L	50	48.9	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.7	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	54.1	108	77-121	
Trichloroethene	ug/L	50	47.6	95	77-117	
Trichlorofluoromethane	ug/L	50	62.6	125	45-164	
Vinyl chloride	ug/L	50	54.8	110	48-130	
4-Bromofluorobenzene (S)	%.			99	78-121	
Dibromofluoromethane (S)	%.			99	74-128	
Toluene-d8 (S)	%.			101	76-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	45.9	45.5	92	91	73-141	1	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.7	41.8	85	84	48-148	2	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	46.2	45.7	92	91	46-154	1	20	
1,1-Dichloroethane	ug/L	ND	50	50	40.8	40.5	82	81	63-145	1	20	
1,1-Dichloroethene	ug/L	ND	50	50	40.4	42.0	81	84	28-176	4	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.7	46.8	95	94	69-134	2	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.3	45.1	93	90	51-147	2	20	
1,2-Dichloropropane	ug/L	ND	50	50	43.2	42.8	86	86	64-140	1	20	
2-Butanone (MEK)	ug/L	ND	50	50	26.6	25.4	53	51	10-200	5	20	
2-Hexanone	ug/L	ND	50	50	36.8	35.1	74	70	40-157	5	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	42.0	41.5	84	83	36-165	1	20	
Acetone	ug/L	ND	50	50	16.1	17.3	32	35	10-200	7	20	
Benzene	ug/L	ND	50	50	42.8	42.7	86	85	29-186	0	20	
Bromodichloromethane	ug/L	ND	50	50	49.2	48.6	98	97	58-139	1	20	
Bromoform	ug/L	ND	50	50	50.7	49.7	101	99	57-135	2	20	
Bromomethane	ug/L	ND	50	50	46.5	52.4	93	105	42-168	12	20	
Carbon disulfide	ug/L	ND	50	50	37.0	39.1	74	78	44-170	6	20	
Carbon tetrachloride	ug/L	ND	50	50	48.2	48.0	96	96	45-162	0	20	
Chlorobenzene	ug/L	ND	50	50	47.7	47.8	95	96	71-135	0	20	
Chloroethane	ug/L	ND	50	50	44.1	47.7	88	95	32-175	8	20	
Chloroform	ug/L	ND	50	50	44.2	43.9	88	88	61-136	1	20	
Chloromethane	ug/L	ND	50	50	41.9	45.8	84	92	38-154	9	20	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
cis-1,2-Dichloroethene	ug/L	ND	50	50	43.2	43.9	86	88	44-160	2	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	45.8	45.3	92	91	47-153	1	20	
Dibromochloromethane	ug/L	ND	50	50	49.9	49.3	100	99	64-130	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	56.5	62.6	113	125	22-160	10	20	
Ethylbenzene	ug/L	ND	50	50	48.4	47.5	97	95	51-153	2	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	43.5	43.7	87	87	68-145	0	20	
m&p-Xylene	ug/L	ND	100	100	94.8	96.1	95	96	30-173	1	20	
Methyl acetate	ug/L	ND	50	50	42.8	37.4	86	75	20-173	13	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	41.0	40.1	82	80	36-160	2	20	
Methylene Chloride	ug/L	ND	50	50	40.4	40.3	81	81	56-140	0	20	
o-Xylene	ug/L	ND	50	50	48.3	48.7	97	97	10-197	1	20	
Styrene	ug/L	ND	50	50	46.3	47.1	93	94	37-163	2	20	
Tetrachloroethene	ug/L	ND	50	50	47.6	48.6	95	97	18-193	2	20	
Toluene	ug/L	ND	50	50	45.6	45.8	91	92	33-175	0	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	40.7	40.9	81	82	63-140	0	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	45.9	46.4	92	93	47-153	1	20	
Trichloroethene	ug/L	ND	50	50	44.6	44.2	89	88	24-181	1	20	
Trichlorofluoromethane	ug/L	ND	50	50	45.9	50.7	92	101	37-182	10	20	
Vinyl chloride	ug/L	ND	50	50	44.1	46.8	88	94	19-169	6	20	
4-Bromofluorobenzene (S)	%.						103	102	78-121			
Dibromofluoromethane (S)	%.						93	92	74-128			
Toluene-d8 (S)	%.						99	99	76-124			

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REPORT OF LABORATORY ANALYSIS

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4320 Midmost Dr
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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

QC Batch: 523097
QC Batch Method: EPA 3510
Analysis Method: EPA 8270E
Analysis Description: 8270E Water MSSV Low Volume
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 20373461001

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,2-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,3-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,4-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2,4,5-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4,6-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dimethylphenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dinitrophenol	ug/L	ND	50.0	11/26/25 13:40	
2,4-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2,6-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2-Chloronaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Chlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Methylphenol(o-Cresol)	ug/L	ND	5.0	11/26/25 13:40	
2-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
2-Nitrophenol	ug/L	ND	5.0	11/26/25 13:40	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	5.0	11/26/25 13:40	
3,3'-Dichlorobenzidine	ug/L	ND	5.0	11/26/25 13:40	
3-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4,6-Dinitro-2-methylphenol	ug/L	ND	10.0	11/26/25 13:40	
4-Bromophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Chloro-3-methylphenol	ug/L	ND	5.0	11/26/25 13:40	
4-Chloroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Nitrophenol	ug/L	ND	10.0	11/26/25 13:40	
Acenaphthene	ug/L	ND	5.0	11/26/25 13:40	
Acenaphthylene	ug/L	ND	5.0	11/26/25 13:40	
Aniline	ug/L	ND	5.0	11/26/25 13:40	
Anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzidine	ug/L	ND	50.0	11/26/25 13:40	
Benzo(a)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(a)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(b)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(g,h,i)perylene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(k)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzoic acid	ug/L	ND	50.0	11/26/25 13:40	
Benzyl alcohol	ug/L	ND	5.0	11/26/25 13:40	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethoxy)methane	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	11/26/25 13:40	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	11/26/25 13:40	
Butylbenzylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Carbazole	ug/L	ND	5.0	11/26/25 13:40	
Chrysene	ug/L	ND	5.0	11/26/25 13:40	
Di-n-butylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Di-n-octylphthalate	ug/L	ND	10.0	11/26/25 13:40	CH
Dibenz(a,h)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Dibenzofuran	ug/L	ND	5.0	11/26/25 13:40	
Diethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Dimethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Fluorene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorocyclopentadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloroethane	ug/L	ND	5.0	11/26/25 13:40	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Isophorone	ug/L	ND	5.0	11/26/25 13:40	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodimethylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodiphenylamine	ug/L	ND	5.0	11/26/25 13:40	
Naphthalene	ug/L	ND	5.0	11/26/25 13:40	
Nitrobenzene	ug/L	ND	5.0	11/26/25 13:40	
Pentachlorophenol	ug/L	ND	5.0	11/26/25 13:40	
Phenanthrene	ug/L	ND	5.0	11/26/25 13:40	
Phenol	ug/L	ND	5.0	11/26/25 13:40	
Pyrene	ug/L	ND	5.0	11/26/25 13:40	
Pyridine	ug/L	ND	10.0	11/26/25 13:40	
2,4,6-Tribromophenol (S)	%	64	32-141	11/26/25 13:40	
2-Fluorobiphenyl (S)	%	39	15-130	11/26/25 13:40	
2-Fluorophenol (S)	%	26	10-130	11/26/25 13:40	
Nitrobenzene-d5 (S)	%	55	13-130	11/26/25 13:40	
Phenol-d6 (S)	%	15	10-130	11/26/25 13:40	
Terphenyl-d14 (S)	%	83	50-133	11/26/25 13:40	

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	24.7	49	37-130	
1,2-Dichlorobenzene	ug/L	50	25.7	51	39-130	
1,3-Dichlorobenzene	ug/L	50	24.4	49	34-130	

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QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	24.0	48	36-130	
1-Methylnaphthalene	ug/L	50	24.3	49	45-130	
2,4,5-Trichlorophenol	ug/L	50	34.3	69	55-130	
2,4,6-Trichlorophenol	ug/L	50	34.4	69	59-130	
2,4-Dichlorophenol	ug/L	50	29.7	59	55-130	
2,4-Dimethylphenol	ug/L	50	32.5	65	47-130	
2,4-Dinitrophenol	ug/L	50	20.8J	42	10-131	
2,4-Dinitrotoluene	ug/L	50	37.6	75	69-130	
2,6-Dinitrotoluene	ug/L	50	38.2	76	61-130	
2-Chloronaphthalene	ug/L	50	27.6	55	48-130	
2-Chlorophenol	ug/L	50	27.7	55	52-130	
2-Methylnaphthalene	ug/L	50	23.0	46	41-130	
2-Methylphenol(o-Cresol)	ug/L	50	22.2	44	47-130	L2
2-Nitroaniline	ug/L	50	38.4	77	62-143	
2-Nitrophenol	ug/L	50	28.7	57	53-130	
3&4-Methylphenol(m&p Cresol)	ug/L	50	22.9	46	42-130	
3,3'-Dichlorobenzidine	ug/L	50	26.4	53	26-130	
3-Nitroaniline	ug/L	50	39.9	80	58-148	
4,6-Dinitro-2-methylphenol	ug/L	50	27.9	56	37-130	
4-Bromophenylphenyl ether	ug/L	50	32.2	64	55-130	
4-Chloro-3-methylphenol	ug/L	50	31.5	63	52-130	
4-Chloroaniline	ug/L	50	34.0	68	44-149	
4-Chlorophenylphenyl ether	ug/L	50	36.8	74	57-130	
4-Nitroaniline	ug/L	50	39.3	79	42-153	
4-Nitrophenol	ug/L	50	10.5	21	11-130	
Acenaphthene	ug/L	50	30.5	61	49-130	
Acenaphthylene	ug/L	50	32.0	64	53-130	
Aniline	ug/L	50	24.0	48	10-185	
Anthracene	ug/L	50	40.0	80	66-131	
Benzidine	ug/L		ND			
Benzo(a)anthracene	ug/L	50	41.2	82	69-130	
Benzo(a)pyrene	ug/L	50	40.5	81	68-130	
Benzo(b)fluoranthene	ug/L	50	42.2	84	68-130	
Benzo(g,h,i)perylene	ug/L	50	42.1	84	65-130	
Benzo(k)fluoranthene	ug/L	50	42.2	84	70-130	
Benzoic acid	ug/L	50	ND	20	14-130	
Benzyl alcohol	ug/L	50	25.4	51	46-130	
Biphenyl (Diphenyl)	ug/L		ND			
bis(2-Chloroethoxy)methane	ug/L	50	32.1	64	55-130	
bis(2-Chloroethyl) ether	ug/L	50	31.5	63	54-130	
bis(2-Ethylhexyl)phthalate	ug/L	50	40.5	81	66-130	
Butylbenzylphthalate	ug/L	50	41.4	83	66-130	
Carbazole	ug/L	50	42.7	85	63-156	
Chrysene	ug/L	50	43.5	87	70-130	
Di-n-butylphthalate	ug/L	50	41.3	83	64-130	
Di-n-octylphthalate	ug/L	50	37.7	75	53-130	CH
Dibenz(a,h)anthracene	ug/L	50	36.5	73	58-130	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibenzofuran	ug/L	50	34.4	69	58-130	
Diethylphthalate	ug/L	50	42.8	86	70-130	
Dimethylphthalate	ug/L	50	40.9	82	67-130	
Fluoranthene	ug/L	50	40.9	82	65-131	
Fluorene	ug/L	50	37.0	74	58-130	
Hexachloro-1,3-butadiene	ug/L	50	21.5	43	26-130	
Hexachlorobenzene	ug/L	50	34.3	69	61-130	
Hexachlorocyclopentadiene	ug/L	50	16.3	33	15-130	
Hexachloroethane	ug/L	50	22.6	45	29-130	
Indeno(1,2,3-cd)pyrene	ug/L	50	31.2	62	48-130	
Isophorone	ug/L	50	32.1	64	55-130	
N-Nitroso-di-n-propylamine	ug/L	50	30.2	60	53-130	
N-Nitrosodimethylamine	ug/L	50	15.9	32	32-130	
N-Nitrosodiphenylamine	ug/L	50	34.3	69	63-130	
Naphthalene	ug/L	50	26.6	53	49-130	
Nitrobenzene	ug/L	50	34.5	69	63-130	
Pentachlorophenol	ug/L	50	32.5	65	53-130	
Phenanthrene	ug/L	50	39.9	80	63-139	
Phenol	ug/L	50	11.0	22	23-130	L2
Pyrene	ug/L	50	44.9	90	70-130	
Pyridine	ug/L	50	9.4J	19	10-130	
2,4,6-Tribromophenol (S)	%			77	32-141	
2-Fluorobiphenyl (S)	%			53	15-130	
2-Fluorophenol (S)	%			30	10-130	
Nitrobenzene-d5 (S)	%			62	13-130	
Phenol-d6 (S)	%			20	10-130	
Terphenyl-d14 (S)	%			86	50-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/L	<0.0024 mg/L	50	50	28.8	27.8	58	56	26-130	4	36	
1,2-Dichlorobenzene	ug/L	<0.0020 mg/L	50	50	30.3	29.2	61	58	26-130	4	33	
1,3-Dichlorobenzene	ug/L	<0.0022 mg/L	50	50	27.0	28.0	54	56	23-130	4	40	
1,4-Dichlorobenzene	ug/L	<0.0018 mg/L	50	50	28.5	27.6	57	55	22-130	3	39	
1-Methylnaphthalene	ug/L	<0.0014 mg/L	50	50	30.2	30.2	60	60	32-130	0	22	
2,4,5-Trichlorophenol	ug/L	<0.0018 mg/L	50	50	35.4	38.5	71	77	10-131	8	50	
2,4,6-Trichlorophenol	ug/L	<0.0020 mg/L	50	50	37.7	36.6	75	73	10-130	3	50	

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REPORT OF LABORATORY ANALYSIS

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dichlorophenol	ug/L	<0.0015 mg/L	50	50	35.1	32.8	70	66	19-130	7	45	
2,4-Dimethylphenol	ug/L	<0.0013 mg/L	50	50	31.4	37.9	63	76	44-130	19	21	
2,4-Dinitrophenol	ug/L	<0.012 mg/L	50	50	28J	27.1J	56	54	10-200		29	
2,4-Dinitrotoluene	ug/L	<0.0012 mg/L	50	50	41.9	41.2	84	82	48-130	2	20	
2,6-Dinitrotoluene	ug/L	<0.00085 mg/L	50	50	40.4	40.2	81	80	37-130	1	21	
2-Chloronaphthalene	ug/L	<0.0012 mg/L	50	50	32.9	33.4	66	67	32-130	2	25	
2-Chlorophenol	ug/L	<0.0026 mg/L	50	50	30.5	31.0	61	62	21-130	2	38	
2-Methylnaphthalene	ug/L	<0.0015 mg/L	50	50	30.8	30.5	62	61	28-130	1	23	
2-Methylphenol(o-Cresol)	ug/L	<0.00077 mg/L	50	50	26.4	26.5	53	53	36-130	1	32	
2-Nitroaniline	ug/L	<0.0026 mg/L	50	50	43.9	46.0	88	92	11-158	5	20	
2-Nitrophenol	ug/L	<0.0015 mg/L	50	50	34.7	33.4	69	67	14-130	4	41	
3&4-Methylphenol(m&p Cresol)	ug/L	<0.0018 mg/L	50	50	25.5	26.6	51	53	20-130	4	38	
3,3'-Dichlorobenzidine	ug/L	<0.0015 mg/L	50	50	21.4	21.3	43	43	10-130	0	28	
3-Nitroaniline	ug/L	<0.0018 mg/L	50	50	40.0	41.8	80	84	17-155	4	27	
4,6-Dinitro-2-methylphenol	ug/L	<0.0012 mg/L	50	50	33.6	30.9	67	62	10-137	8	34	
4-Bromophenylphenyl ether	ug/L	<0.0018 mg/L	50	50	38.6	38.2	77	76	42-145	1	21	
4-Chloro-3-methylphenol	ug/L	<0.00094 mg/L	50	50	34.4	34.3	69	69	43-130	0	20	
4-Chloroaniline	ug/L	<0.0025 mg/L	50	50	35.5	33.8	71	68	19-154	5	22	
4-Chlorophenylphenyl ether	ug/L	<0.0020 mg/L	50	50	40.8	38.4	82	77	43-147	6	20	
4-Nitroaniline	ug/L	<0.0024 mg/L	50	50	42.5	35.0	85	70	10-159	19	36	
4-Nitrophenol	ug/L	<0.0083 mg/L	50	50	13.5	13.1	27	26	10-130	3	36	
Acenaphthene	ug/L	<0.0015 mg/L	50	50	35.8	34.9	72	70	32-132	3	21	
Acenaphthylene	ug/L	<0.0013 mg/L	50	50	38.5	37.2	77	74	37-131	3	20	
Aniline	ug/L	<0.0026 mg/L	50	50	26.8	25.4	54	51	16-149	5	28	
Anthracene	ug/L	<0.0017 mg/L	50	50	43.2	42.4	86	85	43-136	2	20	
Benzo(a)anthracene	ug/L	<0.0012 mg/L	50	50	41.9	41.5	84	83	47-130	1	20	
Benzo(a)pyrene	ug/L	<0.0013 mg/L	50	50	43.4	43.3	87	87	36-130	0	20	

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Pace Analytical Services, LLC
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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzo(b)fluoranthene	ug/L	<0.0014 mg/L	50	50	42.6	41.1	85	82	41-130	4	20	
Benzo(g,h,i)perylene	ug/L	<0.0017 mg/L	50	50	43.4	43.6	87	87	41-131	0	20	
Benzo(k)fluoranthene	ug/L	<0.0014 mg/L	50	50	43.2	43.0	86	86	45-131	0	20	
Benzoic acid	ug/L	<0.019 mg/L	50	50	ND	ND	14	16	10-130		20	
Benzyl alcohol	ug/L	<0.0032 mg/L	50	50	30.8	30.5	62	61	46-130	1	21	
bis(2-Chloroethoxy)methane	ug/L	<0.0011 mg/L	50	50	38.4	36.7	77	73	40-130	4	20	
bis(2-Chloroethyl) ether	ug/L	<0.0062 mg/L	50	50	33.8	34.6	68	69	32-134	3	20	
bis(2-Ethylhexyl)phthalate	ug/L	<0.0021 mg/L	50	50	46.4	45.1	93	90	34-130	3	20	
Butylbenzylphthalate	ug/L	<0.0037 mg/L	50	50	46.1	41.8	92	84	39-130	10	20	
Carbazole	ug/L	<0.0011 mg/L	50	50	46.5	44.6	93	89	45-154	4	20	
Chrysene	ug/L	<0.0018 mg/L	50	50	44.8	43.2	90	86	53-135	4	20	
Di-n-butylphthalate	ug/L	<0.0012 mg/L	50	50	44.7	44.6	89	89	41-130	0	20	
Di-n-octylphthalate	ug/L	<0.0046 mg/L	50	50	45.3	45.5	91	91	24-130	0	20	CH
Dibenz(a,h)anthracene	ug/L	<0.0023 mg/L	50	50	41.1	37.1	82	74	36-130	10	20	
Dibenzofuran	ug/L	<0.00093 mg/L	50	50	40.2	39.7	80	79	47-140	1	20	
Diethylphthalate	ug/L	<0.0012 mg/L	50	50	44.5	43.1	89	86	48-130	3	20	
Dimethylphthalate	ug/L	<0.0013 mg/L	50	50	41.7	40.7	83	81	44-130	2	20	
Fluoranthene	ug/L	<0.0016 mg/L	50	50	43.1	41.0	86	82	47-131	5	20	
Fluorene	ug/L	<0.0014 mg/L	50	50	41.5	40.0	83	80	43-135	4	20	
Hexachloro-1,3-butadiene	ug/L	<0.0025 mg/L	50	50	26.3	25.9	53	52	10-130	2	50	
Hexachlorobenzene	ug/L	<0.0016 mg/L	50	50	39.0	37.9	78	76	51-142	3	20	
Hexachlorocyclopentadiene	ug/L	<0.0019 mg/L	50	50	17.0	17.6	34	35	10-130	3	50	
Hexachloroethane	ug/L	<0.0015 mg/L	50	50	27.7	26.3	55	53	10-130	5	50	
Indeno(1,2,3-cd)pyrene	ug/L	<0.0018 mg/L	50	50	36.5	34.2	73	68	30-130	6	20	
Isophorone	ug/L	<0.00098 mg/L	50	50	36.3	35.4	73	71	50-130	3	20	
N-Nitroso-di-n-propylamine	ug/L	<0.00082 mg/L	50	50	36.1	34.7	72	69	35-130	4	30	
N-Nitrosodimethylamine	ug/L	<0.0015 mg/L	50	50	16.0	17.9	32	36	10-130	11	31	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
N-Nitrosodiphenylamine	ug/L	<0.00041 mg/L	50	50	41.9	42.2	84	84	57-130	1	20	
Naphthalene	ug/L	<0.0017 mg/L	50	50	32.1	30.8	63	61	34-130	4	20	
Nitrobenzene	ug/L	<0.0016 mg/L	50	50	39.8	38.6	80	77	50-132	3	23	
Pentachlorophenol	ug/L	<0.0016 mg/L	50	50	37.1	35.7	74	71	10-137	4	45	
Phenanthrene	ug/L	<0.0011 mg/L	50	50	43.0	41.5	86	83	48-142	4	20	
Phenol	ug/L	<0.00098 mg/L	50	50	12.4	12.1	25	24	10-130	2	36	1b
Pyrene	ug/L	<0.00098 mg/L	50	50	44.3	39.3	89	79	48-134	12	20	
Pyridine	ug/L	<0.0018 mg/L	50	50	17.5	11.4	35	23	17-130	42	50	
2,4,6-Tribromophenol (S)	%						75	74	32-141			
2-Fluorobiphenyl (S)	%						61	59	15-130			
2-Fluorophenol (S)	%						31	30	10-130			
Nitrobenzene-d5 (S)	%						70	68	13-130			
Phenol-d6 (S)	%						23	23	10-130			
Terphenyl-d14 (S)	%						83	74	50-133			

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QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

QC Batch: 376090
QC Batch Method: EPA 1664B, 2010
Analysis Method: EPA 1664B, 2010
Analysis Description: 1664 HEM, Oil and Grease
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373461001

METHOD BLANK: 1826560 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	11/24/25 12:18	

LABORATORY CONTROL SAMPLE: 1826561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	34.4	86	78-114	

MATRIX SPIKE SAMPLE: 1826562

Parameter	Units	20373385002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	33.7	80	78-114	

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QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

QC Batch: 1146753
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 20373461001

METHOD BLANK: 6286819 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	11/21/25 16:46	

LABORATORY CONTROL SAMPLE: 6286820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	250	232	93	90-110	

SAMPLE DUPLICATE: 6286821

Parameter	Units	35999249036 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	24.4	24.2	1	20	

SAMPLE DUPLICATE: 6286822

Parameter	Units	35998953002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	244	244	0	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

QC Batch: 1147576
QC Batch Method: SM 4500-S2F
Analysis Method: SM 4500-S2F
Analysis Description: 4500S2F Sulfide
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 20373461001

METHOD BLANK: 6290584 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	11/25/25 09:32	

LABORATORY CONTROL SAMPLE & LCSD: 6290585 6290586

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	6	5.8	5.8	96	96	80-120	0	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

QC Batch: 376100
QC Batch Method: EPA 351.2
Analysis Method: EPA 351.2
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373461001

METHOD BLANK: 1826586 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.15	11/26/25 15:08	

LABORATORY CONTROL SAMPLE: 1826587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	6.6	6.5	100	90-110	

MATRIX SPIKE SAMPLE: 1826589

Parameter	Units	20372419001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	2.5	166	242	75-125	M1

SAMPLE DUPLICATE: 1826588

Parameter	Units	20372419001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	164	2	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

QC Batch: 375770
QC Batch Method: SM 4500-NO3 F
Analysis Method: SM 4500-NO3 F
Analysis Description: SM4500NO3-F, Nitrate, Preserved
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373461001

METHOD BLANK: 1824783 Matrix: Water
Associated Lab Samples: 20373461001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.050	11/20/25 15:09	

LABORATORY CONTROL SAMPLE: 1824784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	6	5.6	93	90-110	

MATRIX SPIKE SAMPLE: 1824786

Parameter	Units	20373411001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	1	1.1	93	80-120	

SAMPLE DUPLICATE: 1824785

Parameter	Units	20373411001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	0.15	3	20	

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QUALIFIERS

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

ANALYTE QUALIFIERS

1b	This sample was sub-sampled from an AG1 for a 100 mL extraction.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P1	Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Produced Liquids - Mary Ann-Lo
Pace Project No.: 20373461

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20373461001	**Mary Ann Lower Mob Bay**	EPA 3510	523097	EPA 8270E	523163
20373461001	**Mary Ann Lower Mob Bay**	EPA 8260B	375900		
20373461001	**Mary Ann Lower Mob Bay**	EPA 1664B, 2010	376090		
20373461001	**Mary Ann Lower Mob Bay**	SM 2320B	1146753		
20373461001	**Mary Ann Lower Mob Bay**	SM 4500-H+B	1147808		
20373461001	**Mary Ann Lower Mob Bay**	SM 4500-S2F	1147576		
20373461001	**Mary Ann Lower Mob Bay**	40CFR PART 432.2	376483		
20373461001	**Mary Ann Lower Mob Bay**	EPA 351.2	376100	EPA 351.2	376361
20373461001	**Mary Ann Lower Mob Bay**	SM 4500-NO3 F	375770		

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Pace® Location Requested (City/State):
Pace Analytical Mobile
4320 Midmost Dr, Mobile, AL 36609

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO# : 20373461

20373461

Company Name:	W&T Offshore/Aquasition II LLC
Address:	6000 Deakle Road Theodore, AL 36582
Customer Project #:	
Project Name:	Produced Liquids - Mary Ann-Lower Mob Bay
Collection Info/Facility ID (as applicable):	
Zone Collected:	[ ] AK [ ] PT [ ] MT [X] CT [ ] ET
Deliverables:	Level II [ ] Level III [ ] Level IV EQUIS Other

Contact/Report To:	Laurentiu Pirvu
Phone #:	(251)973-4627
E-Mail:	lpirvu@wtoffshore.com
Cc E-Mail:	
Invoice To:	Invoice Aquasition II
Invoice E-Mail:	apinv@wtoffshore.com
Purchase Order # (if applicable):	380000-353248
Quote #:	
County / State origin of sample(s):	Alabama
Regulatory Program (DW, RCRA, etc.) as applicable:	Reportable [ ] Yes [ ] No
Rush (Pre-approval required):	[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____
DW PWSID # or WW Permit # as applicable:	
Date Results Requested:	
Field Filtered (if applicable):	[ ] Yes [ ] No
Analysis:	

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units
Hollaux Depart Produced Liquids			11/18/25	8:20am	11/18/25	8:32 am			
He Aux Depart Produced Liquids			11/18/25	8:20am	11/18/25	8:32am			
He Aux Depart Produced Liquids			11/18/25	8:20am	11/18/25	8:32am			
He Aux Depart Produced Liquids			11/18/25	8:20am	11/18/25	8:32am			
He Aux Depart Produced Liquids			11/18/25	8:20am	11/18/25	8:32am			
He Aux Depart Produced Liquids			11/18/25	8:20am	11/18/25	8:32am			
He Aux Depart Produced Liquids			11/18/25	8:30am	11/18/25	8:45am			
He Aux Depart Produced Liquids			11/18/25	8:30am	11/18/25	8:45am			
He Aux Depart Produced Liquids			11/18/25	8:30am	11/18/25	8:45am			
He Aux Depart Produced Liquids			11/18/25	8:30am	11/18/25	8:45am			

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

8260 MSV	8270 w/PAH	CO2	HEM, Oil and Grease	Hydrogen Sulfide	TKN, NO2+NO3, TN

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr:	Mary Kathryn Brenner
AcctNum / Client ID:	
Table #:	
Profile / Template:	17643
Prelog / Bottle Ord. ID:	EZ 3322747

Sample Comment

Preservation non-conformance identified for sample

Additional Instructions from Pace®:

Collected By:
(Printed Name) Sam Sprinkle
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	MOTM24	0	16.2	15.2	

Relinquished by/Company: (Signature)	Date/Time: 11/18/25 - 1:38 pm	Received by/Company: (Signature)	Date/Time: 1545	Tracking Number:
Relinquished by/Company: (Signature) WT Offshore	Date/Time: 11-18-25 3:45 pm	Received by/Company: (Signature) Elizabeth Ray	Date/Time: 11/18/25 1545	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Mobile
4320 Midmost Dr, Mobile, AL 36609

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	W&T Offshore/Aquasition II LLC
Address:	6000 Deakle Road Theodore, AL 36582
Pace Project #:	
Client Name:	Produced Liquids - Mary Ann-Lower Mob Bay
Collection Info/Facility ID (as applicable):	
Contact/Report To:	Laurentiu Pirvu
Phone #:	(251)973-4627
E-Mail:	lpirvu@wtoffshore.com
Cc E-Mail:	
Invoice To:	Invoice Aquasition II
Invoice E-Mail:	apinv@wtoffshore.com
Purchase Order # (If applicable):	380000-353248
Quote #:	

Specify Container Size **

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

Identify Container Preservative Type***

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested

Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET

County / State origin of sample(s): Alabama

Deliverables:
Level II [ ] Level III [ ] Level IV
EQUIS
Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	8260 MSV	8270 w/PAH	CO2	HEM, Oil and Grease	Hydrogen Sulfide	TKN, NO2+NO3, TN	Sample Comment
11716 Hwy Depot Produced Liquids			11/18/25	9:30am	11/18/25	9:45am										

Lab Use Only
Proj. Mgr: Mary Kathryn Brenner
AcctNum / Client ID:
Table #:
Profile / Template: 17643
Prelog / Bottle Ord. ID: EZ 3322747

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By:
(Printed Name):
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	[illegible]	0	10.2	10.2	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
	11/18/25		11/18/25 1845	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 1845	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace Analytical

Sample Condition Upon Receipt

4320 Midmost Dr. Mobile, AL 36609

Project #:

WO# : 20373461

PM: MKB Due Date: 11/26/25

CLIENT: MO-WT

Courier: ☐ Pace ☒ Client ☐ FedEx ☐ UPS ☐ Other Tracking #

Custody Seal on Cooler/Box Present: [see COC] Custody Seals intact: ☐Yes ☐No

Thermometer Used: ☐ Therm Fisher IR 001 ☒ Other: MOTM21

Type of Ice: (Wet) Blue None

Samples on Ice: [see COC]

Cooler Temperature: [see COC]

Date and Initials of person examining contents: ER 11/18/25

Temp must be measured from temperature blank when present

				Comments:
Temperature Blank Present:	☐Yes	☒No	☐N/A	1
Chain of Custody Present:	☒Yes	☐No	☐N/A	2
Chain of Custody Complete:	☒Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	4
Sampler Name on COC:	☒Yes	☐No	☐N/A	5
Short Hold Time Analyses (<72 hr):	☐Yes	☒No	☐N/A	6
Rush Turn Around Requested:	☐Yes	☒No	☐N/A	7
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	8
Sufficient Volume:	☒Yes	☐No	☐N/A	9
Correct Containers Used:	☒Yes	☐No	☐N/A	10
Filtered vol. Rec. for Diss. tests	☐Yes	☐No	☒N/A	11
Sample Labels match COC:	☒Yes	☐No	☐N/A	12
All containers received within manufacturer's precautionary and/or expiration dates:	☒Yes	☐No	☐N/A	13
All containers needing chemical preservation have been checked (except VOA, micro, & O&G):	☐Yes	☐No	☒N/A	14
All containers preservation checked found to be in compliance with EPA recommendation:	☐Yes	☐No	☒N/A	15 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	☐Yes	☒No	☐N/A	16
Trip Blank Present:	☐Yes	☒No		17

Client Notification/Resolution:

Person Contacted: Date/Time:

Comments/ Resolution: Client Aware

F-NO-C-003-rev.10 16Feb2018 Mobile SCUR Form.xlsx

Internal Transfer Chain of Custody

WO# : 35999043

35999043

Pace

Workorder: 20373461 Workorder Name: Produced Liquids - Mary Ann-Lo

☒ Rush Multiplier____X
☒ Samples Pre-Logged into eCOC

State Of Origin: AL
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 11/18/2025 Results Requested By: 11/26/2025

Report To	Subcontract To
Mary Kathryn Brenner Pace Analytical Mobile Labs 4320 Midmost Dr Mobile, AL 36609 USA Phone 251-344-9106	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved	Requested Analysis: CO2, Specific Conductivity	Requested Analysis: Hydrogen Sulfide	LAB USE ONLY
1	Mary Ann Lower Mob Bay	PS	11/18/2025 08:32	20373461001	Water	1	1	X	X	
2										
3										
4										
5										

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	11/18/25 1600	[signature] Pace	11/19/25 1030
2				
3				

Comments

Cooler Temperature on Receipt 3.9 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace

Ship To:
Pace Analytical Ormond Beach
8 East Tower Circle
Ormond Beach, FL 32174
Phone (386)672-5668

INTER_LABORATORY WORK ORDER # 20373461
(To be completed by sending lab)

Sending Project No	20373461
Receiving Project No	
Check Box for Consolidated Invoice	☐
Date Prepared	11/18/25
REQUESTED COMPLETION DATE:	**11/26/2025**

Sending Region	IR20-New Orleans	Sending Project Mgr	Mary Kathryn Brenner
Receiving Region	IR35-Ormand Beach	External Client	W&T Offshore/Aquasition II LLC
State of Sample Origin	AL	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Hydrogen Sulfide	BP3Z		Other	1	SI-21WET	SUB PASI WET
CO2, Specific Conductivity	BP2U		Unpreserved	1	SI-21WET0	SUB PASI WTA

Special Requirements: Report C, QC Limits (C),FR Only no EDD (0)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☒ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Sample Condition Upon Receipt Form

WO# : 35999043

PM: RJS Due Date: 11/26/25

CLIENT: PACNEW

Project #

Project Manager:

Client:

Date and Initials of person Examining contents: CAST

Verifying pH: _____

Thermometer Used T-440 Date: 11/19/25 Time: 1146 Initials: JM

State of Origin: _____

☐ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp.°C	3.3 (Visual)	+0.1 (Correction Factor)	3.4 (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #2 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #3 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #4 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #5 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #6 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Recheck for OOT °C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	Time: _____ Initials: _____

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐Other: _____

Shipping Method: ☑Standard Overnight ☐First Overnight ☐Priority Overnight ☐Ground ☐International Priority ☐Other _____

Tracking # 4874 1766 4215

Custody Seal Present: ☑Yes ☐No Seal properly placed and intact: ☑Yes ☐No

Ice: ☑Wet ☐Blue ☐Dry ☐None ☐Melted

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☑None ☐Other _____

Samples shorted to lab: ☐Yes ☐No (If yes, complete the following)

Shorted Date: _____ Shorted Time: _____

Bottle Quantity / Type: _____

Chain of Custody:	Present: ☑Yes ☐No | Filled Out: ☑Yes ☐No ☐N/A | Sampler Name: ☐Yes ☐No ☑N/A			
	Relinquished To Pace: ☑Yes ☐No ☐N/A | Sampling Date(s): ☑Yes ☐No ☐N/A | Sampling Time(s): ☑Yes ☐No ☐N/A			
Samples Arrived within Hold Time	☑Yes	☐No	☐N/A	Comments
Rush Turnaround Requested on COC	☐Yes	☑No	☐N/A	Comments
Sufficient Volume	☑Yes	☐No	☐N/A	Comments
Correct Containers Used	☑Yes	☐No	☐N/A	Comments
Containers Intact	☑Yes	☐No	☐N/A	Comments
Sample Labels Match COC (Sample ID, Date/Time of Collection)	☐Yes	☑No	☐N/A	Comments: NO sample ID on containers, matched by DI's label
All containers needing acid / base preservation have been checked	☑Yes	☐No	☐N/A	**Preservation Information**
All containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, PFAS	☐Yes	☑No	☐N/A	Preservative: _____ Date: _____ Lot / Trace: _____ Time: _____ Amount added (mL): _____ Initials: _____
~~Headspace in Volatile Vials? (>6mm)~~	☐Yes	☐No	☑N/A	
Trip Blank Present:	☐Yes	☐No	☑N/A	

Comments / Resolutions (use back for additional comments): all sulfides out of pH ≥ 7

d by: _____ Reviewed by _____

ANALYSIS OF PRODUCED LIQUIDS

NORTH CENTRAL GULF - MOBILE AREA FIELD

Marvin Rogers

To: ddethan@wtoffshore.com
Cc: Nick Tew; Rebecca Pritchett; ksullivan@wtoffshore.com; Kirk McQuillan; Butch Gregory; Elbert Patterson; Leigh Blake
Subject: W&T Produced liquids line; sampling; analysis

Mr. Dethan,
Ms. Leigh Blake and the Board's South Alabama field office received your email dated December 2, 2025, about the contents of the W&T's produced liquids line. This is to remind you and W&T Offshore that your company's analysis of the contents of the produced line is due to be included in a response to Dr. Tew's letter of August 27, 2025. We understand from your email and the attachments that there are numerous details in preparing the analysis. We request that in your written response to Dr. Tew's letter that you prepare a written summary of the contents of the produced liquids line. You may wish to review Dr. Tew's letter, particularly the section entitled *Recent leaks in produced liquids pipeline.*

Marvin Rogers

Marvin Rogers
General Counsel
Assistant Attorney General
Alabama Oil and Gas Board
205-247-3680 office
205-394-3185 cell

STATE OIL AND GAS BOARD OF ALABAMA

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

August 27, 2025

Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

RE: Deficiencies in Offshore Operations

Dear Mr. Williford:

The Board's staff has determined that W&T Offshore has various deficiencies in offshore operations. We trust you will address them in an expeditious manner.

Bottom plugs in temporarily abandoned wells—We note that you have approximately 13 wells in temporarily abandoned status. Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* requires a bottom plug on all temporarily abandoned wells. You should submit a schedule for installing these bottom plugs.

Parted casing in State Lease 615 #1 Well—As you are aware, a well with parted tubing cannot be utilized until the well is repaired. Please submit a schedule for repairing the well (or plugging the well).

Unsafe platform; State Lease 537, Tract 112 #4 Well—You should immediately rectify the unsafe platform.

Recent leaks in produced liquids pipeline—Leigh Blake, Manager of South Alabama Field Operations, has noted that W&T has had five leaks in a produced liquids pipeline since November 2024. Such leaks are required to be reported on Form OGB-27, *Notification of Fire, Spill, Leak, or Blowout*. A form has not been filed for all five leaks, and the forms are missing accurate and complete information. Furthermore, on some of the forms, the determination of the estimated volume of the leak has been omitted.

Please determine the amount of the liquid that leaked from the pipeline and obtain an analysis of the contents of the produced liquids line. We assume that the produced liquids transported through the line include saltwater, corrosion inhibitor, scale inhibitor, gas condensate, and diesel fuel as well as traces of other elements.

Recertifications of structural integrity—Rule 400-2-6-.09 (4) of the *State Oil and Gas Board Administrative Code* requires an offshore operator to recertify the structural integrity of offshore platforms every five years. W&T is overdue in submitting these recertifications.

Please address these deficiencies and supply the information requested.

Thank you for your cooperation.

Sincerely yours,

Berry H. (Nick) Tew, Jr.
State Geologist and Oil & Gas Supervisor

CC:

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

JSt

Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

December 01, 2025

Laurentiu Pirvu
W&T Offshore
6000 Deakle Road
Theodore, AL 36582

RE: Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Dear Laurentiu Pirvu:

Enclosed are the analytical results for sample(s) received by the laboratory on November 18, 2025. The results relate only to the samples included in this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - New Orleans
- Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MK Brenner

Mary Kathryn Brenner
marykathryn.brenner@pacelabs.com
251-344-9106
Project Manager

Enclosures

cc: Deepu Dethan, W&T Offshore
Rocky Folse
Doris Leach, W&T Offshore/Aquasition II LLC

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

CERTIFICATIONS

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Pace Analytical Services New Orleans
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 2000662024-10
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Texas Commission on Env. Quality (NELAC): T104704405-23-18
U.S. Dept. of Agriculture Foreign Soil Import: 525-23-117-89728

Pace Analytical Services Ormond Beach
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
California Certification# 3096
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
DoD-ANAB #:ADE-3199
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Utah FL NELAC Reciprocity
Utah
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida DOH Certification # E87948
Illinois EPA Certification # 200050
ISO/IEC 17025 (A2LA) Certification # 6154.01
Kentucky UST DEP Certification # 123059
Louisiana DEQ Certification # 04168
Minnesota DOH Certification # 055-999-334
New York DOH Certification # 12064
North Dakota DEQ Certification # R-150
ISO/IEC 17025 (A2LA) Certification # 6154.01
South Carolina DES Certification # 83006001
Texas TCEQ Certification # T104704529
USDA APHIS Foreign Soil Permit # 525-24-3-36355
U.S. Fish & Wildlife Service Permit # 51774A
Virginia VELAP Certification # 460263
Wisconsin DATCP Certification # 444
Wisconsin DNR Certification # 405132750

REPORT OF LABORATORY ANALYSIS

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

SAMPLE SUMMARY

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20373460001	**North Central Gulf**	Water	11/18/25 09:50	11/18/25 15:45

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

SAMPLE ANALYTE COUNT

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20373460001	North Central Gulf	EPA 8270E	TPO	77	PASI-G
		EPA 8260B	JRP	44	PASI-N
		EPA 1664B, 2010	TMO	1	PASI-N
		SM 2320B	JH2	1	PASI-O
		SM 2510B	TMM2	1	PASI-O
		SM 4500-H+B	SWB	1	PASI-O
		SM 4500-S2F	JJB	1	PASI-O
		SM 4500-S2H	JJB	1	PASI-O
		40CFR PART 432.2	TAE	1	PASI-N
		EPA 351.2	TAE	1	PASI-N
		SM 4500-NO3 F	JLH	1	PASI-N

PASI-G = Pace Analytical Services - Green Bay
PASI-N = Pace Analytical Services - New Orleans
PASI-O = Pace Analytical Services - Ormond Beach

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Sample: North Central Gulf **Lab ID: 20373460001** Collected: 11/18/25 09:50 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Phenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	108-95-2	D3,L2
bis(2-Chloroethyl) ether	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 18:44	111-44-4	
2-Chlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	106-46-7	
Benzyl alcohol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	100-51-6	
1,2-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	95-50-1	
2-Methylphenol(o-Cresol)	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	95-48-7	L2
3&4-Methylphenol(m&p Cresol)	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44		
N-Nitroso-di-n-propylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	621-64-7	
Hexachloroethane	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	67-72-1	
Nitrobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	98-95-3	
Isophorone	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	78-59-1	
2-Nitrophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	88-75-5	
2,4-Dimethylphenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	105-67-9	
Benzoic acid	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 18:44	65-85-0	
bis(2-Chloroethoxy)methane	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	111-91-1	
2,4-Dichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	120-82-1	
Naphthalene	**36200**	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	91-20-3	
4-Chloroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	59-50-7	
2-Methylnaphthalene	**11600**	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	91-57-6	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	77-47-4	
2,4,6-Trichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	95-95-4	
2-Chloronaphthalene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	91-58-7	
2-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	88-74-4	
Dimethylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	131-11-3	
Acenaphthylene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	606-20-2	
3-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	99-09-2	
Acenaphthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	83-32-9	
2,4-Dinitrophenol	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 18:44	51-28-5	
4-Nitrophenol	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 18:44	100-02-7	
Dibenzofuran	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	121-14-2	
Diethylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	7005-72-3	
Fluorene	**2000**	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	86-73-7	
4-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 18:44	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	101-55-3	
Hexachlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	118-74-1	

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Sample: North Central Gulf **Lab ID: 20373460001** Collected: 11/18/25 09:50 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510							
	Pace Analytical Services - Green Bay							
Pentachlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	87-86-5	
Phenanthrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	85-01-8	
Anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	120-12-7	
Di-n-butylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	84-74-2	
Fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	206-44-0	
Pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	129-00-0	
Butylbenzylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	91-94-1	
Benzo(a)anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	56-55-3	
Chrysene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	117-81-7	
Di-n-octylphthalate	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 18:44	117-84-0	CH
Benzo(b)fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	207-08-9	
Benzo(a)pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	53-70-3	
Benzo(g,h,i)perylene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	191-24-2	
Pyridine	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 18:44	110-86-1	
N-Nitrosodimethylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	62-75-9	
Carbazole	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	86-74-8	
1-Methylnaphthalene	**3410**	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	90-12-0	
Benzidine	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 18:44	92-87-5	
Biphenyl (Diphenyl)	**18700**	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	92-52-4	
Aniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 18:44	62-53-3	
Surrogates								
Nitrobenzene-d5 (S)	76	%	13-130	20	11/25/25 07:02	11/26/25 18:44	4165-60-0	
2-Fluorobiphenyl (S)	102	%	15-130	20	11/25/25 07:02	11/26/25 18:44	321-60-8	
Terphenyl-d14 (S)	102	%	50-133	20	11/25/25 07:02	11/26/25 18:44	1718-51-0	
Phenol-d6 (S)	31	%	10-130	20	11/25/25 07:02	11/26/25 18:44	13127-88-3	
2-Fluorophenol (S)	39	%	10-130	20	11/25/25 07:02	11/26/25 18:44	367-12-4	
2,4,6-Tribromophenol (S)	80	%	32-141	20	11/25/25 07:02	11/26/25 18:44	118-79-6	
8260 MSV	Analytical Method: EPA 8260B							
	Pace Analytical Services - New Orleans							
Acetone	ND	ug/L	500	50		11/20/25 17:56	67-64-1	
Benzene	**153000**	ug/L	25000	5000		11/21/25 13:14	71-43-2	D4,HS
Bromodichloromethane	ND	ug/L	250	50		11/20/25 17:56	75-27-4	
Bromoform	ND	ug/L	250	50		11/20/25 17:56	75-25-2	
Bromomethane	ND	ug/L	250	50		11/20/25 17:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	500	50		11/20/25 17:56	78-93-3	
Carbon disulfide	ND	ug/L	250	50		11/20/25 17:56	75-15-0	
Carbon tetrachloride	ND	ug/L	250	50		11/20/25 17:56	56-23-5	
Chlorobenzene	ND	ug/L	250	50		11/20/25 17:56	108-90-7	
Chloroethane	ND	ug/L	250	50		11/20/25 17:56	75-00-3	
Chloroform	ND	ug/L	250	50		11/20/25 17:56	67-66-3	

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Sample: North Central Gulf **Lab ID: 20373460001** Collected: 11/18/25 09:50 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Chloromethane	ND	ug/L	250	50		11/20/25 17:56	74-87-3	HS
Dibromochloromethane	ND	ug/L	250	50		11/20/25 17:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	250	50		11/20/25 17:56	106-93-4	
Dichlorodifluoromethane	ND	ug/L	250	50		11/20/25 17:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	250	50		11/20/25 17:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	250	50		11/20/25 17:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	250	50		11/20/25 17:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	250	50		11/20/25 17:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	250	50		11/20/25 17:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	250	50		11/20/25 17:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	250	50		11/20/25 17:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	250	50		11/20/25 17:56	10061-02-6	
Ethylbenzene	**67600**	ug/L	25000	5000		11/21/25 13:14	100-41-4	
2-Hexanone	ND	ug/L	500	50		11/20/25 17:56	591-78-6	
Isopropylbenzene (Cumene)	**25400**	ug/L	25000	5000		11/21/25 13:14	98-82-8	
Methyl acetate	ND	ug/L	500	50		11/20/25 17:56	79-20-9	
Methylene Chloride	ND	ug/L	250	50		11/20/25 17:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	500	50		11/20/25 17:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	250	50		11/20/25 17:56	1634-04-4	
Styrene	ND	ug/L	250	50		11/20/25 17:56	100-42-5	
1,1,2,2-Tetrachloroethane	**251**	ug/L	250	50		11/20/25 17:56	79-34-5	
Tetrachloroethene	ND	ug/L	250	50		11/20/25 17:56	127-18-4	
Toluene	**126000**	ug/L	25000	5000		11/21/25 13:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	250	50		11/20/25 17:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	250	50		11/20/25 17:56	79-00-5	
Trichloroethene	ND	ug/L	250	50		11/20/25 17:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	250	50		11/20/25 17:56	75-69-4	
Vinyl chloride	ND	ug/L	100	50		11/20/25 17:56	75-01-4	
m&p-Xylene	ND	ug/L	50000	5000		11/21/25 13:14	179601-23-1	
o-Xylene	**7130**	ug/L	250	50		11/20/25 17:56	95-47-6	D4
Surrogates								
Toluene-d8 (S)	100	%.	76-124	5000		11/21/25 13:14	2037-26-5	
Toluene-d8 (S)	101	%.	76-124	50		11/20/25 17:56	2037-26-5	
4-Bromofluorobenzene (S)	110	%.	78-121	50		11/20/25 17:56	460-00-4	
4-Bromofluorobenzene (S)	101	%.	78-121	5000		11/21/25 13:14	460-00-4	
Dibromofluoromethane (S)	100	%.	74-128	50		11/20/25 17:56	1868-53-7	
Dibromofluoromethane (S)	95	%.	74-128	5000		11/21/25 13:14	1868-53-7	
HEM, Oil and Grease	Analytical Method: EPA 1664B, 2010 Pace Analytical Services - New Orleans							
Oil and Grease	**335**	mg/L	7.7	1		11/24/25 12:18		P1
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Ormond Beach							
Alkalinity, Total as CaCO3	**343**	mg/L	5.0	1		11/21/25 21:54		

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Sample: North Central Gulf **Lab ID: 20373460001** Collected: 11/18/25 09:50 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B Pace Analytical Services - Ormond Beach							
Specific Conductance @ 25C	**807**	umhos/cm	2.0	1		11/26/25 00:33		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Ormond Beach							
pH at 25 Degrees C	**6.3**	Std. Units	0.10	1		11/25/25 16:24		H6
4500S2F Sulfide	Analytical Method: SM 4500-S2F Pace Analytical Services - Ormond Beach							
Sulfide	**13.4**	mg/L	0.10	1		11/25/25 10:13	18496-25-8	
4500S2H Hydrogen Sulfide	Analytical Method: SM 4500-S2H Pace Analytical Services - Ormond Beach							
Un-ionized Hydrogen Sulfide	**10.6**	mg/L	0.10	1		11/25/25 10:13		N2
Total Nitrogen Calculation	Analytical Method: 40CFR PART 432.2 Pace Analytical Services - New Orleans							
Nitrogen	**80.5**	mg/L	0.15	1		12/01/25 09:45	7727-37-9	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - New Orleans							
Nitrogen, Kjeldahl, Total	**80.5**	mg/L	3.0	20	11/24/25 11:28	11/26/25 16:43	7727-37-9	D4
4500NO3-F, NO3-NO2	Analytical Method: SM 4500-NO3 F Pace Analytical Services - New Orleans							
Nitrogen, NO2 plus NO3	ND	mg/L	5.0	100		11/20/25 15:14		D3

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 375900
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373460001

METHOD BLANK: 1825488
Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloropropane	ug/L	ND	5.0	11/20/25 15:05	
2-Butanone (MEK)	ug/L	ND	10.0	11/20/25 15:05	
2-Hexanone	ug/L	ND	10.0	11/20/25 15:05	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/20/25 15:05	
Acetone	ug/L	ND	10.0	11/20/25 15:05	
Benzene	ug/L	ND	5.0	11/20/25 15:05	
Bromodichloromethane	ug/L	ND	5.0	11/20/25 15:05	
Bromoform	ug/L	ND	5.0	11/20/25 15:05	
Bromomethane	ug/L	ND	5.0	11/20/25 15:05	
Carbon disulfide	ug/L	ND	5.0	11/20/25 15:05	
Carbon tetrachloride	ug/L	ND	5.0	11/20/25 15:05	
Chlorobenzene	ug/L	ND	5.0	11/20/25 15:05	
Chloroethane	ug/L	ND	5.0	11/20/25 15:05	
Chloroform	ug/L	ND	5.0	11/20/25 15:05	
Chloromethane	ug/L	ND	5.0	11/20/25 15:05	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Dibromochloromethane	ug/L	ND	5.0	11/20/25 15:05	
Dichlorodifluoromethane	ug/L	ND	5.0	11/20/25 15:05	
Ethylbenzene	ug/L	ND	5.0	11/20/25 15:05	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/20/25 15:05	
m&p-Xylene	ug/L	ND	10.0	11/20/25 15:05	
Methyl acetate	ug/L	ND	10.0	11/20/25 15:05	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/20/25 15:05	
Methylene Chloride	ug/L	ND	5.0	11/20/25 15:05	
o-Xylene	ug/L	ND	5.0	11/20/25 15:05	
Styrene	ug/L	ND	5.0	11/20/25 15:05	
Tetrachloroethene	ug/L	ND	5.0	11/20/25 15:05	
Toluene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Trichloroethene	ug/L	ND	5.0	11/20/25 15:05	
Trichlorofluoromethane	ug/L	ND	5.0	11/20/25 15:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	2.0	11/20/25 15:05	
4-Bromofluorobenzene (S)	%.	98	78-121	11/20/25 15:05	
Dibromofluoromethane (S)	%.	94	74-128	11/20/25 15:05	
Toluene-d8 (S)	%.	99	76-124	11/20/25 15:05	

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloropropane	ug/L	ND	5.0	11/21/25 11:59	
2-Butanone (MEK)	ug/L	ND	10.0	11/21/25 11:59	
2-Hexanone	ug/L	ND	10.0	11/21/25 11:59	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/21/25 11:59	
Acetone	ug/L	ND	10.0	11/21/25 11:59	
Benzene	ug/L	ND	5.0	11/21/25 11:59	
Bromodichloromethane	ug/L	ND	5.0	11/21/25 11:59	
Bromoform	ug/L	ND	5.0	11/21/25 11:59	
Bromomethane	ug/L	ND	5.0	11/21/25 11:59	
Carbon disulfide	ug/L	ND	5.0	11/21/25 11:59	
Carbon tetrachloride	ug/L	ND	5.0	11/21/25 11:59	
Chlorobenzene	ug/L	ND	5.0	11/21/25 11:59	
Chloroethane	ug/L	ND	5.0	11/21/25 11:59	
Chloroform	ug/L	ND	5.0	11/21/25 11:59	
Chloromethane	ug/L	ND	5.0	11/21/25 11:59	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Dibromochloromethane	ug/L	ND	5.0	11/21/25 11:59	
Dichlorodifluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Ethylbenzene	ug/L	ND	5.0	11/21/25 11:59	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/21/25 11:59	
m&p-Xylene	ug/L	ND	10.0	11/21/25 11:59	
Methyl acetate	ug/L	ND	10.0	11/21/25 11:59	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/21/25 11:59	
Methylene Chloride	ug/L	ND	5.0	11/21/25 11:59	
o-Xylene	ug/L	ND	5.0	11/21/25 11:59	
Styrene	ug/L	ND	5.0	11/21/25 11:59	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	5.0	11/21/25 11:59	
Toluene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Trichloroethene	ug/L	ND	5.0	11/21/25 11:59	
Trichlorofluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Vinyl chloride	ug/L	ND	2.0	11/21/25 11:59	
4-Bromofluorobenzene (S)	%.	101	78-121	11/21/25 11:59	
Dibromofluoromethane (S)	%.	105	74-128	11/21/25 11:59	
Toluene-d8 (S)	%.	103	76-124	11/21/25 11:59	

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	48.9	98	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	44.2	88	65-129	
1,1,2-Trichloroethane	ug/L	50	47.3	95	75-121	
1,1-Dichloroethane	ug/L	50	44.8	90	71-127	
1,1-Dichloroethene	ug/L	50	47.9	96	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	75-125	
1,2-Dichloroethane	ug/L	50	47.4	95	65-131	
1,2-Dichloropropane	ug/L	50	45.7	91	72-125	
2-Butanone (MEK)	ug/L	50	40.8	82	34-170	
2-Hexanone	ug/L	50	45.2	90	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.9	90	58-141	
Acetone	ug/L	50	38.3	77	16-192	
Benzene	ug/L	50	44.8	90	74-132	
Bromodichloromethane	ug/L	50	49.9	100	73-117	
Bromoform	ug/L	50	50.8	102	58-132	
Bromomethane	ug/L	50	45.1	90	47-157	
Carbon disulfide	ug/L	50	45.0	90	52-145	
Carbon tetrachloride	ug/L	50	49.6	99	68-129	
Chlorobenzene	ug/L	50	50.6	101	79-121	
Chloroethane	ug/L	50	44.6	89	34-160	
Chloroform	ug/L	50	46.0	92	70-120	
Chloromethane	ug/L	50	39.8	80	44-142	
cis-1,2-Dichloroethene	ug/L	50	46.1	92	71-124	
cis-1,3-Dichloropropene	ug/L	50	48.3	97	77-121	
Dibromochloromethane	ug/L	50	49.5	99	67-122	
Dichlorodifluoromethane	ug/L	50	42.8	86	28-148	
Ethylbenzene	ug/L	50	50.6	101	79-116	
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	100	100	78-119	
Methyl acetate	ug/L	50	43.3	87	47-155	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	44.5	89	58-135	
Methylene Chloride	ug/L	50	44.6	89	49-145	
o-Xylene	ug/L	50	50.8	102	77-121	
Styrene	ug/L	50	50.0	100	81-123	
Tetrachloroethene	ug/L	50	52.4	105	62-138	
Toluene	ug/L	50	48.8	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.3	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	49.0	98	77-121	
Trichloroethene	ug/L	50	48.2	96	77-117	
Trichlorofluoromethane	ug/L	50	49.2	98	45-164	
Vinyl chloride	ug/L	50	44.9	90	48-130	
4-Bromofluorobenzene (S)	%.			102	78-121	
Dibromofluoromethane (S)	%.			93	74-128	
Toluene-d8 (S)	%.			99	76-124	

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.3	99	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	57.2	114	65-129	
1,1,2-Trichloroethane	ug/L	50	52.3	105	75-121	
1,1-Dichloroethane	ug/L	50	47.9	96	71-127	
1,1-Dichloroethene	ug/L	50	46.5	93	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.7	105	75-125	
1,2-Dichloroethane	ug/L	50	48.9	98	65-131	
1,2-Dichloropropane	ug/L	50	50.4	101	72-125	
2-Butanone (MEK)	ug/L	50	52.1	104	34-170	
2-Hexanone	ug/L	50	58.5	117	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	52.2	104	58-141	
Acetone	ug/L	50	43.1	86	16-192	
Benzene	ug/L	50	46.5	93	74-132	
Bromodichloromethane	ug/L	50	52.4	105	73-117	
Bromoform	ug/L	50	41.7	83	58-132	
Bromomethane	ug/L	50	57.6	115	47-157	
Carbon disulfide	ug/L	50	46.5	93	52-145	
Carbon tetrachloride	ug/L	50	47.8	96	68-129	
Chlorobenzene	ug/L	50	48.2	96	79-121	
Chloroethane	ug/L	50	47.7	95	34-160	
Chloroform	ug/L	50	47.2	94	70-120	
Chloromethane	ug/L	50	36.9	74	44-142	
cis-1,2-Dichloroethene	ug/L	50	45.6	91	71-124	
cis-1,3-Dichloropropene	ug/L	50	52.3	105	77-121	
Dibromochloromethane	ug/L	50	48.3	97	67-122	
Dichlorodifluoromethane	ug/L	50	46.9	94	28-148	
Ethylbenzene	ug/L	50	48.6	97	79-116	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	97.4	97	78-119	
Methyl acetate	ug/L	50	53.6	107	47-155	
Methyl-tert-butyl ether	ug/L	50	48.7	97	58-135	
Methylene Chloride	ug/L	50	45.5	91	49-145	
o-Xylene	ug/L	50	48.0	96	77-121	
Styrene	ug/L	50	48.0	96	81-123	
Tetrachloroethene	ug/L	50	48.2	96	62-138	
Toluene	ug/L	50	48.9	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.7	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	54.1	108	77-121	
Trichloroethene	ug/L	50	47.6	95	77-117	
Trichlorofluoromethane	ug/L	50	62.6	125	45-164	
Vinyl chloride	ug/L	50	54.8	110	48-130	
4-Bromofluorobenzene (S)	%.			99	78-121	
Dibromofluoromethane (S)	%.			99	74-128	
Toluene-d8 (S)	%.			101	76-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	45.9	45.5	92	91	73-141	1	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.7	41.8	85	84	48-148	2	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	46.2	45.7	92	91	46-154	1	20	
1,1-Dichloroethane	ug/L	ND	50	50	40.8	40.5	82	81	63-145	1	20	
1,1-Dichloroethene	ug/L	ND	50	50	40.4	42.0	81	84	28-176	4	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.7	46.8	95	94	69-134	2	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.3	45.1	93	90	51-147	2	20	
1,2-Dichloropropane	ug/L	ND	50	50	43.2	42.8	86	86	64-140	1	20	
2-Butanone (MEK)	ug/L	ND	50	50	26.6	25.4	53	51	10-200	5	20	
2-Hexanone	ug/L	ND	50	50	36.8	35.1	74	70	40-157	5	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	42.0	41.5	84	83	36-165	1	20	
Acetone	ug/L	ND	50	50	16.1	17.3	32	35	10-200	7	20	
Benzene	ug/L	ND	50	50	42.8	42.7	86	85	29-186	0	20	
Bromodichloromethane	ug/L	ND	50	50	49.2	48.6	98	97	58-139	1	20	
Bromoform	ug/L	ND	50	50	50.7	49.7	101	99	57-135	2	20	
Bromomethane	ug/L	ND	50	50	46.5	52.4	93	105	42-168	12	20	
Carbon disulfide	ug/L	ND	50	50	37.0	39.1	74	78	44-170	6	20	
Carbon tetrachloride	ug/L	ND	50	50	48.2	48.0	96	96	45-162	0	20	
Chlorobenzene	ug/L	ND	50	50	47.7	47.8	95	96	71-135	0	20	
Chloroethane	ug/L	ND	50	50	44.1	47.7	88	95	32-175	8	20	
Chloroform	ug/L	ND	50	50	44.2	43.9	88	88	61-136	1	20	
Chloromethane	ug/L	ND	50	50	41.9	45.8	84	92	38-154	9	20	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
cis-1,2-Dichloroethene	ug/L	ND	50	50	43.2	43.9	86	88	44-160	2	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	45.8	45.3	92	91	47-153	1	20	
Dibromochloromethane	ug/L	ND	50	50	49.9	49.3	100	99	64-130	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	56.5	62.6	113	125	22-160	10	20	
Ethylbenzene	ug/L	ND	50	50	48.4	47.5	97	95	51-153	2	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	43.5	43.7	87	87	68-145	0	20	
m&p-Xylene	ug/L	ND	100	100	94.8	96.1	95	96	30-173	1	20	
Methyl acetate	ug/L	ND	50	50	42.8	37.4	86	75	20-173	13	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	41.0	40.1	82	80	36-160	2	20	
Methylene Chloride	ug/L	ND	50	50	40.4	40.3	81	81	56-140	0	20	
o-Xylene	ug/L	ND	50	50	48.3	48.7	97	97	10-197	1	20	
Styrene	ug/L	ND	50	50	46.3	47.1	93	94	37-163	2	20	
Tetrachloroethene	ug/L	ND	50	50	47.6	48.6	95	97	18-193	2	20	
Toluene	ug/L	ND	50	50	45.6	45.8	91	92	33-175	0	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	40.7	40.9	81	82	63-140	0	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	45.9	46.4	92	93	47-153	1	20	
Trichloroethene	ug/L	ND	50	50	44.6	44.2	89	88	24-181	1	20	
Trichlorofluoromethane	ug/L	ND	50	50	45.9	50.7	92	101	37-182	10	20	
Vinyl chloride	ug/L	ND	50	50	44.1	46.8	88	94	19-169	6	20	
4-Bromofluorobenzene (S)	%.						103	102	78-121			
Dibromofluoromethane (S)	%.						93	92	74-128			
Toluene-d8 (S)	%.						99	99	76-124			

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 523097
QC Batch Method: EPA 3510
Analysis Method: EPA 8270E
Analysis Description: 8270E Water MSSV Low Volume
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 20373460001

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,2-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,3-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,4-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2,4,5-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4,6-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dimethylphenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dinitrophenol	ug/L	ND	50.0	11/26/25 13:40	
2,4-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2,6-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2-Chloronaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Chlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Methylphenol(o-Cresol)	ug/L	ND	5.0	11/26/25 13:40	
2-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
2-Nitrophenol	ug/L	ND	5.0	11/26/25 13:40	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	5.0	11/26/25 13:40	
3,3'-Dichlorobenzidine	ug/L	ND	5.0	11/26/25 13:40	
3-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4,6-Dinitro-2-methylphenol	ug/L	ND	10.0	11/26/25 13:40	
4-Bromophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Chloro-3-methylphenol	ug/L	ND	5.0	11/26/25 13:40	
4-Chloroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Nitrophenol	ug/L	ND	10.0	11/26/25 13:40	
Acenaphthene	ug/L	ND	5.0	11/26/25 13:40	
Acenaphthylene	ug/L	ND	5.0	11/26/25 13:40	
Aniline	ug/L	ND	5.0	11/26/25 13:40	
Anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzidine	ug/L	ND	50.0	11/26/25 13:40	
Benzo(a)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(a)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(b)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(g,h,i)perylene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(k)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzoic acid	ug/L	ND	50.0	11/26/25 13:40	
Benzyl alcohol	ug/L	ND	5.0	11/26/25 13:40	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethoxy)methane	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	11/26/25 13:40	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	11/26/25 13:40	
Butylbenzylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Carbazole	ug/L	ND	5.0	11/26/25 13:40	
Chrysene	ug/L	ND	5.0	11/26/25 13:40	
Di-n-butylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Di-n-octylphthalate	ug/L	ND	10.0	11/26/25 13:40	CH
Dibenz(a,h)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Dibenzofuran	ug/L	ND	5.0	11/26/25 13:40	
Diethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Dimethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Fluorene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorocyclopentadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloroethane	ug/L	ND	5.0	11/26/25 13:40	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Isophorone	ug/L	ND	5.0	11/26/25 13:40	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodimethylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodiphenylamine	ug/L	ND	5.0	11/26/25 13:40	
Naphthalene	ug/L	ND	5.0	11/26/25 13:40	
Nitrobenzene	ug/L	ND	5.0	11/26/25 13:40	
Pentachlorophenol	ug/L	ND	5.0	11/26/25 13:40	
Phenanthrene	ug/L	ND	5.0	11/26/25 13:40	
Phenol	ug/L	ND	5.0	11/26/25 13:40	
Pyrene	ug/L	ND	5.0	11/26/25 13:40	
Pyridine	ug/L	ND	10.0	11/26/25 13:40	
2,4,6-Tribromophenol (S)	%	64	32-141	11/26/25 13:40	
2-Fluorobiphenyl (S)	%	39	15-130	11/26/25 13:40	
2-Fluorophenol (S)	%	26	10-130	11/26/25 13:40	
Nitrobenzene-d5 (S)	%	55	13-130	11/26/25 13:40	
Phenol-d6 (S)	%	15	10-130	11/26/25 13:40	
Terphenyl-d14 (S)	%	83	50-133	11/26/25 13:40	

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	24.7	49	37-130	
1,2-Dichlorobenzene	ug/L	50	25.7	51	39-130	
1,3-Dichlorobenzene	ug/L	50	24.4	49	34-130	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	24.0	48	36-130	
1-Methylnaphthalene	ug/L	50	24.3	49	45-130	
2,4,5-Trichlorophenol	ug/L	50	34.3	69	55-130	
2,4,6-Trichlorophenol	ug/L	50	34.4	69	59-130	
2,4-Dichlorophenol	ug/L	50	29.7	59	55-130	
2,4-Dimethylphenol	ug/L	50	32.5	65	47-130	
2,4-Dinitrophenol	ug/L	50	20.8J	42	10-131	
2,4-Dinitrotoluene	ug/L	50	37.6	75	69-130	
2,6-Dinitrotoluene	ug/L	50	38.2	76	61-130	
2-Chloronaphthalene	ug/L	50	27.6	55	48-130	
2-Chlorophenol	ug/L	50	27.7	55	52-130	
2-Methylnaphthalene	ug/L	50	23.0	46	41-130	
2-Methylphenol(o-Cresol)	ug/L	50	22.2	44	47-130	L2
2-Nitroaniline	ug/L	50	38.4	77	62-143	
2-Nitrophenol	ug/L	50	28.7	57	53-130	
3&4-Methylphenol(m&p Cresol)	ug/L	50	22.9	46	42-130	
3,3'-Dichlorobenzidine	ug/L	50	26.4	53	26-130	
3-Nitroaniline	ug/L	50	39.9	80	58-148	
4,6-Dinitro-2-methylphenol	ug/L	50	27.9	56	37-130	
4-Bromophenylphenyl ether	ug/L	50	32.2	64	55-130	
4-Chloro-3-methylphenol	ug/L	50	31.5	63	52-130	
4-Chloroaniline	ug/L	50	34.0	68	44-149	
4-Chlorophenylphenyl ether	ug/L	50	36.8	74	57-130	
4-Nitroaniline	ug/L	50	39.3	79	42-153	
4-Nitrophenol	ug/L	50	10.5	21	11-130	
Acenaphthene	ug/L	50	30.5	61	49-130	
Acenaphthylene	ug/L	50	32.0	64	53-130	
Aniline	ug/L	50	24.0	48	10-185	
Anthracene	ug/L	50	40.0	80	66-131	
Benzidine	ug/L		ND			
Benzo(a)anthracene	ug/L	50	41.2	82	69-130	
Benzo(a)pyrene	ug/L	50	40.5	81	68-130	
Benzo(b)fluoranthene	ug/L	50	42.2	84	68-130	
Benzo(g,h,i)perylene	ug/L	50	42.1	84	65-130	
Benzo(k)fluoranthene	ug/L	50	42.2	84	70-130	
Benzoic acid	ug/L	50	ND	20	14-130	
Benzyl alcohol	ug/L	50	25.4	51	46-130	
Biphenyl (Diphenyl)	ug/L		ND			
bis(2-Chloroethoxy)methane	ug/L	50	32.1	64	55-130	
bis(2-Chloroethyl) ether	ug/L	50	31.5	63	54-130	
bis(2-Ethylhexyl)phthalate	ug/L	50	40.5	81	66-130	
Butylbenzylphthalate	ug/L	50	41.4	83	66-130	
Carbazole	ug/L	50	42.7	85	63-156	
Chrysene	ug/L	50	43.5	87	70-130	
Di-n-butylphthalate	ug/L	50	41.3	83	64-130	
Di-n-octylphthalate	ug/L	50	37.7	75	53-130	CH
Dibenz(a,h)anthracene	ug/L	50	36.5	73	58-130	

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibenzofuran	ug/L	50	34.4	69	58-130	
Diethylphthalate	ug/L	50	42.8	86	70-130	
Dimethylphthalate	ug/L	50	40.9	82	67-130	
Fluoranthene	ug/L	50	40.9	82	65-131	
Fluorene	ug/L	50	37.0	74	58-130	
Hexachloro-1,3-butadiene	ug/L	50	21.5	43	26-130	
Hexachlorobenzene	ug/L	50	34.3	69	61-130	
Hexachlorocyclopentadiene	ug/L	50	16.3	33	15-130	
Hexachloroethane	ug/L	50	22.6	45	29-130	
Indeno(1,2,3-cd)pyrene	ug/L	50	31.2	62	48-130	
Isophorone	ug/L	50	32.1	64	55-130	
N-Nitroso-di-n-propylamine	ug/L	50	30.2	60	53-130	
N-Nitrosodimethylamine	ug/L	50	15.9	32	32-130	
N-Nitrosodiphenylamine	ug/L	50	34.3	69	63-130	
Naphthalene	ug/L	50	26.6	53	49-130	
Nitrobenzene	ug/L	50	34.5	69	63-130	
Pentachlorophenol	ug/L	50	32.5	65	53-130	
Phenanthrene	ug/L	50	39.9	80	63-139	
Phenol	ug/L	50	11.0	22	23-130	L2
Pyrene	ug/L	50	44.9	90	70-130	
Pyridine	ug/L	50	9.4J	19	10-130	
2,4,6-Tribromophenol (S)	%			77	32-141	
2-Fluorobiphenyl (S)	%			53	15-130	
2-Fluorophenol (S)	%			30	10-130	
Nitrobenzene-d5 (S)	%			62	13-130	
Phenol-d6 (S)	%			20	10-130	
Terphenyl-d14 (S)	%			86	50-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/L	<0.0024 mg/L	50	50	28.8	27.8	58	56	26-130	4	36	
1,2-Dichlorobenzene	ug/L	<0.0020 mg/L	50	50	30.3	29.2	61	58	26-130	4	33	
1,3-Dichlorobenzene	ug/L	<0.0022 mg/L	50	50	27.0	28.0	54	56	23-130	4	40	
1,4-Dichlorobenzene	ug/L	<0.0018 mg/L	50	50	28.5	27.6	57	55	22-130	3	39	
1-Methylnaphthalene	ug/L	<0.0014 mg/L	50	50	30.2	30.2	60	60	32-130	0	22	
2,4,5-Trichlorophenol	ug/L	<0.0018 mg/L	50	50	35.4	38.5	71	77	10-131	8	50	
2,4,6-Trichlorophenol	ug/L	<0.0020 mg/L	50	50	37.7	36.6	75	73	10-130	3	50	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dichlorophenol	ug/L	<0.0015 mg/L	50	50	35.1	32.8	70	66	19-130	7	45	
2,4-Dimethylphenol	ug/L	<0.0013 mg/L	50	50	31.4	37.9	63	76	44-130	19	21	
2,4-Dinitrophenol	ug/L	<0.012 mg/L	50	50	28J	27.1J	56	54	10-200		29	
2,4-Dinitrotoluene	ug/L	<0.0012 mg/L	50	50	41.9	41.2	84	82	48-130	2	20	
2,6-Dinitrotoluene	ug/L	<0.00085 mg/L	50	50	40.4	40.2	81	80	37-130	1	21	
2-Chloronaphthalene	ug/L	<0.0012 mg/L	50	50	32.9	33.4	66	67	32-130	2	25	
2-Chlorophenol	ug/L	<0.0026 mg/L	50	50	30.5	31.0	61	62	21-130	2	38	
2-Methylnaphthalene	ug/L	<0.0015 mg/L	50	50	30.8	30.5	62	61	28-130	1	23	
2-Methylphenol(o-Cresol)	ug/L	<0.00077 mg/L	50	50	26.4	26.5	53	53	36-130	1	32	
2-Nitroaniline	ug/L	<0.0026 mg/L	50	50	43.9	46.0	88	92	11-158	5	20	
2-Nitrophenol	ug/L	<0.0015 mg/L	50	50	34.7	33.4	69	67	14-130	4	41	
3&4-Methylphenol(m&p Cresol)	ug/L	<0.0018 mg/L	50	50	25.5	26.6	51	53	20-130	4	38	
3,3'-Dichlorobenzidine	ug/L	<0.0015 mg/L	50	50	21.4	21.3	43	43	10-130	0	28	
3-Nitroaniline	ug/L	<0.0018 mg/L	50	50	40.0	41.8	80	84	17-155	4	27	
4,6-Dinitro-2-methylphenol	ug/L	<0.0012 mg/L	50	50	33.6	30.9	67	62	10-137	8	34	
4-Bromophenylphenyl ether	ug/L	<0.0018 mg/L	50	50	38.6	38.2	77	76	42-145	1	21	
4-Chloro-3-methylphenol	ug/L	<0.00094 mg/L	50	50	34.4	34.3	69	69	43-130	0	20	
4-Chloroaniline	ug/L	<0.0025 mg/L	50	50	35.5	33.8	71	68	19-154	5	22	
4-Chlorophenylphenyl ether	ug/L	<0.0020 mg/L	50	50	40.8	38.4	82	77	43-147	6	20	
4-Nitroaniline	ug/L	<0.0024 mg/L	50	50	42.5	35.0	85	70	10-159	19	36	
4-Nitrophenol	ug/L	<0.0083 mg/L	50	50	13.5	13.1	27	26	10-130	3	36	
Acenaphthene	ug/L	<0.0015 mg/L	50	50	35.8	34.9	72	70	32-132	3	21	
Acenaphthylene	ug/L	<0.0013 mg/L	50	50	38.5	37.2	77	74	37-131	3	20	
Aniline	ug/L	<0.0026 mg/L	50	50	26.8	25.4	54	51	16-149	5	28	
Anthracene	ug/L	<0.0017 mg/L	50	50	43.2	42.4	86	85	43-136	2	20	
Benzo(a)anthracene	ug/L	<0.0012 mg/L	50	50	41.9	41.5	84	83	47-130	1	20	
Benzo(a)pyrene	ug/L	<0.0013 mg/L	50	50	43.4	43.3	87	87	36-130	0	20	

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Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzo(b)fluoranthene	ug/L	<0.0014 mg/L	50	50	42.6	41.1	85	82	41-130	4	20	
Benzo(g,h,i)perylene	ug/L	<0.0017 mg/L	50	50	43.4	43.6	87	87	41-131	0	20	
Benzo(k)fluoranthene	ug/L	<0.0014 mg/L	50	50	43.2	43.0	86	86	45-131	0	20	
Benzoic acid	ug/L	<0.019 mg/L	50	50	ND	ND	14	16	10-130		20	
Benzyl alcohol	ug/L	<0.0032 mg/L	50	50	30.8	30.5	62	61	46-130	1	21	
bis(2-Chloroethoxy)methane	ug/L	<0.0011 mg/L	50	50	38.4	36.7	77	73	40-130	4	20	
bis(2-Chloroethyl) ether	ug/L	<0.0062 mg/L	50	50	33.8	34.6	68	69	32-134	3	20	
bis(2-Ethylhexyl)phthalate	ug/L	<0.0021 mg/L	50	50	46.4	45.1	93	90	34-130	3	20	
Butylbenzylphthalate	ug/L	<0.0037 mg/L	50	50	46.1	41.8	92	84	39-130	10	20	
Carbazole	ug/L	<0.0011 mg/L	50	50	46.5	44.6	93	89	45-154	4	20	
Chrysene	ug/L	<0.0018 mg/L	50	50	44.8	43.2	90	86	53-135	4	20	
Di-n-butylphthalate	ug/L	<0.0012 mg/L	50	50	44.7	44.6	89	89	41-130	0	20	
Di-n-octylphthalate	ug/L	<0.0046 mg/L	50	50	45.3	45.5	91	91	24-130	0	20	CH
Dibenz(a,h)anthracene	ug/L	<0.0023 mg/L	50	50	41.1	37.1	82	74	36-130	10	20	
Dibenzofuran	ug/L	<0.00093 mg/L	50	50	40.2	39.7	80	79	47-140	1	20	
Diethylphthalate	ug/L	<0.0012 mg/L	50	50	44.5	43.1	89	86	48-130	3	20	
Dimethylphthalate	ug/L	<0.0013 mg/L	50	50	41.7	40.7	83	81	44-130	2	20	
Fluoranthene	ug/L	<0.0016 mg/L	50	50	43.1	41.0	86	82	47-131	5	20	
Fluorene	ug/L	<0.0014 mg/L	50	50	41.5	40.0	83	80	43-135	4	20	
Hexachloro-1,3-butadiene	ug/L	<0.0025 mg/L	50	50	26.3	25.9	53	52	10-130	2	50	
Hexachlorobenzene	ug/L	<0.0016 mg/L	50	50	39.0	37.9	78	76	51-142	3	20	
Hexachlorocyclopentadiene	ug/L	<0.0019 mg/L	50	50	17.0	17.6	34	35	10-130	3	50	
Hexachloroethane	ug/L	<0.0015 mg/L	50	50	27.7	26.3	55	53	10-130	5	50	
Indeno(1,2,3-cd)pyrene	ug/L	<0.0018 mg/L	50	50	36.5	34.2	73	68	30-130	6	20	
Isophorone	ug/L	<0.00098 mg/L	50	50	36.3	35.4	73	71	50-130	3	20	
N-Nitroso-di-n-propylamine	ug/L	<0.00082 mg/L	50	50	36.1	34.7	72	69	35-130	4	30	
N-Nitrosodimethylamine	ug/L	<0.0015 mg/L	50	50	16.0	17.9	32	36	10-130	11	31	

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4320 Midmost Dr
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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
N-Nitrosodiphenylamine	ug/L	<0.00041 mg/L	50	50	41.9	42.2	84	84	57-130	1	20	
Naphthalene	ug/L	<0.0017 mg/L	50	50	32.1	30.8	63	61	34-130	4	20	
Nitrobenzene	ug/L	<0.0016 mg/L	50	50	39.8	38.6	80	77	50-132	3	23	
Pentachlorophenol	ug/L	<0.0016 mg/L	50	50	37.1	35.7	74	71	10-137	4	45	
Phenanthrene	ug/L	<0.0011 mg/L	50	50	43.0	41.5	86	83	48-142	4	20	
Phenol	ug/L	<0.00098 mg/L	50	50	12.4	12.1	25	24	10-130	2	36	1b
Pyrene	ug/L	<0.00098 mg/L	50	50	44.3	39.3	89	79	48-134	12	20	
Pyridine	ug/L	<0.0018 mg/L	50	50	17.5	11.4	35	23	17-130	42	50	
2,4,6-Tribromophenol (S)	%						75	74	32-141			
2-Fluorobiphenyl (S)	%						61	59	15-130			
2-Fluorophenol (S)	%						31	30	10-130			
Nitrobenzene-d5 (S)	%						70	68	13-130			
Phenol-d6 (S)	%						23	23	10-130			
Terphenyl-d14 (S)	%						83	74	50-133			

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 376090
QC Batch Method: EPA 1664B, 2010
Analysis Method: EPA 1664B, 2010
Analysis Description: 1664 HEM, Oil and Grease
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373460001

METHOD BLANK: 1826560 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	11/24/25 12:18	

LABORATORY CONTROL SAMPLE: 1826561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	34.4	86	78-114	

MATRIX SPIKE SAMPLE: 1826562

Parameter	Units	20373385002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	33.7	80	78-114	

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QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 1146753
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 20373460001

METHOD BLANK: 6286819 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	11/21/25 16:46	

LABORATORY CONTROL SAMPLE: 6286820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	250	232	93	90-110	

SAMPLE DUPLICATE: 6286821

Parameter	Units	35999249036 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	24.4	24.2	1	20	

SAMPLE DUPLICATE: 6286822

Parameter	Units	35998953002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	244	244	0	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 1147868
QC Batch Method: SM 2510B
Analysis Method: SM 2510B
Analysis Description: 2510B Specific Conductance
Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 20373460001

METHOD BLANK: 6292432 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance @ 25C	umhos/cm	ND	2.0	11/26/25 00:15	

LABORATORY CONTROL SAMPLE: 6292433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance @ 25C	umhos/cm	1410	1410	100	95-105	

SAMPLE DUPLICATE: 6292434

Parameter	Units	35998195010 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance @ 25C	umhos/cm	2370	2400	1	20	

SAMPLE DUPLICATE: 6292435

Parameter	Units	35998476008 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance @ 25C	umhos/cm	296	297	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 1147576
QC Batch Method: SM 4500-S2F
Analysis Method: SM 4500-S2F
Analysis Description: 4500S2F Sulfide
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 20373460001

METHOD BLANK: 6290584 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	11/25/25 09:32	

LABORATORY CONTROL SAMPLE & LCSD: 6290585 6290586

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	6	5.8	5.8	96	96	80-120	0	20	

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Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 376100
QC Batch Method: EPA 351.2
Analysis Method: EPA 351.2
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373460001

METHOD BLANK: 1826586 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.15	11/26/25 15:08	

LABORATORY CONTROL SAMPLE: 1826587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	6.6	6.5	100	90-110	

MATRIX SPIKE SAMPLE: 1826589

Parameter	Units	20372419001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	2.5	166	242	75-125	M1

SAMPLE DUPLICATE: 1826588

Parameter	Units	20372419001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	164	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

QC Batch: 375770
QC Batch Method: SM 4500-NO3 F
Analysis Method: SM 4500-NO3 F
Analysis Description: SM4500NO3-F, Nitrate, Preserved
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373460001

METHOD BLANK: 1824783 Matrix: Water
Associated Lab Samples: 20373460001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.050	11/20/25 15:09	

LABORATORY CONTROL SAMPLE: 1824784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	6	5.6	93	90-110	

MATRIX SPIKE SAMPLE: 1824786

Parameter	Units	20373411001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	1	1.1	93	80-120	

SAMPLE DUPLICATE: 1824785

Parameter	Units	20373411001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	0.15	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALIFIERS

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

ANALYTE QUALIFIERS

1b	This sample was sub-sampled from an AG1 for a 100 mL extraction.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P1	Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Produced Liquids - North Centr
Pace Project No.: 20373460

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20373460001	North Central Gulf	EPA 3510	523097	EPA 8270E	523163
20373460001	North Central Gulf	EPA 8260B	375900		
20373460001	North Central Gulf	EPA 1664B, 2010	376090		
20373460001	North Central Gulf	SM 2320B	1146753		
20373460001	North Central Gulf	SM 2510B	1147868		
20373460001	North Central Gulf	SM 4500-H+B	1147808		
20373460001	North Central Gulf	SM 4500-S2F	1147576		
20373460001	North Central Gulf	SM 4500-S2H	1148077		
20373460001	North Central Gulf	40CFR PART 432.2	376483		
20373460001	North Central Gulf	EPA 351.2	376100	EPA 351.2	376361
20373460001	North Central Gulf	SM 4500-NO3 F	375770		

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Pace® Location Requested (City/State):
Pace Analytical Mobile
4320 Midmost Dr, Mobile, AL 36609

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO# : 20373460

20373460

Company Name:	W&T Offshore/Aquasition II LLC	Contact/Report To:	Laurentiu Pirvu
Street Address:	6000 Deakle Road Theodore, AL 36582	Phone #:	(251)973-4627
		E-Mail:	lpirvu@wtoffshore.com
		Cc E-Mail:	
Customer Project #:			
Project Name:	Produced Liquids - North Central Gulf	Invoice To:	Invoice Aquasition II
		Invoice E-Mail:	apinv@wtoffshore.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	380000-353248
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Alabama

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	8260 MSV	8270 w/PAH	CO2	HEM, Oil and Grease	Hydrogen Sulfide	TKN, NO2+NO3, TN	Sample Comment
North Central Gulf					11/18/25	900										

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: 1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Mary Kathryn Brenner
AcctNum / Client ID:
Table #:
Profile / Template: 17643
Prelog / Bottle Ord. ID: EZ 3322745

Preservation non-conformance identified for sample:

Additional Instructions from Pace®:

Collected By:
(Printed Name) Chase Williams
Signature: Chase Williams

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	M0fill4	0	15.2	15.2	

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	Tracking Number:
WT OFFSHORE	11-18-25 3:43 pm			
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	Delivered by: [ ] In-Person [ ] Courier
			11/18/25 1546	
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace Analytical

Sample Condition Upon Receipt

WO# : 20373460

PM: MKB Due Date: 11/26/25

CLIENT: MO-WT

4320 Midmost Dr. Mobile, AL 36609

Project #:

Courier: ☐ Pace ☒ Client ☐ FedEx ☐ UPS ☐ Other Tracking # _____

Custody Seal on Cooler/Box Present: [see COC] Custody Seals intact: ☐Yes ☐No

Thermometer Used: ☐ Therm Fisher IR 001 ☒ Other: MOTM21

Type of Ice: (Wet) Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Date and Initials of person examining contents: EK 11/18/25

Temp must be measured from temperature blank when present

				Comments:
Temperature Blank Present:	☐Yes	☒No	☐N/A	1
Chain of Custody Present:	☒Yes	☐No	☐N/A	2
Chain of Custody Complete:	☒Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	4
Sampler Name on COC:	☒Yes	☐No	☐N/A	5
Short Hold Time Analyses (<72 hr):	☐Yes	☒No	☐N/A	6
Rush Turn Around Requested:	☐Yes	☒No	☐N/A	7
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	8
Sufficient Volume:	☒Yes	☐No	☐N/A	9
Correct Containers Used:	☒Yes	☐No	☐N/A	10
Filtered vol. Rec. for Diss. tests	☐Yes	☐No	☒N/A	11
Sample Labels match COC:	☒Yes	☐No	☐N/A	12
All containers received within manufacturer's precautionary and/or expiration dates:	☒Yes	☐No	☐N/A	13
All containers needing chemical preservation have been checked (except VOA, micro, & O&G):	☐Yes	☐No	☒N/A	14
All containers preservation checked found to be in compliance with EPA recommendation:	☐Yes	☐No	☒N/A	15 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	☐Yes	☒No	☐N/A	16 EK 11/18/25
Trip Blank Present:	☐Yes	☒No		17

Client Notification/Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

F-NO-C-003-rev.10 16Feb2018 Mobile SCUR Form.xlsx

Internal Transfer Chain of Custody

WO# : 35999037

35999037

☐ Rush Multiplier____X

☒ Samples Pre-Logged into eCOC

State Of Origin: AL

Cert. Needed: ☒

Workorder: 20373460 **Workorder Name:** Produced Liquids - North Centr **Owner Received Date:** 11/18/2025 **Results Requested By:** 11/26/2025

Report To	Subcontract To
Mary Kathryn Brenner Pace Analytical Mobile Labs 4320 Midmost Dr Mobile, AL 36609 USA Phone 251-344-9106	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved					Requested Analysis: 6027 Specific Conductivity	Requested Analysis: Hydrogen Sulfide											LAB USE ONLY
1	North Central Culf	PS	11/18/2025 09:50	20373460001	Water	1	1					X	X											
2																								
3																								
4																								
5																								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	11/18/25	Pace	11/19/25 1030
2				
3				

Comments

Cooler Temperature on Receipt 3.9 °C **Custody Seal** (Y) or N **Received on Ice** (Y) or N **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

INTER_LABORATORY WORK ORDER # 20373460

(To be completed by sending lab)

Ship To:
Pace Analytical Ormond Beach
8 East Tower Circle
Ormond Beach, FL 32174
Phone (386)672-5668

Sending Project No	20373460
Receiving Project No	
Check Box for Consolidated Invoice	☐
Date Prepared	11/18/25
REQUESTED COMPLETION DATE	**11/26/2025**

Sending Region	IR20-New Orleans	Sending Project Mgr.	Mary Kathryn Brenner
Receiving Region	IR35-Ormand Beach	External Client	W&T Offshore/Aquasition II LLC
State of Sample Origin	AL	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
Hydrogen Sulfide	BP3Z		Other	1	SI-21WET	SUB PASI WET
CO2/ Specific Conductivity	BP2U		Unpreserved	1	SI-21WET0	SUB PASI WTA

Special Requirements: Report C, QC Limits (C),FR Only no EDD (0)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☒ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.

When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

DOC#_Title: ENV-FRM-[illegible]_v[illegible] Sample Condition Upon Receipt Form

WO#: 35999037
PM: RJS **Due Date: 11/26/25**
CLIENT: PACNEW

Project #
Project Manager:
Client:

Date and Initials of person:
Examining contents: CAST
Verifying pH: _____

Thermometer Used: T-440 Date: 11/19/25 Time: 1146 Initials: JM

State of Origin: _____ ☐ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp.°C	3.3 (Visual)	+0.1 (Correction Factor)	3.4 (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #2 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #3 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #4 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #5 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Cooler #6 Temp.°C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	☐Samples collected sameday, on ice cooling has begun
Recheck for OOT °C	_____ (Visual)	_____ (Correction Factor)	_____ (Actual)	Time: _____ Initials: _____

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐Other: _____

Shipping Method: ☑Standard Overnight ☐First Overnight ☐Priority Overnight ☐Ground ☐International Priority ☐Other _____

Tracking # 4874 1766 4215

Custody Seal Present: ☑Yes ☐No Seal properly placed and intact: ☑Yes ☐No Ice: ☑Wet ☐Blue ☐Dry ☐None ☐Melted

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☑None ☐Other:

Samples shorted to lab: ☐Yes ☐No (If yes, complete the following)
Shorted Date: _____ Shorted Time: _____
Bottle Quantity / Type:

Chain of Custody:	Present: ☑Yes ☐No | Filled Out: ☑Yes ☐No ☐N/A | Sampler Name: ☐Yes ☐No ☑N/A			
	Relinquished To Pace: ☑Yes ☐No ☐N/A | Sampling Date(s): ☑Yes ☐No ☐N/A | Sampling Time(s): ☑Yes ☐No ☐N/A			
Samples Arrived within Hold Time	☑Yes	☐No	☐N/A	Comments
Rush Turnaround Requested on COC	☐Yes	☑No	☐N/A	Comments
Sufficient Volume	☑Yes	☐No	☐N/A	Comments
Correct Containers Used	☑Yes	☐No	☐N/A	Comments
Containers Intact	☑Yes	☐No	☐N/A	Comments
Sample Labels Match COC (Sample ID, Date/Time of Collection)	☐Yes	☑No	☐N/A	Comments: NO sample ID on containers, matched by ID label
All containers needing acid / base preservation have been checked	☑Yes	☐No	☐N/A	Preservation Information
All containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, PFAS	☑Yes	☐No	☐N/A	Preservative: _____ Date: _____ Lot / Trace: _____ Time: _____ Amount added (mL): _____ Initials: _____
~~Headspace in Volatile Vials? (>6mm)~~	☐Yes	☐No	☑N/A	
Trip Blank Present:	☐Yes	☐No	☑N/A	

Comments / Resolutions (use back for additional comments): _____

Reviewed by: ZM

ANALYSIS OF PRODUCED LIQUIDS

NORTHWEST GULF - MOBILE AREA FIELD

Marvin Rogers

To: ddethan@wtoffshore.com
Cc: Nick Tew; Rebecca Pritchett; ksullivan@wtoffshore.com; Kirk McQuillan; Butch Gregory; Elbert Patterson; Leigh Blake
Subject: W&T Produced liquids line; sampling; analysis

Mr. Dethan,
Ms. Leigh Blake and the Board's South Alabama field office received your email dated December 2, 2025, about the contents of the W&T's produced liquids line. This is to remind you and W&T Offshore that your company's analysis of the contents of the produced line is due to be included in a response to Dr. Tew's letter of August 27, 2025. We understand from your email and the attachments that there are numerous details in preparing the analysis. We request that in your written response to Dr. Tew's letter that you prepare a written summary of the contents of the produced liquids line. You may wish to review Dr. Tew's letter, particularly the section entitled *Recent leaks in produced liquids pipeline.*

Marvin Rogers

Marvin Rogers
General Counsel
Assistant Attorney General
Alabama Oil and Gas Board
205-247-3680 office
205-394-3185 cell

STATE OIL AND GAS BOARD OF ALABAMA

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

August 27, 2025

Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

RE: Deficiencies in Offshore Operations

Dear Mr. Williford:

The Board's staff has determined that W&T Offshore has various deficiencies in offshore operations. We trust you will address them in an expeditious manner.

Bottom plugs in temporarily abandoned wells—We note that you have approximately 13 wells in temporarily abandoned status. Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* requires a bottom plug on all temporarily abandoned wells. You should submit a schedule for installing these bottom plugs.

Parted casing in State Lease 615 #1 Well—As you are aware, a well with parted tubing cannot be utilized until the well is repaired. Please submit a schedule for repairing the well (or plugging the well).

Unsafe platform; State Lease 537, Tract 112 #4 Well—You should immediately rectify the unsafe platform.

Recent leaks in produced liquids pipeline—Leigh Blake, Manager of South Alabama Field Operations, has noted that W&T has had five leaks in a produced liquids pipeline since November 2024. Such leaks are required to be reported on Form OGB-27, *Notification of Fire, Spill, Leak, or Blowout*. A form has not been filed for all five leaks, and the forms are missing accurate and complete information. Furthermore, on some of the forms, the determination of the estimated volume of the leak has been omitted.

Please determine the amount of the liquid that leaked from the pipeline and obtain an analysis of the contents of the produced liquids line. We assume that the produced liquids transported through the line include saltwater, corrosion inhibitor, scale inhibitor, gas condensate, and diesel fuel as well as traces of other elements.

Recertifications of structural integrity—Rule 400-2-6-.09 (4) of the *State Oil and Gas Board Administrative Code* requires an offshore operator to recertify the structural integrity of offshore platforms every five years. W&T is overdue in submitting these recertifications.

Please address these deficiencies and supply the information requested.

Thank you for your cooperation.

Sincerely yours,

Berry H. (Nick) Tew, Jr.
State Geologist and Oil & Gas Supervisor

CC:

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

JSt

Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

December 02, 2025

Laurentiu Pirvu
W&T Offshore
6000 Deakle Road
Theodore, AL 36582

RE: Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Dear Laurentiu Pirvu:

Enclosed are the analytical results for sample(s) received by the laboratory on November 18, 2025. The results relate only to the samples included in this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay
- Pace Analytical Services - New Orleans
- Pace Analytical Services - Ormond Beach

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MK Brenner

Mary Kathryn Brenner
marykathryn.brenner@pacelabs.com
251-344-9106
Project Manager

Enclosures

cc: Deepu Dethan, W&T Offshore
Rocky Folse
Doris Leach, W&T Offshore/Aquasition II LLC

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

CERTIFICATIONS

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Pace Analytical Services New Orleans

Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 2000662024-10
Kansas Department of Health and Environment (NELAC): E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP): 02006
Texas Commission on Env. Quality (NELAC): T104704405-23-18
U.S. Dept. of Agriculture Foreign Soil Import: 525-23-117-89728

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
California Certification# 3096
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
DoD-ANAB #:ADE-3199
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Ohio DEP 87780
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Utah FL NELAC Reciprocity
Utah
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302
Florida DOH Certification # E87948
Illinois EPA Certification # 200050
ISO/IEC 17025 (A2LA) Certification # 6154.01
Kentucky UST DEP Certification # 123059
Louisiana DEQ Certification # 04168
Minnesota DOH Certification # 055-999-334
New York DOH Certification # 12064
North Dakota DEQ Certification # R-150
ISO/IEC 17025 (A2LA) Certification # 6154.01
South Carolina DES Certification # 83006001
Texas TCEQ Certification # T104704529
USDA APHIS Foreign Soil Permit # 525-24-3-36355
U.S. Fish & Wildlife Service Permit # 51774A
Virginia VELAP Certification # 460263
Wisconsin DATCP Certification # 444
Wisconsin DNR Certification # 405132750

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Mobile, AL 36609
251-344-9106

SAMPLE SUMMARY

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Lab ID	Sample ID	Matrix	Date Collected	Date Received
20373470001	Northwest Gulf	Water	11/18/25 12:00	11/18/25 15:45

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SAMPLE ANALYTE COUNT

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20373470001	**Northwest Gulf**	EPA 8270E	TPO	77	PASI-G
		EPA 8260B	JRP	44	PASI-N
		EPA 1664B, 2010	TMO	1	PASI-N
		SM 2320B	JH2	1	PASI-O
		SM 4500-H+B	SWB	1	PASI-O
		SM 4500-S2F	JJB	1	PASI-O
		40CFR PART 432.2	TAE	1	PASI-N
		EPA 351.2	TAE	1	PASI-N
		SM 4500-NO3 F	JLH	1	PASI-N

PASI-G = Pace Analytical Services - Green Bay
PASI-N = Pace Analytical Services - New Orleans
PASI-O = Pace Analytical Services - Ormond Beach

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ANALYTICAL RESULTS

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Sample: Northwest Gulf **Lab ID: 20373470001** Collected: 11/18/25 12:00 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Phenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	108-95-2	D3,L2
bis(2-Chloroethyl) ether	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:49	111-44-4	
2-Chlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	106-46-7	
Benzyl alcohol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	100-51-6	
1,2-Dichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	95-50-1	
2-Methylphenol(o-Cresol)	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	95-48-7	L2
3&4-Methylphenol(m&p Cresol)	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49		
N-Nitroso-di-n-propylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	621-64-7	
Hexachloroethane	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	67-72-1	
Nitrobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	98-95-3	
Isophorone	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	78-59-1	
2-Nitrophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	88-75-5	
2,4-Dimethylphenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	105-67-9	
Benzoic acid	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 19:49	65-85-0	
bis(2-Chloroethoxy)methane	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	111-91-1	
2,4-Dichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	120-82-1	
Naphthalene	**1590**	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	91-20-3	
4-Chloroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	59-50-7	
2-Methylnaphthalene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	91-57-6	
Hexachlorocyclopentadiene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	77-47-4	
2,4,6-Trichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	95-95-4	
2-Chloronaphthalene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	91-58-7	
2-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	88-74-4	
Dimethylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	131-11-3	
Acenaphthylene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	606-20-2	
3-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	99-09-2	
Acenaphthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	83-32-9	
2,4-Dinitrophenol	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 19:49	51-28-5	
4-Nitrophenol	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:49	100-02-7	
Dibenzofuran	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	121-14-2	
Diethylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	7005-72-3	
Fluorene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	86-73-7	
4-Nitroaniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:49	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	101-55-3	
Hexachlorobenzene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	118-74-1	

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251-344-9106

ANALYTICAL RESULTS

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Sample: Northwest Gulf **Lab ID: 20373470001** Collected: 11/18/25 12:00 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV Low Volume	Analytical Method: EPA 8270E Preparation Method: EPA 3510 Pace Analytical Services - Green Bay							
Pentachlorophenol	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	87-86-5	
Phenanthrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	85-01-8	
Anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	120-12-7	
Di-n-butylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	84-74-2	
Fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	206-44-0	
Pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	129-00-0	
Butylbenzylphthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	91-94-1	
Benzo(a)anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	56-55-3	
Chrysene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	117-81-7	
Di-n-octylphthalate	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:49	117-84-0	CH
Benzo(b)fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	207-08-9	
Benzo(a)pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	53-70-3	
Benzo(g,h,i)perylene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	191-24-2	
Pyridine	ND	ug/L	2000	20	11/25/25 07:02	11/26/25 19:49	110-86-1	
N-Nitrosodimethylamine	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	62-75-9	
Carbazole	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	86-74-8	
1-Methylnaphthalene	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	90-12-0	
Benzidine	ND	ug/L	10000	20	11/25/25 07:02	11/26/25 19:49	92-87-5	
Biphenyl (Diphenyl)	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	92-52-4	
Aniline	ND	ug/L	1000	20	11/25/25 07:02	11/26/25 19:49	62-53-3	
Surrogates								
Nitrobenzene-d5 (S)	50	%	13-130	20	11/25/25 07:02	11/26/25 19:49	4165-60-0	
2-Fluorobiphenyl (S)	66	%	15-130	20	11/25/25 07:02	11/26/25 19:49	321-60-8	
Terphenyl-d14 (S)	73	%	50-133	20	11/25/25 07:02	11/26/25 19:49	1718-51-0	
Phenol-d6 (S)	16	%	10-130	20	11/25/25 07:02	11/26/25 19:49	13127-88-3	
2-Fluorophenol (S)	23	%	10-130	20	11/25/25 07:02	11/26/25 19:49	367-12-4	
2,4,6-Tribromophenol (S)	57	%	32-141	20	11/25/25 07:02	11/26/25 19:49	118-79-6	
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Acetone	ND	ug/L	5000	500		11/20/25 19:13	67-64-1	
Benzene	**4020**	ug/L	2500	500		11/20/25 19:13	71-43-2	
Bromodichloromethane	ND	ug/L	2500	500		11/20/25 19:13	75-27-4	
Bromoform	ND	ug/L	2500	500		11/20/25 19:13	75-25-2	
Bromomethane	ND	ug/L	2500	500		11/20/25 19:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	5000	500		11/20/25 19:13	78-93-3	
Carbon disulfide	ND	ug/L	2500	500		11/20/25 19:13	75-15-0	
Carbon tetrachloride	ND	ug/L	2500	500		11/20/25 19:13	56-23-5	
Chlorobenzene	ND	ug/L	2500	500		11/20/25 19:13	108-90-7	
Chloroethane	ND	ug/L	2500	500		11/20/25 19:13	75-00-3	
Chloroform	ND	ug/L	2500	500		11/20/25 19:13	67-66-3	

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ANALYTICAL RESULTS

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Sample: Northwest Gulf **Lab ID: 20373470001** Collected: 11/18/25 12:00 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B Pace Analytical Services - New Orleans							
Chloromethane	ND	ug/L	2500	500		11/20/25 19:13	74-87-3	
Dibromochloromethane	ND	ug/L	2500	500		11/20/25 19:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2500	500		11/20/25 19:13	106-93-4	
Dichlorodifluoromethane	ND	ug/L	2500	500		11/20/25 19:13	75-71-8	D3
1,1-Dichloroethane	ND	ug/L	2500	500		11/20/25 19:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	2500	500		11/20/25 19:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	2500	500		11/20/25 19:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2500	500		11/20/25 19:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2500	500		11/20/25 19:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	2500	500		11/20/25 19:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	2500	500		11/20/25 19:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2500	500		11/20/25 19:13	10061-02-6	
Ethylbenzene	ND	ug/L	2500	500		11/20/25 19:13	100-41-4	
2-Hexanone	ND	ug/L	5000	500		11/20/25 19:13	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	2500	500		11/20/25 19:13	98-82-8	
Methyl acetate	ND	ug/L	5000	500		11/20/25 19:13	79-20-9	
Methylene Chloride	ND	ug/L	2500	500		11/20/25 19:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5000	500		11/20/25 19:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2500	500		11/20/25 19:13	1634-04-4	
Styrene	ND	ug/L	2500	500		11/20/25 19:13	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	2500	500		11/20/25 19:13	79-34-5	
Tetrachloroethene	ND	ug/L	2500	500		11/20/25 19:13	127-18-4	
Toluene	**3670**	ug/L	2500	500		11/20/25 19:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	2500	500		11/20/25 19:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2500	500		11/20/25 19:13	79-00-5	
Trichloroethene	ND	ug/L	2500	500		11/20/25 19:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	2500	500		11/20/25 19:13	75-69-4	
Vinyl chloride	ND	ug/L	1000	500		11/20/25 19:13	75-01-4	
m&p-Xylene	ND	ug/L	5000	500		11/20/25 19:13	179601-23-1	
o-Xylene	ND	ug/L	2500	500		11/20/25 19:13	95-47-6	
Surrogates								
Toluene-d8 (S)	98	%.	76-124	500		11/20/25 19:13	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	78-121	500		11/20/25 19:13	460-00-4	
Dibromofluoromethane (S)	87	%.	74-128	500		11/20/25 19:13	1868-53-7	
HEM, Oil and Grease	Analytical Method: EPA 1664B, 2010 Pace Analytical Services - New Orleans							
Oil and Grease	**159**	mg/L	6.1	1		11/24/25 12:18		P1
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Ormond Beach							
Alkalinity, Total as CaCO3	**36.0**	mg/L	5.0	1		11/21/25 21:32		

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ANALYTICAL RESULTS

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Sample: Northwest Gulf **Lab ID: 20373470001** Collected: 11/18/25 12:00 Received: 11/18/25 15:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Ormond Beach							
pH at 25 Degrees C	**5.1**	Std. Units	0.10	1		11/25/25 16:29		H6
4500S2F Sulfide	Analytical Method: SM 4500-S2F Pace Analytical Services - Ormond Beach							
Sulfide	**256**	mg/L	0.10	1		11/25/25 10:41	18496-25-8	
Total Nitrogen Calculation	Analytical Method: 40CFR PART 432.2 Pace Analytical Services - New Orleans							
Nitrogen	**102**	mg/L	0.15	1		12/01/25 09:45	7727-37-9	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - New Orleans							
Nitrogen, Kjeldahl, Total	**102**	mg/L	3.0	1	11/24/25 11:28	11/26/25 15:20	7727-37-9	P1
4500NO3-F, NO3-NO2	Analytical Method: SM 4500-NO3 F Pace Analytical Services - New Orleans							
Nitrogen, NO2 plus NO3	ND	mg/L	1.0	20		11/20/25 15:18		D3

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QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

QC Batch: 375900
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373470001

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,1-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloroethane	ug/L	ND	5.0	11/20/25 15:05	
1,2-Dichloropropane	ug/L	ND	5.0	11/20/25 15:05	
2-Butanone (MEK)	ug/L	ND	10.0	11/20/25 15:05	
2-Hexanone	ug/L	ND	10.0	11/20/25 15:05	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/20/25 15:05	
Acetone	ug/L	ND	10.0	11/20/25 15:05	
Benzene	ug/L	ND	5.0	11/20/25 15:05	
Bromodichloromethane	ug/L	ND	5.0	11/20/25 15:05	
Bromoform	ug/L	ND	5.0	11/20/25 15:05	
Bromomethane	ug/L	ND	5.0	11/20/25 15:05	
Carbon disulfide	ug/L	ND	5.0	11/20/25 15:05	
Carbon tetrachloride	ug/L	ND	5.0	11/20/25 15:05	
Chlorobenzene	ug/L	ND	5.0	11/20/25 15:05	
Chloroethane	ug/L	ND	5.0	11/20/25 15:05	
Chloroform	ug/L	ND	5.0	11/20/25 15:05	
Chloromethane	ug/L	ND	5.0	11/20/25 15:05	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Dibromochloromethane	ug/L	ND	5.0	11/20/25 15:05	
Dichlorodifluoromethane	ug/L	ND	5.0	11/20/25 15:05	
Ethylbenzene	ug/L	ND	5.0	11/20/25 15:05	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/20/25 15:05	
m&p-Xylene	ug/L	ND	10.0	11/20/25 15:05	
Methyl acetate	ug/L	ND	10.0	11/20/25 15:05	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/20/25 15:05	
Methylene Chloride	ug/L	ND	5.0	11/20/25 15:05	
o-Xylene	ug/L	ND	5.0	11/20/25 15:05	
Styrene	ug/L	ND	5.0	11/20/25 15:05	
Tetrachloroethene	ug/L	ND	5.0	11/20/25 15:05	
Toluene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/20/25 15:05	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/20/25 15:05	
Trichloroethene	ug/L	ND	5.0	11/20/25 15:05	
Trichlorofluoromethane	ug/L	ND	5.0	11/20/25 15:05	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

METHOD BLANK: 1825488 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	2.0	11/20/25 15:05	
4-Bromofluorobenzene (S)	%.	98	78-121	11/20/25 15:05	
Dibromofluoromethane (S)	%.	94	74-128	11/20/25 15:05	
Toluene-d8 (S)	%.	99	76-124	11/20/25 15:05	

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1,2-Trichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,1-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloroethane	ug/L	ND	5.0	11/21/25 11:59	
1,2-Dichloropropane	ug/L	ND	5.0	11/21/25 11:59	
2-Butanone (MEK)	ug/L	ND	10.0	11/21/25 11:59	
2-Hexanone	ug/L	ND	10.0	11/21/25 11:59	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	11/21/25 11:59	
Acetone	ug/L	ND	10.0	11/21/25 11:59	
Benzene	ug/L	ND	5.0	11/21/25 11:59	
Bromodichloromethane	ug/L	ND	5.0	11/21/25 11:59	
Bromoform	ug/L	ND	5.0	11/21/25 11:59	
Bromomethane	ug/L	ND	5.0	11/21/25 11:59	
Carbon disulfide	ug/L	ND	5.0	11/21/25 11:59	
Carbon tetrachloride	ug/L	ND	5.0	11/21/25 11:59	
Chlorobenzene	ug/L	ND	5.0	11/21/25 11:59	
Chloroethane	ug/L	ND	5.0	11/21/25 11:59	
Chloroform	ug/L	ND	5.0	11/21/25 11:59	
Chloromethane	ug/L	ND	5.0	11/21/25 11:59	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
cis-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Dibromochloromethane	ug/L	ND	5.0	11/21/25 11:59	
Dichlorodifluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Ethylbenzene	ug/L	ND	5.0	11/21/25 11:59	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	11/21/25 11:59	
m&p-Xylene	ug/L	ND	10.0	11/21/25 11:59	
Methyl acetate	ug/L	ND	10.0	11/21/25 11:59	
Methyl-tert-butyl ether	ug/L	ND	5.0	11/21/25 11:59	
Methylene Chloride	ug/L	ND	5.0	11/21/25 11:59	
o-Xylene	ug/L	ND	5.0	11/21/25 11:59	
Styrene	ug/L	ND	5.0	11/21/25 11:59	

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

METHOD BLANK: 1826183 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tetrachloroethene	ug/L	ND	5.0	11/21/25 11:59	
Toluene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/21/25 11:59	
trans-1,3-Dichloropropene	ug/L	ND	5.0	11/21/25 11:59	
Trichloroethene	ug/L	ND	5.0	11/21/25 11:59	
Trichlorofluoromethane	ug/L	ND	5.0	11/21/25 11:59	
Vinyl chloride	ug/L	ND	2.0	11/21/25 11:59	
4-Bromofluorobenzene (S)	%.	101	78-121	11/21/25 11:59	
Dibromofluoromethane (S)	%.	105	74-128	11/21/25 11:59	
Toluene-d8 (S)	%.	103	76-124	11/21/25 11:59	

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	48.9	98	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	44.2	88	65-129	
1,1,2-Trichloroethane	ug/L	50	47.3	95	75-121	
1,1-Dichloroethane	ug/L	50	44.8	90	71-127	
1,1-Dichloroethene	ug/L	50	47.9	96	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	75-125	
1,2-Dichloroethane	ug/L	50	47.4	95	65-131	
1,2-Dichloropropane	ug/L	50	45.7	91	72-125	
2-Butanone (MEK)	ug/L	50	40.8	82	34-170	
2-Hexanone	ug/L	50	45.2	90	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	44.9	90	58-141	
Acetone	ug/L	50	38.3	77	16-192	
Benzene	ug/L	50	44.8	90	74-132	
Bromodichloromethane	ug/L	50	49.9	100	73-117	
Bromoform	ug/L	50	50.8	102	58-132	
Bromomethane	ug/L	50	45.1	90	47-157	
Carbon disulfide	ug/L	50	45.0	90	52-145	
Carbon tetrachloride	ug/L	50	49.6	99	68-129	
Chlorobenzene	ug/L	50	50.6	101	79-121	
Chloroethane	ug/L	50	44.6	89	34-160	
Chloroform	ug/L	50	46.0	92	70-120	
Chloromethane	ug/L	50	39.8	80	44-142	
cis-1,2-Dichloroethene	ug/L	50	46.1	92	71-124	
cis-1,3-Dichloropropene	ug/L	50	48.3	97	77-121	
Dibromochloromethane	ug/L	50	49.5	99	67-122	
Dichlorodifluoromethane	ug/L	50	42.8	86	28-148	
Ethylbenzene	ug/L	50	50.6	101	79-116	
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	100	100	78-119	
Methyl acetate	ug/L	50	43.3	87	47-155	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

LABORATORY CONTROL SAMPLE: 1825489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	44.5	89	58-135	
Methylene Chloride	ug/L	50	44.6	89	49-145	
o-Xylene	ug/L	50	50.8	102	77-121	
Styrene	ug/L	50	50.0	100	81-123	
Tetrachloroethene	ug/L	50	52.4	105	62-138	
Toluene	ug/L	50	48.8	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.3	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	49.0	98	77-121	
Trichloroethene	ug/L	50	48.2	96	77-117	
Trichlorofluoromethane	ug/L	50	49.2	98	45-164	
Vinyl chloride	ug/L	50	44.9	90	48-130	
4-Bromofluorobenzene (S)	%.			102	78-121	
Dibromofluoromethane (S)	%.			93	74-128	
Toluene-d8 (S)	%.			99	76-124	

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	49.3	99	76-126	
1,1,2,2-Tetrachloroethane	ug/L	50	57.2	114	65-129	
1,1,2-Trichloroethane	ug/L	50	52.3	105	75-121	
1,1-Dichloroethane	ug/L	50	47.9	96	71-127	
1,1-Dichloroethene	ug/L	50	46.5	93	63-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.7	105	75-125	
1,2-Dichloroethane	ug/L	50	48.9	98	65-131	
1,2-Dichloropropane	ug/L	50	50.4	101	72-125	
2-Butanone (MEK)	ug/L	50	52.1	104	34-170	
2-Hexanone	ug/L	50	58.5	117	52-147	
4-Methyl-2-pentanone (MIBK)	ug/L	50	52.2	104	58-141	
Acetone	ug/L	50	43.1	86	16-192	
Benzene	ug/L	50	46.5	93	74-132	
Bromodichloromethane	ug/L	50	52.4	105	73-117	
Bromoform	ug/L	50	41.7	83	58-132	
Bromomethane	ug/L	50	57.6	115	47-157	
Carbon disulfide	ug/L	50	46.5	93	52-145	
Carbon tetrachloride	ug/L	50	47.8	96	68-129	
Chlorobenzene	ug/L	50	48.2	96	79-121	
Chloroethane	ug/L	50	47.7	95	34-160	
Chloroform	ug/L	50	47.2	94	70-120	
Chloromethane	ug/L	50	36.9	74	44-142	
cis-1,2-Dichloroethene	ug/L	50	45.6	91	71-124	
cis-1,3-Dichloropropene	ug/L	50	52.3	105	77-121	
Dibromochloromethane	ug/L	50	48.3	97	67-122	
Dichlorodifluoromethane	ug/L	50	46.9	94	28-148	
Ethylbenzene	ug/L	50	48.6	97	79-116	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

LABORATORY CONTROL SAMPLE: 1826184

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Isopropylbenzene (Cumene)	ug/L	50	51.3	103	77-126	
m&p-Xylene	ug/L	100	97.4	97	78-119	
Methyl acetate	ug/L	50	53.6	107	47-155	
Methyl-tert-butyl ether	ug/L	50	48.7	97	58-135	
Methylene Chloride	ug/L	50	45.5	91	49-145	
o-Xylene	ug/L	50	48.0	96	77-121	
Styrene	ug/L	50	48.0	96	81-123	
Tetrachloroethene	ug/L	50	48.2	96	62-138	
Toluene	ug/L	50	48.9	98	79-120	
trans-1,2-Dichloroethene	ug/L	50	46.7	93	68-125	
trans-1,3-Dichloropropene	ug/L	50	54.1	108	77-121	
Trichloroethene	ug/L	50	47.6	95	77-117	
Trichlorofluoromethane	ug/L	50	62.6	125	45-164	
Vinyl chloride	ug/L	50	54.8	110	48-130	
4-Bromofluorobenzene (S)	%.			99	78-121	
Dibromofluoromethane (S)	%.			99	74-128	
Toluene-d8 (S)	%.			101	76-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	50	50	45.9	45.5	92	91	73-141	1	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.7	41.8	85	84	48-148	2	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	46.2	45.7	92	91	46-154	1	20	
1,1-Dichloroethane	ug/L	ND	50	50	40.8	40.5	82	81	63-145	1	20	
1,1-Dichloroethene	ug/L	ND	50	50	40.4	42.0	81	84	28-176	4	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.7	46.8	95	94	69-134	2	20	
1,2-Dichloroethane	ug/L	ND	50	50	46.3	45.1	93	90	51-147	2	20	
1,2-Dichloropropane	ug/L	ND	50	50	43.2	42.8	86	86	64-140	1	20	
2-Butanone (MEK)	ug/L	ND	50	50	26.6	25.4	53	51	10-200	5	20	
2-Hexanone	ug/L	ND	50	50	36.8	35.1	74	70	40-157	5	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	42.0	41.5	84	83	36-165	1	20	
Acetone	ug/L	ND	50	50	16.1	17.3	32	35	10-200	7	20	
Benzene	ug/L	ND	50	50	42.8	42.7	86	85	29-186	0	20	
Bromodichloromethane	ug/L	ND	50	50	49.2	48.6	98	97	58-139	1	20	
Bromoform	ug/L	ND	50	50	50.7	49.7	101	99	57-135	2	20	
Bromomethane	ug/L	ND	50	50	46.5	52.4	93	105	42-168	12	20	
Carbon disulfide	ug/L	ND	50	50	37.0	39.1	74	78	44-170	6	20	
Carbon tetrachloride	ug/L	ND	50	50	48.2	48.0	96	96	45-162	0	20	
Chlorobenzene	ug/L	ND	50	50	47.7	47.8	95	96	71-135	0	20	
Chloroethane	ug/L	ND	50	50	44.1	47.7	88	95	32-175	8	20	
Chloroform	ug/L	ND	50	50	44.2	43.9	88	88	61-136	1	20	
Chloromethane	ug/L	ND	50	50	41.9	45.8	84	92	38-154	9	20	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825490 1825491

Parameter	Units	20372957005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
cis-1,2-Dichloroethene	ug/L	ND	50	50	43.2	43.9	86	88	44-160	2	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	45.8	45.3	92	91	47-153	1	20	
Dibromochloromethane	ug/L	ND	50	50	49.9	49.3	100	99	64-130	1	20	
Dichlorodifluoromethane	ug/L	ND	50	50	56.5	62.6	113	125	22-160	10	20	
Ethylbenzene	ug/L	ND	50	50	48.4	47.5	97	95	51-153	2	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	43.5	43.7	87	87	68-145	0	20	
m&p-Xylene	ug/L	ND	100	100	94.8	96.1	95	96	30-173	1	20	
Methyl acetate	ug/L	ND	50	50	42.8	37.4	86	75	20-173	13	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	41.0	40.1	82	80	36-160	2	20	
Methylene Chloride	ug/L	ND	50	50	40.4	40.3	81	81	56-140	0	20	
o-Xylene	ug/L	ND	50	50	48.3	48.7	97	97	10-197	1	20	
Styrene	ug/L	ND	50	50	46.3	47.1	93	94	37-163	2	20	
Tetrachloroethene	ug/L	ND	50	50	47.6	48.6	95	97	18-193	2	20	
Toluene	ug/L	ND	50	50	45.6	45.8	91	92	33-175	0	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	40.7	40.9	81	82	63-140	0	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	45.9	46.4	92	93	47-153	1	20	
Trichloroethene	ug/L	ND	50	50	44.6	44.2	89	88	24-181	1	20	
Trichlorofluoromethane	ug/L	ND	50	50	45.9	50.7	92	101	37-182	10	20	
Vinyl chloride	ug/L	ND	50	50	44.1	46.8	88	94	19-169	6	20	
4-Bromofluorobenzene (S)	%.						103	102	78-121			
Dibromofluoromethane (S)	%.						93	92	74-128			
Toluene-d8 (S)	%.						99	99	76-124			

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4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

QC Batch: 523097
QC Batch Method: EPA 3510
Analysis Method: EPA 8270E
Analysis Description: 8270E Water MSSV Low Volume
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 20373470001

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,2-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,3-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1,4-Dichlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
1-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2,4,5-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4,6-Trichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dichlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dimethylphenol	ug/L	ND	5.0	11/26/25 13:40	
2,4-Dinitrophenol	ug/L	ND	50.0	11/26/25 13:40	
2,4-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2,6-Dinitrotoluene	ug/L	ND	5.0	11/26/25 13:40	
2-Chloronaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Chlorophenol	ug/L	ND	5.0	11/26/25 13:40	
2-Methylnaphthalene	ug/L	ND	5.0	11/26/25 13:40	
2-Methylphenol(o-Cresol)	ug/L	ND	5.0	11/26/25 13:40	
2-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
2-Nitrophenol	ug/L	ND	5.0	11/26/25 13:40	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	5.0	11/26/25 13:40	
3,3'-Dichlorobenzidine	ug/L	ND	5.0	11/26/25 13:40	
3-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4,6-Dinitro-2-methylphenol	ug/L	ND	10.0	11/26/25 13:40	
4-Bromophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Chloro-3-methylphenol	ug/L	ND	5.0	11/26/25 13:40	
4-Chloroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	11/26/25 13:40	
4-Nitroaniline	ug/L	ND	5.0	11/26/25 13:40	
4-Nitrophenol	ug/L	ND	10.0	11/26/25 13:40	
Acenaphthene	ug/L	ND	5.0	11/26/25 13:40	
Acenaphthylene	ug/L	ND	5.0	11/26/25 13:40	
Aniline	ug/L	ND	5.0	11/26/25 13:40	
Anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzidine	ug/L	ND	50.0	11/26/25 13:40	
Benzo(a)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(a)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(b)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(g,h,i)perylene	ug/L	ND	5.0	11/26/25 13:40	
Benzo(k)fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Benzoic acid	ug/L	ND	50.0	11/26/25 13:40	
Benzyl alcohol	ug/L	ND	5.0	11/26/25 13:40	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

METHOD BLANK: 2983970 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Biphenyl (Diphenyl)	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethoxy)methane	ug/L	ND	5.0	11/26/25 13:40	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	11/26/25 13:40	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	11/26/25 13:40	
Butylbenzylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Carbazole	ug/L	ND	5.0	11/26/25 13:40	
Chrysene	ug/L	ND	5.0	11/26/25 13:40	
Di-n-butylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Di-n-octylphthalate	ug/L	ND	10.0	11/26/25 13:40	CH
Dibenz(a,h)anthracene	ug/L	ND	5.0	11/26/25 13:40	
Dibenzofuran	ug/L	ND	5.0	11/26/25 13:40	
Diethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Dimethylphthalate	ug/L	ND	5.0	11/26/25 13:40	
Fluoranthene	ug/L	ND	5.0	11/26/25 13:40	
Fluorene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorobenzene	ug/L	ND	5.0	11/26/25 13:40	
Hexachlorocyclopentadiene	ug/L	ND	5.0	11/26/25 13:40	
Hexachloroethane	ug/L	ND	5.0	11/26/25 13:40	
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	11/26/25 13:40	
Isophorone	ug/L	ND	5.0	11/26/25 13:40	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodimethylamine	ug/L	ND	5.0	11/26/25 13:40	
N-Nitrosodiphenylamine	ug/L	ND	5.0	11/26/25 13:40	
Naphthalene	ug/L	ND	5.0	11/26/25 13:40	
Nitrobenzene	ug/L	ND	5.0	11/26/25 13:40	
Pentachlorophenol	ug/L	ND	5.0	11/26/25 13:40	
Phenanthrene	ug/L	ND	5.0	11/26/25 13:40	
Phenol	ug/L	ND	5.0	11/26/25 13:40	
Pyrene	ug/L	ND	5.0	11/26/25 13:40	
Pyridine	ug/L	ND	10.0	11/26/25 13:40	
2,4,6-Tribromophenol (S)	%	64	32-141	11/26/25 13:40	
2-Fluorobiphenyl (S)	%	39	15-130	11/26/25 13:40	
2-Fluorophenol (S)	%	26	10-130	11/26/25 13:40	
Nitrobenzene-d5 (S)	%	55	13-130	11/26/25 13:40	
Phenol-d6 (S)	%	15	10-130	11/26/25 13:40	
Terphenyl-d14 (S)	%	83	50-133	11/26/25 13:40	

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	24.7	49	37-130	
1,2-Dichlorobenzene	ug/L	50	25.7	51	39-130	
1,3-Dichlorobenzene	ug/L	50	24.4	49	34-130	

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Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	24.0	48	36-130	
1-Methylnaphthalene	ug/L	50	24.3	49	45-130	
2,4,5-Trichlorophenol	ug/L	50	34.3	69	55-130	
2,4,6-Trichlorophenol	ug/L	50	34.4	69	59-130	
2,4-Dichlorophenol	ug/L	50	29.7	59	55-130	
2,4-Dimethylphenol	ug/L	50	32.5	65	47-130	
2,4-Dinitrophenol	ug/L	50	20.8J	42	10-131	
2,4-Dinitrotoluene	ug/L	50	37.6	75	69-130	
2,6-Dinitrotoluene	ug/L	50	38.2	76	61-130	
2-Chloronaphthalene	ug/L	50	27.6	55	48-130	
2-Chlorophenol	ug/L	50	27.7	55	52-130	
2-Methylnaphthalene	ug/L	50	23.0	46	41-130	
2-Methylphenol(o-Cresol)	ug/L	50	22.2	44	47-130	L2
2-Nitroaniline	ug/L	50	38.4	77	62-143	
2-Nitrophenol	ug/L	50	28.7	57	53-130	
3&4-Methylphenol(m&p Cresol)	ug/L	50	22.9	46	42-130	
3,3'-Dichlorobenzidine	ug/L	50	26.4	53	26-130	
3-Nitroaniline	ug/L	50	39.9	80	58-148	
4,6-Dinitro-2-methylphenol	ug/L	50	27.9	56	37-130	
4-Bromophenylphenyl ether	ug/L	50	32.2	64	55-130	
4-Chloro-3-methylphenol	ug/L	50	31.5	63	52-130	
4-Chloroaniline	ug/L	50	34.0	68	44-149	
4-Chlorophenylphenyl ether	ug/L	50	36.8	74	57-130	
4-Nitroaniline	ug/L	50	39.3	79	42-153	
4-Nitrophenol	ug/L	50	10.5	21	11-130	
Acenaphthene	ug/L	50	30.5	61	49-130	
Acenaphthylene	ug/L	50	32.0	64	53-130	
Aniline	ug/L	50	24.0	48	10-185	
Anthracene	ug/L	50	40.0	80	66-131	
Benzidine	ug/L		ND			
Benzo(a)anthracene	ug/L	50	41.2	82	69-130	
Benzo(a)pyrene	ug/L	50	40.5	81	68-130	
Benzo(b)fluoranthene	ug/L	50	42.2	84	68-130	
Benzo(g,h,i)perylene	ug/L	50	42.1	84	65-130	
Benzo(k)fluoranthene	ug/L	50	42.2	84	70-130	
Benzoic acid	ug/L	50	ND	20	14-130	
Benzyl alcohol	ug/L	50	25.4	51	46-130	
Biphenyl (Diphenyl)	ug/L		ND			
bis(2-Chloroethoxy)methane	ug/L	50	32.1	64	55-130	
bis(2-Chloroethyl) ether	ug/L	50	31.5	63	54-130	
bis(2-Ethylhexyl)phthalate	ug/L	50	40.5	81	66-130	
Butylbenzylphthalate	ug/L	50	41.4	83	66-130	
Carbazole	ug/L	50	42.7	85	63-156	
Chrysene	ug/L	50	43.5	87	70-130	
Di-n-butylphthalate	ug/L	50	41.3	83	64-130	
Di-n-octylphthalate	ug/L	50	37.7	75	53-130	CH
Dibenz(a,h)anthracene	ug/L	50	36.5	73	58-130	

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Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

LABORATORY CONTROL SAMPLE: 2983971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibenzofuran	ug/L	50	34.4	69	58-130	
Diethylphthalate	ug/L	50	42.8	86	70-130	
Dimethylphthalate	ug/L	50	40.9	82	67-130	
Fluoranthene	ug/L	50	40.9	82	65-131	
Fluorene	ug/L	50	37.0	74	58-130	
Hexachloro-1,3-butadiene	ug/L	50	21.5	43	26-130	
Hexachlorobenzene	ug/L	50	34.3	69	61-130	
Hexachlorocyclopentadiene	ug/L	50	16.3	33	15-130	
Hexachloroethane	ug/L	50	22.6	45	29-130	
Indeno(1,2,3-cd)pyrene	ug/L	50	31.2	62	48-130	
Isophorone	ug/L	50	32.1	64	55-130	
N-Nitroso-di-n-propylamine	ug/L	50	30.2	60	53-130	
N-Nitrosodimethylamine	ug/L	50	15.9	32	32-130	
N-Nitrosodiphenylamine	ug/L	50	34.3	69	63-130	
Naphthalene	ug/L	50	26.6	53	49-130	
Nitrobenzene	ug/L	50	34.5	69	63-130	
Pentachlorophenol	ug/L	50	32.5	65	53-130	
Phenanthrene	ug/L	50	39.9	80	63-139	
Phenol	ug/L	50	11.0	22	23-130	L2
Pyrene	ug/L	50	44.9	90	70-130	
Pyridine	ug/L	50	9.4J	19	10-130	
2,4,6-Tribromophenol (S)	%			77	32-141	
2-Fluorobiphenyl (S)	%			53	15-130	
2-Fluorophenol (S)	%			30	10-130	
Nitrobenzene-d5 (S)	%			62	13-130	
Phenol-d6 (S)	%			20	10-130	
Terphenyl-d14 (S)	%			86	50-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trichlorobenzene	ug/L	<0.0024 mg/L	50	50	28.8	27.8	58	56	26-130	4	36	
1,2-Dichlorobenzene	ug/L	<0.0020 mg/L	50	50	30.3	29.2	61	58	26-130	4	33	
1,3-Dichlorobenzene	ug/L	<0.0022 mg/L	50	50	27.0	28.0	54	56	23-130	4	40	
1,4-Dichlorobenzene	ug/L	<0.0018 mg/L	50	50	28.5	27.6	57	55	22-130	3	39	
1-Methylnaphthalene	ug/L	<0.0014 mg/L	50	50	30.2	30.2	60	60	32-130	0	22	
2,4,5-Trichlorophenol	ug/L	<0.0018 mg/L	50	50	35.4	38.5	71	77	10-131	8	50	
2,4,6-Trichlorophenol	ug/L	<0.0020 mg/L	50	50	37.7	36.6	75	73	10-130	3	50	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dichlorophenol	ug/L	<0.0015 mg/L	50	50	35.1	32.8	70	66	19-130	7	45	
2,4-Dimethylphenol	ug/L	<0.0013 mg/L	50	50	31.4	37.9	63	76	44-130	19	21	
2,4-Dinitrophenol	ug/L	<0.012 mg/L	50	50	28J	27.1J	56	54	10-200		29	
2,4-Dinitrotoluene	ug/L	<0.0012 mg/L	50	50	41.9	41.2	84	82	48-130	2	20	
2,6-Dinitrotoluene	ug/L	<0.00085 mg/L	50	50	40.4	40.2	81	80	37-130	1	21	
2-Chloronaphthalene	ug/L	<0.0012 mg/L	50	50	32.9	33.4	66	67	32-130	2	25	
2-Chlorophenol	ug/L	<0.0026 mg/L	50	50	30.5	31.0	61	62	21-130	2	38	
2-Methylnaphthalene	ug/L	<0.0015 mg/L	50	50	30.8	30.5	62	61	28-130	1	23	
2-Methylphenol(o-Cresol)	ug/L	<0.00077 mg/L	50	50	26.4	26.5	53	53	36-130	1	32	
2-Nitroaniline	ug/L	<0.0026 mg/L	50	50	43.9	46.0	88	92	11-158	5	20	
2-Nitrophenol	ug/L	<0.0015 mg/L	50	50	34.7	33.4	69	67	14-130	4	41	
3&4-Methylphenol(m&p Cresol)	ug/L	<0.0018 mg/L	50	50	25.5	26.6	51	53	20-130	4	38	
3,3'-Dichlorobenzidine	ug/L	<0.0015 mg/L	50	50	21.4	21.3	43	43	10-130	0	28	
3-Nitroaniline	ug/L	<0.0018 mg/L	50	50	40.0	41.8	80	84	17-155	4	27	
4,6-Dinitro-2-methylphenol	ug/L	<0.0012 mg/L	50	50	33.6	30.9	67	62	10-137	8	34	
4-Bromophenylphenyl ether	ug/L	<0.0018 mg/L	50	50	38.6	38.2	77	76	42-145	1	21	
4-Chloro-3-methylphenol	ug/L	<0.00094 mg/L	50	50	34.4	34.3	69	69	43-130	0	20	
4-Chloroaniline	ug/L	<0.0025 mg/L	50	50	35.5	33.8	71	68	19-154	5	22	
4-Chlorophenylphenyl ether	ug/L	<0.0020 mg/L	50	50	40.8	38.4	82	77	43-147	6	20	
4-Nitroaniline	ug/L	<0.0024 mg/L	50	50	42.5	35.0	85	70	10-159	19	36	
4-Nitrophenol	ug/L	<0.0083 mg/L	50	50	13.5	13.1	27	26	10-130	3	36	
Acenaphthene	ug/L	<0.0015 mg/L	50	50	35.8	34.9	72	70	32-132	3	21	
Acenaphthylene	ug/L	<0.0013 mg/L	50	50	38.5	37.2	77	74	37-131	3	20	
Aniline	ug/L	<0.0026 mg/L	50	50	26.8	25.4	54	51	16-149	5	28	
Anthracene	ug/L	<0.0017 mg/L	50	50	43.2	42.4	86	85	43-136	2	20	
Benzo(a)anthracene	ug/L	<0.0012 mg/L	50	50	41.9	41.5	84	83	47-130	1	20	
Benzo(a)pyrene	ug/L	<0.0013 mg/L	50	50	43.4	43.3	87	87	36-130	0	20	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzo(b)fluoranthene	ug/L	<0.0014 mg/L	50	50	42.6	41.1	85	82	41-130	4	20	
Benzo(g,h,i)perylene	ug/L	<0.0017 mg/L	50	50	43.4	43.6	87	87	41-131	0	20	
Benzo(k)fluoranthene	ug/L	<0.0014 mg/L	50	50	43.2	43.0	86	86	45-131	0	20	
Benzoic acid	ug/L	<0.019 mg/L	50	50	ND	ND	14	16	10-130		20	
Benzyl alcohol	ug/L	<0.0032 mg/L	50	50	30.8	30.5	62	61	46-130	1	21	
bis(2-Chloroethoxy)methane	ug/L	<0.0011 mg/L	50	50	38.4	36.7	77	73	40-130	4	20	
bis(2-Chloroethyl) ether	ug/L	<0.0062 mg/L	50	50	33.8	34.6	68	69	32-134	3	20	
bis(2-Ethylhexyl)phthalate	ug/L	<0.0021 mg/L	50	50	46.4	45.1	93	90	34-130	3	20	
Butylbenzylphthalate	ug/L	<0.0037 mg/L	50	50	46.1	41.8	92	84	39-130	10	20	
Carbazole	ug/L	<0.0011 mg/L	50	50	46.5	44.6	93	89	45-154	4	20	
Chrysene	ug/L	<0.0018 mg/L	50	50	44.8	43.2	90	86	53-135	4	20	
Di-n-butylphthalate	ug/L	<0.0012 mg/L	50	50	44.7	44.6	89	89	41-130	0	20	
Di-n-octylphthalate	ug/L	<0.0046 mg/L	50	50	45.3	45.5	91	91	24-130	0	20	CH
Dibenz(a,h)anthracene	ug/L	<0.0023 mg/L	50	50	41.1	37.1	82	74	36-130	10	20	
Dibenzofuran	ug/L	<0.00093 mg/L	50	50	40.2	39.7	80	79	47-140	1	20	
Diethylphthalate	ug/L	<0.0012 mg/L	50	50	44.5	43.1	89	86	48-130	3	20	
Dimethylphthalate	ug/L	<0.0013 mg/L	50	50	41.7	40.7	83	81	44-130	2	20	
Fluoranthene	ug/L	<0.0016 mg/L	50	50	43.1	41.0	86	82	47-131	5	20	
Fluorene	ug/L	<0.0014 mg/L	50	50	41.5	40.0	83	80	43-135	4	20	
Hexachloro-1,3-butadiene	ug/L	<0.0025 mg/L	50	50	26.3	25.9	53	52	10-130	2	50	
Hexachlorobenzene	ug/L	<0.0016 mg/L	50	50	39.0	37.9	78	76	51-142	3	20	
Hexachlorocyclopentadiene	ug/L	<0.0019 mg/L	50	50	17.0	17.6	34	35	10-130	3	50	
Hexachloroethane	ug/L	<0.0015 mg/L	50	50	27.7	26.3	55	53	10-130	5	50	
Indeno(1,2,3-cd)pyrene	ug/L	<0.0018 mg/L	50	50	36.5	34.2	73	68	30-130	6	20	
Isophorone	ug/L	<0.00098 mg/L	50	50	36.3	35.4	73	71	50-130	3	20	
N-Nitroso-di-n-propylamine	ug/L	<0.00082 mg/L	50	50	36.1	34.7	72	69	35-130	4	30	
N-Nitrosodimethylamine	ug/L	<0.0015 mg/L	50	50	16.0	17.9	32	36	10-130	11	31	

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QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2983985 2983986

Parameter	Units	40305317003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
N-Nitrosodiphenylamine	ug/L	<0.00041 mg/L	50	50	41.9	42.2	84	84	57-130	1	20	
Naphthalene	ug/L	<0.0017 mg/L	50	50	32.1	30.8	63	61	34-130	4	20	
Nitrobenzene	ug/L	<0.0016 mg/L	50	50	39.8	38.6	80	77	50-132	3	23	
Pentachlorophenol	ug/L	<0.0016 mg/L	50	50	37.1	35.7	74	71	10-137	4	45	
Phenanthrene	ug/L	<0.0011 mg/L	50	50	43.0	41.5	86	83	48-142	4	20	
Phenol	ug/L	<0.00098 mg/L	50	50	12.4	12.1	25	24	10-130	2	36	1b
Pyrene	ug/L	<0.00098 mg/L	50	50	44.3	39.3	89	79	48-134	12	20	
Pyridine	ug/L	<0.0018 mg/L	50	50	17.5	11.4	35	23	17-130	42	50	
2,4,6-Tribromophenol (S)	%						75	74	32-141			
2-Fluorobiphenyl (S)	%						61	59	15-130			
2-Fluorophenol (S)	%						31	30	10-130			
Nitrobenzene-d5 (S)	%						70	68	13-130			
Phenol-d6 (S)	%						23	23	10-130			
Terphenyl-d14 (S)	%						83	74	50-133			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

QC Batch: 376090
QC Batch Method: EPA 1664B, 2010
Analysis Method: EPA 1664B, 2010
Analysis Description: 1664 HEM, Oil and Grease
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373470001

METHOD BLANK: 1826560 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	mg/L	ND	5.0	11/24/25 12:18	

LABORATORY CONTROL SAMPLE: 1826561

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	40	34.4	86	78-114	

MATRIX SPIKE SAMPLE: 1826562

Parameter	Units	20373385002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	mg/L	ND	40	33.7	80	78-114	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

QC Batch: 1146753
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 20373470001

METHOD BLANK: 6286819 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	11/21/25 16:46	

LABORATORY CONTROL SAMPLE: 6286820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	250	232	93	90-110	

SAMPLE DUPLICATE: 6286821

Parameter	Units	35999249036 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	24.4	24.2	1	20	

SAMPLE DUPLICATE: 6286822

Parameter	Units	35998953002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	244	244	0	20	

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QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

QC Batch: 1147576
QC Batch Method: SM 4500-S2F
Analysis Method: SM 4500-S2F
Analysis Description: 4500S2F Sulfide
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 20373470001

METHOD BLANK: 6290584 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	11/25/25 09:32	

LABORATORY CONTROL SAMPLE & LCSD: 6290585 6290586

Parameter	Units	Spike Conc	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Sulfide	mg/L	6	5.8	5.8	96	96	80-120	0	20	

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Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

QC Batch: 376100
QC Batch Method: EPA 351.2
Analysis Method: EPA 351.2
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - New Orleans

Associated Lab Samples: 20373470001

METHOD BLANK: 1826586 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.15	11/26/25 15:08	

LABORATORY CONTROL SAMPLE: 1826587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	6.6	6.5	100	90-110	

MATRIX SPIKE SAMPLE: 1826589

Parameter	Units	20372419001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	2.5	166	242	75-125	M1

SAMPLE DUPLICATE: 1826588

Parameter	Units	20372419001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	160	164	2	20	

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251-344-9106

QUALITY CONTROL DATA

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

QC Batch: 375770
QC Batch Method: SM 4500-NO3 F
Analysis Method: SM 4500-NO3 F
Analysis Description: SM4500NO3-F, Nitrate, Preserved
Laboratory: Pace Analytical Services - New Orleans
Associated Lab Samples: 20373470001

METHOD BLANK: 1824783 Matrix: Water
Associated Lab Samples: 20373470001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.050	11/20/25 15:09	

LABORATORY CONTROL SAMPLE: 1824784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	6	5.6	93	90-110	

MATRIX SPIKE SAMPLE: 1824786

Parameter	Units	20373411001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	1	1.1	93	80-120	

SAMPLE DUPLICATE: 1824785

Parameter	Units	20373411001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.14	0.15	3	20	

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REPORT OF LABORATORY ANALYSIS

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Mobile, AL 36609
251-344-9106

QUALIFIERS

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

ANALYTE QUALIFIERS

1b	This sample was sub-sampled from an AG1 for a 100 mL extraction.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P1	Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

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Pace Analytical Services, LLC
4320 Midmost Dr
Mobile, AL 36609
251-344-9106

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Produced Liquids - Northwest G
Pace Project No.: 20373470

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20373470001	**Northwest Gulf**	EPA 3510	523097	EPA 8270E	523163
20373470001	**Northwest Gulf**	EPA 8260B	375900		
20373470001	**Northwest Gulf**	EPA 1664B, 2010	376090		
20373470001	**Northwest Gulf**	SM 2320B	1146753		
20373470001	**Northwest Gulf**	SM 4500-H+B	1147808		
20373470001	**Northwest Gulf**	SM 4500-S2F	1147576		
20373470001	**Northwest Gulf**	40CFR PART 432.2	376483		
20373470001	**Northwest Gulf**	EPA 351.2	376100	EPA 351.2	376361
20373470001	**Northwest Gulf**	SM 4500-NO3 F	375770		

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Pace® Location Requested (City/State):
Pace Analytical Mobile
4320 Midmost Dr, Mobile, AL 36609

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

WO# : 20373470

20373470

Company Name:	W&T Offshore/Aquasition II LLC	Contact/Report To:	Laurentiu Pirvu
Street Address:	6000 Deakle Road Theodore, AL 36582	Phone #:	(251)973-4627
		E-Mail:	lpirvu@wtoffshore.com
		Cc E-Mail:	
Customer Project #:			
Project Name:	Produced Liquids - Northwest Gulf	Invoice To:	Invoice Aquasition II
		Invoice E-Mail:	apinv@wtoffshore.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	380000-353248
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Alabama

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units
PRODUCED LIQUIDS NORTHWEST GULF					11/16/25	1200			
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									
PRODUCED LIQUIDS (NWG)									

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

8260 MSV	8270 w/PAH	CO2	HEM, Oil and Grease	Hydrogen Sulfide	TKN, NO2+NO3, TN

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: **Mary Kathryn Brenner**

AcctNum / Client ID:

Table #:

Profile / Template: **17643**

Prelog / Bottle Ord. ID: **EZ 3322738**

Sample Comment

Preservation non-conformance identified for sample

Additional Instructions from Pace®:

Collected By: (Printed Name) RICHARD LABROT

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	MOM21	0	15.2	15.2	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
W&T	11/18/25 1300		11-18-25 1300
W&T Offshore	11-R-25 3:45pm		
		Ekaterina Roy	11/18/25 1546

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

WO# : 20373470

Pace Analytical

Sample Condition Upon Receipt

PM: MKB Due Date: 11/26/25

CLIENT: MO-WT

4320 Midmost Dr. Mobile, AL 36609

Project #:

Courier: ☐ Pace ☒ Client ☐ FedEx ☐ UPS ☐ Other Tracking # _____

Custody Seal on Cooler/Box Present: [see COC] Custody Seals intact: ☐Yes ☐No

Thermometer Used: ☐ Therm Fisher IR 001 ☒ Other: MOTM21

Type of Ice: (Wet) Blue None Samples on ice: [see COC]

Date and Initials of person examining contents: EK 11/18/25

Cooler Temperature: [see COC]

Temp must be measured from temperature blank when present

				Comments:
Temperature Blank Present:	☐Yes	☒No	☐N/A	1
Chain of Custody Present:	☒Yes	☐No	☐N/A	2
Chain of Custody Complete:	☒Yes	☐No	☐N/A	3
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	4
Sampler Name on COC:	☒Yes	☐No	☐N/A	5
Short Hold Time Analyses (<72 hr):	☐Yes	☒No	☐N/A	6
Rush Turn Around Requested:	☐Yes	☒No	☐N/A	7
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	8
Sufficient Volume:	☒Yes	☐No	☐N/A	9
Correct Containers Used:	☒Yes	☐No	☐N/A	10
Filtered vol. Rec. for Diss. tests	☐Yes	☐No	☒N/A	11
Sample Labels match COC:	☒Yes	☐No	☐N/A	12
All containers received within manufacturer's precautionary and/or expiration dates:	☒Yes	☐No	☐N/A	13
All containers needing chemical preservation have been checked (except VOA, micro, & O&G):	☐Yes	☐No	☒N/A	14
All containers preservation checked found to be in compliance with EPA recommendation:	☐Yes	☐No	☒N/A	15 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	☐Yes	☒No	☐N/A	16
Trip Blank Present:	☐Yes	☒No		17

Client Notification/Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Client Aware Samples out of temp

F-NO-C-003-rev.10 16Feb2018 Mobile SCUR Form.xlsx

Internal Transfer Chain of Custody

WO# : 35999047

35999047

Pace

☐ Rush Multiplier____X

☑ Samples Pre-Logged into eCOC

Workorder: 20373470 **Workorder Name:** Produced Liquids - Northwest G

State Of Origin: A

Cert. Needed: ☐ ☐ No

Owner Received Date: 11/18/2025 **Results Requested By:** 11/26/2025

Report To	Subcontract To
Mary Kathryn Brenner Pace Analytical Mobile Labs 4320 Midmost Dr Mobile, AL 36609 USA Phone 251-344-9106	Pace Analytical Ormond Beach 8 East Tower Circle Ormond Beach, FL 32174 Phone (386)672-5668

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved	Requested Analysis: CO2 / Specific Conductivity	Requested Analysis: Hydrogen Sulfide	LAB USE ONLY
1	Northwest Gulf	PS	11/18/2025 12:00	20373470001	Water	1	1	X	X	
2										
3										
4										
5										

Transfers	Released By	Date/Time	Received By	Date/Time
1		11/18/25 16:00	Pace	11/19/25 0830
2				
3				

Comments

Cooler Temperature on Receipt 3.4 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

INTER_LABORATORY WORK ORDER # 20373470

(To be completed by sending lab)

Ship To:
Pace Analytical Ormond Beach
8 East Tower Circle
Ormond Beach, FL 32174
Phone (386)672-5668

Sending Project No	20373470
Receiving Project No	
Check Box for Consolidated Invoice	☐
Date Prepared	11/18/25
REQUESTED COMPLETION DATE	**11/26/2025**

Sending Region	IR20-New Orleans	Sending Project Mgr	Mary Kathryn Brenner
Receiving Region	IR35-Ormand Beach	External Client	W&T Offshore/Aquasition II LLC
State of Sample Origin	AL	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units _____ Report Wet or Dry Weight? Wet Cert. Needed _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Acode	Acode Desc
CO2 / Specific Conductivity	BP3Z		Other	1	SI-21WET	SUB PASI WET
Hydrogen Sulfide	BP2U		Unpreserved	1	SI-21WET0	SUB PASI WTA

Special Requirements: Report C, QC Limits (C),FR Only no EDD (0)

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☒ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab

When work completed: Original sent to the ABM at the receiving laboratory Copies are made to corporate as needed

WO#: 35999047
PM: RJS Due Date: 11/26/25
CLIENT: PACNEW

Project #
Project Manager:
Client:

Date and Initials of person Examining contents: EAST
Verifying pH: _____

Thermometer Used: T-440 Date: 11/19/25 Time: 1146 Initials: JM

State of Origin: _____ ☐ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp.°C 3.3	(Visual)	+0.1	(Correction Factor)	3.4 (Actual)
Cooler #2 Temp.°C _____	(Visual)	_____	(Correction Factor)	_____ (Actual)
Cooler #3 Temp.°C _____	(Visual)	_____	(Correction Factor)	_____ (Actual)
Cooler #4 Temp.°C _____	(Visual)	_____	(Correction Factor)	_____ (Actual)
Cooler #5 Temp.°C _____	(Visual)	_____	(Correction Factor)	_____ (Actual)
Cooler #6 Temp.°C _____	(Visual)	_____	(Correction Factor)	_____ (Actual)
Recheck for OOT °C _____	(Visual)	_____	(Correction Factor)	_____ (Actual)

☐Samples collected sameday, on ice cooling has begun
☐Samples collected sameday, on ice cooling has begun
☐Samples collected sameday, on ice cooling has begun
☐Samples collected sameday, on ice cooling has begun
☐Samples collected sameday, on ice cooling has begun
☐Samples collected sameday, on ice cooling has begun

Time: _____ Initials: _____

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐Other: _____

Shipping Method: ☑Standard Overnight ☐First Overnight ☐Priority Overnight ☐Ground ☐International Priority ☐Other _____

Tracking # 4814 1206 4215

Custody Seal Present: ☑Yes ☐No Seal properly placed and intact: ☑Yes ☐No

Ice: ☑Wet ☐Blue ☐Dry ☐None ☐Melted

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☑None ☐Other: _____

Samples shorted to lab: ☐Yes ☐No (If yes, complete the following)
Shorted Date: _____ Shorted Time: _____
Bottle Quantity / Type: _____

Chain of Custody:	**Present:** ☑Yes ☐No | **Filled Out:** ☑Yes ☐No ☐N/A | **Sampler Name:** ☐Yes ☐No ☑N/A			
	Relinquished To Pace: ☑Yes ☐No ☐N/A | **Sampling Date(s):** ☑Yes ☐No ☐N/A | **Sampling Time(s):** ☑Yes ☐No ☐N/A			
Samples Arrived within Hold Time	☑Yes	☐No	☐N/A	Comments:
Rush Turnaround Requested on COC	☐Yes	☑No	☐N/A	Comments:
Sufficient Volume	☑Yes	☐No	☐N/A	Comments:
Correct Containers Used	☑Yes	☐No	☐N/A	Comments:
Containers Intact	☑Yes	☐No	☐N/A	Comments:
Sample Labels Match COC (Sample ID, Date/Time of Collection)	☐Yes	☑No	☐N/A	Comments: NO sample ID on containers, matched by ID's label
All containers needing acid / base preservation have been checked	☑Yes	☐No	☐N/A	**Preservation Information**
All containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, PFAS	☑Yes	☐No	☐N/A	**Preservative:** _____ **Date:** _____ **Lot / Trace:** _____ **Time:** _____ **Amount added (mL):** _____ **Initials:** _____
~~Headspace in Volatile Vials? (>6mm)~~	~~☐Yes~~	~~☐No~~	~~☑N/A~~	
Trip Blank Present:	☐Yes	☐No	☑N/A	

Comments / Resolutions (use back for additional comments): _____

Logged by: EAST Reviewed by: ZMJ

ALABAMA
OIL & GAS BOARD

EXHIBIT 3

Docket No. 2-19-26-03

Prepared by Leigh Blake

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

ALABAMA OIL & GAS BOARD

OIL & GAS BOARD
Received
JAN 29 2026

Exhibit No: 3
Petitioner: Board
Docket No. 2-19-26-03
Item No: 3 Date: 2-19-26
Witness: Leigh Blake
Received by: EP

AFFIDAVIT OF LEIGH BLAKE

STATE OF ALABAMA

COUNTY OF MOBILE

Before me, the undersigned notary public in and for said county in said state, personally appeared Leigh Blake and testified to the following:

My name is Leigh Blake. I am presently employed by the State Oil and Gas Board of Alabama (hereinafter referred to as "Board"). My current position with the Board is Manager, South Alabama Field Operations. In my position, I am responsible for oil and gas operations in South Alabama. In my position, I am familiar with the operations of W&T Offshore, Inc., in offshore Alabama waters.

Currently, W&T Offshore, Inc., operates thirty-nine (39) wells (35 offshore wells and four saltwater disposal wells). Twenty-two (22) of the wells are producing gas wells; fourteen are classified as "temporarily abandoned," and one saltwater disposal well is classified as "temporarily abandoned."

On December 12, 2024, in Order No. 2024-49 the Board ordered W&T Offshore, Inc., to repair and produce or plug and abandon the State Lease 615 #1 Well, Permit No. 6109-OS-34-B, by December 31, 2025. The well is located in Tract 78, Bon Secour Bay Field, Mobile Bay Area, Baldwin County, Alabama.

In connection with this State Lease 615 #1 Well, at prior hearings, W&T Offshore Inc., presented evidence that the well is not producing and is due to be repaired or plugged. Specifically, W&T Offshore Inc., presented evidence that the well has parted tubing that requires installation of a temporary plug to isolate gas in the productive formation from the surface. W&T Offshore Inc., has failed to address this issue and has failed to repair the well.

W&T Offshore, Inc., has failed to comply with the order of the Board. Thus, W&T Offshore, is in violation of said Order No. 2024-49.

Further, Affiant sayeth not.

Leigh Blake
LEIGH BLAKE,
AFFIANT

SWORN to and SUBSCRIBED before me this 28th day of January 2026.

NOTARY PUBLIC

My Commission Expires Sept 1, 2026

CHAD NEWTON NOTARY SEAL My Commission Expires Sept. 1, 2026 PUBLIC ALABAMA STATE AT LARGE

ALABAMA
OIL & GAS BOARD

EXHIBIT 4

Docket No. 2-19-26-04

Prepared by Gordon "Butch" Gregory

Butch Gregory

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

ALABAMA OIL & GAS BOARD

Docket No. 2-19-26-04

Exhibit No: 4

Petitioner: Board

Item No: 4 Date: 2-19-26

Witness: Butch Gregory

Received by: EH

Received JAN 29 2026 OIL & GAS BOARD ENGINEERING DIVISION

AFFIDAVIT OF GORDON "BUTCH" GREGORY

STATE OF ALABAMA

COUNTY OF TUSCALOOSA

Before me, the undersigned notary public in and for said county in said state, personally appeared Gordon "Butch" Gregory and testified to the following:

My name is Gordon "Butch" Gregory. I am presently employed by the State Oil and Gas Board of Alabama (hereinafter referred to as "Board"). My current position with the Board is Oil and Gas Board Manager. In my position, I am primarily responsible for engineering matters related to oil and gas operations in Alabama. In my position, I am familiar with the operations of W&T Offshore, Inc. in offshore Alabama waters.

Currently, W&T Offshore, Inc., operates thirty-nine (39) wells (35 offshore wells and four saltwater disposal wells). Twenty-two (22) of the wells are producing gas wells; fourteen are classified as "temporarily abandoned," and one saltwater disposal wells is classified as "temporarily abandoned."

Rule 400-2-4-.14(1)(b) of the *State Oil and Gas Board of Alabama Administrative Code* provides:

> Any well which is approved for temporary abandonment shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for sections (f) and (j). When casing extends above the water's floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200) feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the water's floor. The cement plug shall be verified by tagging and pressure testing.

The purpose of the above-cited rule is to ensure that the hydrocarbons encountered by an oil and gas well remain isolated in the productive formation, and the productive formation in offshore wells in Alabama is several miles below the surface. The above-cited rule is one of the rules that provides for safe operations. Compliance with the above-cited rule ensures that gas in the producing formation does not migrate uphole, thereby contaminating other formations at shallower depths or endangering personnel working on the platform and the public. Compliance with the rule also prevents the gas in the productive formation from escaping into the atmosphere.

This rule is particularly important in the Alabama offshore wells that produce "sour gas" or hydrogen sulfide, which is produced in association with the natural gas produced.

W&T Offshore, Inc., has failed to set plugs as required by Rule 400-2-4-.14(1)(b) in the following offshore wells:

Well Name	Permit	Field
State Lease 538 #1	4266-OS-23	North Central Gulf - Mobile Area
State Lease 348 (Tract 77) Well #3	9597-OS-43-B-1	Lower Mobile Bay - Mary Ann
State Lease 536, No. 3	11009-OS-65-B	Northwest Gulf - Mobile Area
State Lease 536, Tract 111, Well #4	11293-OS-68-B	South Pelican Island
State Lease 537 No. 3	11434-OS-78-B	Northwest Gulf - Mobile Area

W&T Offshore, Inc., is in violation of the rule.

FURTHER AFFIANT sayeth not.

Butch Gregory

GORDON "BUTCH" GREGORY

SWORN to and SUBSCRIBED before me this 28th day of January 2026.

NOTARY PUBLIC

My Commission Expires 02/02/2028

SEAL

ALABAMA
OIL & GAS BOARD

EXHIBIT 5

Docket No. 2-19-26-05

Prepared by Leigh Blake

Leigh Blake

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

ALABAMA OIL & GAS BOARD

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

Exhibit No: 5
Petitioner: Board
Docket No. 2-19-26-05
Item No: 5 Date: 2-19-26
Witness: Leigh Blake
Received by: EP

AFFIDAVIT OF LEIGH BLAKE

STATE OF ALABAMA

COUNTY OF MOBILE

Before me, the undersigned notary public in and for said county in said state, personally appeared Leigh Blake and testified to the following:

I am presently employed by the State Oil and Gas Board of Alabama (hereinafter referred to as "Board"). My current position with the Board is Manager, South Alabama Field Operations. In my position, I am responsible for oil and gas operations in South Alabama. In my position, I am familiar with the operations of W&T Offshore, Inc., in offshore Alabama waters.

Currently, W&T Offshore, Inc., operates thirty-nine (39) wells (35 offshore wells and four saltwater disposal wells). Twenty-two (22) of the wells are producing gas wells; fourteen are classified as "temporarily abandoned," and one saltwater disposal well is classified as "temporarily abandoned."

Rule 400-2-6-.09(4) of the *State Oil and Gas Board of Alabama Administrative Code* provides as follows:

> **Recertification of Structural Integrity.** Periodic inspections and proper maintenance shall be performed to assure the structural integrity of each platform or fixed structure. Unless otherwise approved by the Supervisor, the structural integrity of each platform or fixed structure shall be recertified every five years. Recertifications of platforms and fixed structures shall be submitted to the Supervisor and shall include a written report of inspections performed in accordance with API RP 2A, and subsequent revisions thereof, and the following certification signed and dated with the title of the company representative: "(Operator) certifies that (platform or structure and identification number) has been inspected in accordance with API RP 2A, and subsequent revisions thereof, and the structural integrity of the (platform or fixed structure) has been verified by a registered professional engineer having a specialty in structural engineering or registered civil engineer specializing in structural design.

The above-cited rule requires a third party to certify periodically the structural integrity of offshore platforms. The rule ensures that the platforms, which are located in the offshore waters of the State, will remain stable and structurally sound thereby protecting the workers on the platform, the public and the sensitive Mobile Bay environment.

W&T Offshore, Inc., has failed to submit the required Recertifications for the following offshore platforms as required by the above-cited rule: (1) offshore platforms MB-112BQ, MB-

112BA, MB-112BD, and MB-112BE located in Northwest Gulf Field, Mobile County, Alabama; (2) offshore platforms MB-113, MB-113JA, MB-113JB, MB-113JC, MB-113JD/JF, and MB-113JE located in Fairway Field, Mobile County, Alabama; and (3) offshore platform MB-115CD located in North Central Gulf Field, Baldwin and Mobile Counties, Alabama.

W&T Offshore Inc., is in violation of the rule.

Further, Affiant sayeth not.

Leigh Blake

LEIGH BLAKE,
AFFIANT

SWORN to and SUBSCRIBED before me this 28th day of January 2026.

NOTARY PUBLIC

My Commission Expires Sep 1, 2026

CHAD NEWTON NOTARY PUBLIC ALABAMA STATE AT LARGE
NOTARIAL SEAL
My Comm. Expires Sept. 1, 2026

ALABAMA
OIL & GAS BOARD

EXHIBIT 6

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Gordon "Butch" Gregory

Butch Gregory

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

ALABAMA OIL & GAS BOARD

Exhibit No: 6
Petitioner: Board
Item No: 1-5
Witness: Butch Gregory
Received by: EP

OIL & GAS BOARD Received JAN 29 2026 LEGAL DIVISION

AFFIDAVIT OF GORDON "BUTCH" GREGORY

STATE OF ALABAMA

COUNTY OF TUSCALOOSA

Before me, the undersigned notary public in and for said county in said state, personally appeared Gordon "Butch" Gregory and testified to the following:

I am presently employed by the State Oil and Gas Board of Alabama (hereinafter referred to as "Board"). My current position with the Board is Oil and Gas Board Manager. In my position, I am primarily responsible for engineering matters related to oil and gas operations in Alabama. In my position, I am familiar with the operations of W&T Offshore, Inc. (hereinafter referred to as "W&T") in offshore Alabama waters.

Currently, W&T operates thirty-nine (39) wells (35 offshore wells and four saltwater disposal wells). Twenty-two (22) of the wells are producing gas wells; fourteen are classified as "temporarily abandoned," and one saltwater disposal well is classified as temporarily abandoned.

W&T operates wells, structures, facilities, fields, plants, and associated pipelines (hereafter referred to as "the W&T Facilities") located in offshore waters of Mobile Bay, Alabama, and/or located on nearby adjacent onshore lands. The following is a list of wells and processing facilities operated by W&T in connection with its offshore operations:

	Permit Number	Name	Type	Status	Field
1	9962-OS-44-B	STATE LEASE 701 (TRACT 75) #1	GAS	TA	Aloe Bay
2	12604-OS-90-B	STATE LEASE 701, TRACT 75, WELL NO. 2	Undesignated	TA	Aloe Bay
3	4068-OS-21	STATE LEASE 535 #1	GAS	PR	Bon Secour Bay
4	6109-OS-34-B	STATE LEASE 615 #1	GAS	TA	Bon Secour Bay
5	11825-OS-82-B	STATE LEASE 535 (TR. 63) #2	GAS	PR	Bon Secour Bay
6	12309-OS-86-B	STATE LEASE 613 TR. 64 #2	GAS	PR	Bon Secour Bay
7	3632-OS-15	STATE LEASE 534 #1	GAS	PR	Bon Secour Bay
8	4477-OS-25-B	STATE LEASE 531 #1	GAS	PR	Fairway
9	5210-OS-32-B	STATE LEASE 532 #1	GAS	PR	Fairway
10	7697-OS-39	STATE LEASE 531 #2	GAS	PR	Fairway
11	9477-OS-41-B	STATE LEASE 531 #3	GAS	TA	Fairway
12	9540-OS-42	STATE LEASE 531 #4	GAS	PR	Fairway
13	12340-OS-87-B	SL 531 #5	GAS	PR	Fairway
14	3548-OS-11	STATE LEASE 348 #1	GAS	PR	Lower Mobile Bay - Mary Ann
15	7080-OS-35-B	STATE LEASE 350 (TRACT 95) #3	GAS	PR	Lower Mobile Bay - Mary Ann
16	9597-OS-43-B-1	STATE LEASE 348 (TRACT 77) #3	GAS	TA	Lower Mobile Bay - Mary Ann

17	14694-OS-95-B	STATE LEASE 348, TRACT 77, NO. 5	GAS	PR	Lower Mobile Bay - Mary Ann
18	2543-OS-3-B	STATE LEASE 347 #1	GAS	TA	Lower Mobile Bay - Mary Ann
19	3135-OS-6-B	STATE LEASE 349 #2	GAS	TA	Lower Mobile Bay - Mary Ann
20	3840-OS-19-B	STATE LEASE 348 (TRACT 77) #2	GAS	PR	Lower Mobile Bay - Mary Ann
21	13485-OS-94-B	STATE LEASE 347, TRACT 76, #3	GAS	PR	Lower Mobile Bay - Mary Ann
22	4266-OS-23	STATE LEASE 538 #1	GAS	TA	North Central Gulf - Mobile Area
23	9863-OS-46-B	STATE LEASE 624 #2	GAS	PR	North Central Gulf - Mobile Area
24	9985-OS-51-B	State Lease 539 #1	GAS	TA	North Central Gulf - Mobile Area
25	11180-OS-67-B	STATE LEASE 624 #3	GAS	PR	North Central Gulf - Mobile Area
26	12005-OS-83-B	SL 624 #4	GAS	PR	North Central Gulf - Mobile Area
27	12393-OS-88-B	STATE LEASE 538, TRACT 115, WELL NO. 2	GAS	PR	North Central Gulf - Mobile Area
28	15847-OS-96	STATE LEASE 538, TRACT 115, WELL NO. 3	GAS	TA	North Central Gulf - Mobile Area
29	4131-OS-22	STATE LEASE 537 #1	GAS	PR	Northwest Gulf - Mobile Area
30	9934-OS-47	STATE LEASE 536 #2	GAS	PR	Northwest Gulf - Mobile Area
31	10211-OS-54-B	STATE LEASE 536 #1	GAS	PR	Northwest Gulf - Mobile Area
32	11009-OS-65-B	STATE LEASE 536 #3	GAS	TA	Northwest Gulf - Mobile Area
33	11434-OS-78-B	STATE LEASE 537 #3	GAS	TA	Northwest Gulf - Mobile Area
34	12155-OS-85	S/L 537 112-4	GAS	TA	Northwest Gulf - Mobile Area
35	11293-OS-68-B	STATE LEASE 536 #4	GAS	TA	South Pelican Island
36	5504-SWD-88-1	MOBILE BAY TREATING FACILITY SWD #1	SWD	AC	(Onshore Treating Facility)
37	5505-SWD-88-2	MOBILE BAY TREATING FACILITY SWD #2	SWD	AC	(Onshore Treating Facility)
38	16222-SWD-10-03	MOBILE BAY TREATING FACILITY SWD #3	SWD	AC	(Onshore Treating Facility)
39	9163-SWD-90-11	YELLOWHAMMER PLANT SWD 37 #1	SWD	TA	(Yellow Hammer Plant)
40		ONSHORE TREATING FACILITY	PLANT	AC	
41		YELLOWHAMMER PLANT	PLANT	Inactive	

W&T conducts its offshore operations from twenty-six (26) offshore platforms.

W&T utilizes the Onshore Treatment Facility, located in south Mobile County, to process hydrocarbons produced offshore. Furthermore, W&T is the operator of a separate inactive processing plant described as the Yellowhammer Plant.

In association with its offshore operations, W&T operates a pipeline system that consists of pipelines that transport produced gas, produced liquids, and fuel gas under Mobile Bay. Ultimately, the pipeline system transports the produced gas to the onshore treatment facility for processing.

Based upon information presently available to the Board, the reasonable and expected cost of properly plugging, abandoning and removing the W&T facilities in accordance with applicable state (and federal) regulations is in the range of $200 million to $230 million in total.

In conducting its operations, W&T has failed to comply with multiple Orders of the Board, violated rules and regulations of the Board, and has failed to respond properly to letters of inquiry or instruction.

W&T applied for and was approved by the State Oil and Gas Board in regard to assuming the duties of being the designated Operator of the W&T wells and facilities. At that time, W&T submitted or identified the following security bonds that existed and were available for insuring proper plugging, abandonment and removal of its facilities:

- Surety bond posted with the Board in the amount of $5 million issued by Indemnity National Insurance Company.
- Surety bond posted with the Board in the amount of $2.5 million issued by Indemnity National Insurance Company.
- Performance bond that W&T posted with Exxon Mobil Corporation in the amount of $27,300,000.00.

W&T is no longer in compliance with the duties of a designated Operator as specified under the Rules, Regulations and Orders of the Alabama State Oil and Gas Board.

Further affiant sayeth not.

Butch Gregory

GORDON G. "BUTCH" GREGORY
AFFIANT

SWORN to and SUBSCRIBED before me this 28th day of January 2026.

Heather Fleming

NOTARY PUBLIC

My Commission Expires 02/02/2028

SEAL

ALABAMA
OIL & GAS BOARD

EXHIBIT 7

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

Marvin Rogers

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. William Williford
5718 Westheimer Road
Houston, TX 77057

9590 9402 5907 0049 9852 42

2. Article Number (Transfer from service label)

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COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☑ Agent
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

01/20/26

D. Is delivery address different from Item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
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PS Form 3811, July 2015 PSN 7530-02-000-9053

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PO Box 869999
Tuscaloosa, AL 35486-6999

ALABAMA OIL & GAS BOARD

Exhibit No: 7
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Marvin Rogers
Received by: ep

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Houston, TX 77057

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PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

STATE OIL AND GAS BOARD OF ALABAMA

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

January 16, 2026

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

CERTIFIED MAIL

Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

RE: Motions by the State Oil and Gas Board; W&T Offshore, Inc.

Dear Mr. Williford:

This is to notify you that the attached Motions by the Alabama Oil and Gas Board are set for hearing on Thursday, February 19, 2025, at 10:00 a.m. in the hearing room of the State Oil and Gas Board at 420 Hackberry Lane, Tuscaloosa, AL.

Please call if you have any questions.

Sincerely,

Marvin Rogers
General Counsel
Assistant Attorney General

jst

Enclosures: Motions by the Board

CC:
Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Docket No. 2-19-26-01

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with the following State Oil and Gas Board Orders:

(1) Order No. 2024-45 dated December 12, 2024, in which the State Oil and Gas Board ("Board") ordered W&T Offshore, Inc. to plug and abandon State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well and remove the associated platform by December 31, 2025;

(2) Order No. 2024-46 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 538, Tract 115, Well No. 3 by June 30, 2025[1] and remove the associated platform by December 31, 2025; and

(3) Order No. 2025-48 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 537 Tract 112 #4 Well by June 30, 2025, and remove the associated platform by December 31, 2025.

The State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well are located in Aloe Bay Field in Mobile County, Alabama. The State Lease 538, Tract 115, Well No. 3 is located in North Central Gulf Field in Baldwin County, Alabama. The State Lease 537 Tract 112 #4 Well is located in Northwest Gulf Field – Mobile Area in Mobile County, Alabama.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board orders by failing to plug and abandon the specified wells and remove the specified offshore platforms in accordance with the referenced Orders.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety

[1] W&T Offshore, Inc. has partially plugged the State Lease 538, Tract 115, Well No. 3 Well.

bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-02

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-3-.02 (3) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Notification Subsequent to Occurrence of Activity for a Spill or Leak and Rule 400-2-8-.03 relating to Pollution Prevention and Control. Rule 400-2-8-.03, relating to Pollution Prevention and Control, provides inter alia that, "All spills or leakage of oil and liquid substances not approved for discharge shall be reported orally to the Supervisor or his representative within the following limits: . . . immediately, if spill or leakage is more than one (1) gallon in the aggregate. Within fifteen (15) days after reporting a spill or leakage, . . . Form OGB-27, Notification of Fire, Spill, Leak, or Blowout Incident Report, shall be filed with the Supervisor describing the location, size, and cause of such spill or leakage, action, and the effectiveness of removal and cleanup operations." Furthermore, the Rule requires that, "The operator shall immediately take the appropriate action to clean up spills and repair leaks. Additionally, the operator shall notify other appropriate governmental agencies of the incident."

The Board avers that the offshore operations of W&T Offshore, Inc. have resulted in multiple leaks and spills of substances not approved for discharge and that W&T Offshore, Inc. has failed to comply with the above-quoted Rule relating to Pollution Prevention and Control. The Board further avers that W&T Offshore, Inc. has failed to timely notify the Board concerning every such spill or leak. Further, the Board avers that W&T Offshore, Inc. failed to submit pertinent information to the Board such as the "Estimated Volume of Spill or Leak."

Prior to commencing oil and gas exploration in offshore waters, Alabama established a policy of "zero discharge" of any type into offshore waters.[1] This "zero discharge" policy remains in effect through the Board's current rules and regulations. The Board avers that the multiple leaks and spills into Mobile Bay and Alabama's offshore waters are in violation of

---

[1] U.S. Department of the Interior, "History of Coastal Alabama Natural Gas Exploration and Development", "Zero Discharge Policy—Settlement Agreement", March 1999. Page 5-6; Statement of James Helis, Environment and Regulatory Affairs manager at Public Hearing, U.S. Corps of Engineers and Alabama Water Improvement Commission, April 25, 1979; Statement, Kenneth F. Keller, President and General Manager, Mobil Oil Exploration & Producing Southeast Inc. "no discharge" obligation.

Alabama's "zero discharge" policy and Rule 400-2-8-.03 of the *State Oil and Gas Board of Alabama Administrative Code*.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines for violations of the Board's Rules and Regulations. Furthermore, the Board may issue such other sanctions that the Board deems appropriate, such as ordering cessation of certain operations, wells or related facilities to be plugged, shut-in, or removed, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, and/or collecting proceeds of the surety bond. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-03

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Order No. 2024-49 dated December 12, 2024, in which the State Oil and Gas Board of Alabama ("Board") ordered W&T Offshore, Inc. to repair and produce or plug and abandon the State Lease 615 #1 Well by December 31, 2025.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board order by failing to repair and produce or plug and abandon the State Lease 615 #1 Well. The State Lease 615 #1 Well is located in Tract 78, Bon Secour Bay Field, Lower Mobile Bay Area, Baldwin County, Alabama.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-04

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Temporary Abandoned Status for Offshore Wells. Rule 400-2-4-.14 (1) (b) provides inter alia that,

> Any well which is approved for temporary abandonment shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for sections (f) and (j). When casing extends above the waters floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200) feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the waters floor. The cement plug shall be verified by tagging and pressure testing.

The Board avers that W&T Offshore, Inc. has failed to set the plugs and/or otherwise conduct the activities required by Rule 400-2-4-.14 (1) (b) and further avers that, because of the foregoing, the following wells operated by W&T Offshore, Inc. are temporarily abandoned in a non-compliant manner in context with the above-cited rule:

Well Name	Permit	Field
State Lease 538 #1	4266-OS-23	North Central Gulf - Mobile Area
State Lease 348 (Tract 77) Well #3	9597-OS-43-B-1	Lower Mobile Bay - Mary Ann
State Lease 536, No. 3	11009-OS-65-B	Northwest Gulf - Mobile Area
State Lease 536, Tract 111, Well #4	11293-OS-68-B	South Pelican Island
State Lease 537 No. 3	11434-OS-78-B	Northwest Gulf - Mobile Area

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-05

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show Cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Rule 400-2-6-.09 (4) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Recertification of Structural Integrity of Platforms and Fixed Structures. Rule 400-2-6-.09 (4) states:

> **Recertification of Structural Integrity.** Periodic inspections and proper maintenance shall be performed to assure the structural integrity of each platform or fixed structure. Unless otherwise approved by the Supervisor, the structural integrity of each platform or fixed structure shall be recertified every five years. Recertifications of platforms and fixed structures shall be submitted to the Supervisor and shall include a written report of inspections performed in accordance with API RP 2A, and subsequent revisions thereof, and the following certification signed and dated with the title of the company representative: "(Operator) certifies that (platform or structure and identification number) has been inspected in accordance with API RP 2A, and subsequent revisions thereof, and the structural integrity of the (platform or fixed structure) has been verified by a registered professional engineer having a specialty in structural engineering or registered civil engineer specializing in structural design.

The Board avers that W&T Offshore, Inc. has failed to submit the required Recertifications for the following offshore platforms: (1) offshore platforms MB-112BQ, MB-112BA, MB-112BD, and MB-112BE located in Northwest Gulf Field, Mobile County, Alabama; (2) offshore platforms MB-113, MB-113JA, MB-113JB, MB-113JC, MB-113JD/JF, and MB-113JE located in Fairway Field, Mobile County, Alabama; and (3) offshore platform MB-115CD located in North Central Gulf Field, Baldwin and Mobile Counties, Alabama. The Board has communicated multiple times with W&T Offshore, Inc. about this serious deficiency, but W&T Offshore, Inc. has nevertheless failed to complete or perform the necessary Recertifications. Most recently, the Board again communicated and inquired about these continuing deficiencies by letter to W&T Offshore, Inc. dated August 27, 2025, and W&T Offshore, Inc. has altogether ignored and failed to respond to such Recertification deficiency notice and inquiry. The Board considers such Recertifications to be integral to protecting the health, safety, welfare, and environment of the Mobile Bay area.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

ALABAMA
OIL & GAS BOARD

EXHIBIT 8

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

Marvin Rogers

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Thomas Elkins
238 Bedford Way
Franklin, TN 37064

9590 9402 5907 0049 9852 66

2 Article Number (Transfer from service label)
9589 0710 5270 1973 2577 40

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name) C. Date of Deliver

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receip

USPS TRACKING #

9590 9402 5907 0049 9852 66

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

United States Postal Service

• Sender: Please print your name, address, and ZIP+4® in this box•

Jamie St. Clair
PO Box 869999
Tuscaloosa, AL 35486-6999

ALABAMA OIL & GAS BOARD

Exhibit No: 8
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Marvin Rogers
Received by: EP

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Certified Mail Fee
$
Extra Services &
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage
$
Total Postage and Fees
$

Postmark Here

Sent To
Mr. Thomas Elkins
Street and Apt. No., or PO Box No.
238 Bedford Way
City, State, ZIP+4®
Franklin, TN 37064

9589 0710 5270 1973 2577 40

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

STATE OIL AND GAS BOARD OF ALABAMA

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

January 16, 2026

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

CERTIFIED MAIL

Mr. Thomas Elkins
President
Indemnity National Insurance Company
238 Bedford Way
Franklin, TN 37064

RE: Motions by the State Oil and Gas Board; W&T Offshore, Inc.

Dear Mr. Elkins:

This is to notify you that the attached Motions by the Alabama Oil and Gas Board are set for hearing on Thursday, February 19, 2025, at 10:00 a.m. in the hearing room of the State Oil and Gas Board at 420 Hackberry Lane, Tuscaloosa, AL.

I am attaching hereto copies of two surety bonds issued to the Oil and Gas Board by Indemnity National Insurance Company.

Please call if you have any questions.

Sincerely,

Marvin Rogers
General Counsel
Assistant Attorney General

jst

Enclosures: Motions by the Board
Surety bonds

CC:
Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Docket No. 2-19-26-01

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with the following State Oil and Gas Board Orders:

(1) Order No. 2024-45 dated December 12, 2024, in which the State Oil and Gas Board ("Board") ordered W&T Offshore, Inc. to plug and abandon State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well and remove the associated platform by December 31, 2025;

(2) Order No. 2024-46 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 538, Tract 115, Well No. 3 by June 30, 2025[1] and remove the associated platform by December 31, 2025; and

(3) Order No. 2025-48 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 537 Tract 112 #4 Well by June 30, 2025, and remove the associated platform by December 31, 2025.

The State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well are located in Aloe Bay Field in Mobile County, Alabama. The State Lease 538, Tract 115, Well No. 3 is located in North Central Gulf Field in Baldwin County, Alabama. The State Lease 537 Tract 112 #4 Well is located in Northwest Gulf Field – Mobile Area in Mobile County, Alabama.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board orders by failing to plug and abandon the specified wells and remove the specified offshore platforms in accordance with the referenced Orders.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety

[1] W&T Offshore, Inc. has partially plugged the State Lease 538, Tract 115, Well No. 3 Well.

bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-02

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-3-.02 (3) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Notification Subsequent to Occurrence of Activity for a Spill or Leak and Rule 400-2-8-.03 relating to Pollution Prevention and Control. Rule 400-2-8-.03, relating to Pollution Prevention and Control, provides inter alia that, "All spills or leakage of oil and liquid substances not approved for discharge shall be reported orally to the Supervisor or his representative within the following limits: . . . immediately, if spill or leakage is more than one (1) gallon in the aggregate. Within fifteen (15) days after reporting a spill or leakage, . . . Form OGB-27, Notification of Fire, Spill, Leak, or Blowout Incident Report, shall be filed with the Supervisor describing the location, size, and cause of such spill or leakage, action, and the effectiveness of removal and cleanup operations." Furthermore, the Rule requires that, "The operator shall immediately take the appropriate action to clean up spills and repair leaks. Additionally, the operator shall notify other appropriate governmental agencies of the incident."

The Board avers that the offshore operations of W&T Offshore, Inc. have resulted in multiple leaks and spills of substances not approved for discharge and that W&T Offshore, Inc. has failed to comply with the above-quoted Rule relating to Pollution Prevention and Control. The Board further avers that W&T Offshore, Inc. has failed to timely notify the Board concerning every such spill or leak. Further, the Board avers that W&T Offshore, Inc. failed to submit pertinent information to the Board such as the "Estimated Volume of Spill or Leak."

Prior to commencing oil and gas exploration in offshore waters, Alabama established a policy of "zero discharge" of any type into offshore waters.[1] This "zero discharge" policy remains in effect through the Board's current rules and regulations. The Board avers that the multiple leaks and spills into Mobile Bay and Alabama's offshore waters are in violation of

---

[1] U.S. Department of the Interior, "History of Coastal Alabama Natural Gas Exploration and Development", "Zero Discharge Policy—Settlement Agreement", March 1999. Page 5-6; Statement of James Helis, Environment and Regulatory Affairs manager at Public Hearing, U.S. Corps of Engineers and Alabama Water Improvement Commission, April 25, 1979; Statement, Kenneth F. Keller, President and General Manager, Mobil Oil Exploration & Producing Southeast Inc. "no discharge" obligation.

Alabama's "zero discharge" policy and Rule 400-2-8-.03 of the *State Oil and Gas Board of Alabama Administrative Code*.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines for violations of the Board's Rules and Regulations. Furthermore, the Board may issue such other sanctions that the Board deems appropriate, such as ordering cessation of certain operations, wells or related facilities to be plugged, shut-in, or removed, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, and/or collecting proceeds of the surety bond. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-03

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Order No. 2024-49 dated December 12, 2024, in which the State Oil and Gas Board of Alabama ("Board") ordered W&T Offshore, Inc. to repair and produce or plug and abandon the State Lease 615 #1 Well by December 31, 2025.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board order by failing to repair and produce or plug and abandon the State Lease 615 #1 Well. The State Lease 615 #1 Well is located in Tract 78, Bon Secour Bay Field, Lower Mobile Bay Area, Baldwin County, Alabama.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-04

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Temporary Abandoned Status for Offshore Wells. Rule 400-2-4-.14 (1) (b) provides inter alia that,

> Any well which is approved for temporary abandonment shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for sections (f) and (j). When casing extends above the waters floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200) feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the waters floor. The cement plug shall be verified by tagging and pressure testing.

The Board avers that W&T Offshore, Inc. has failed to set the plugs and/or otherwise conduct the activities required by Rule 400-2-4-.14 (1) (b) and further avers that, because of the foregoing, the following wells operated by W&T Offshore, Inc. are temporarily abandoned in a non-compliant manner in context with the above-cited rule:

Well Name	Permit	Field
State Lease 538 #1	4266-OS-23	North Central Gulf - Mobile Area
State Lease 348 (Tract 77) Well #3	9597-OS-43-B-1	Lower Mobile Bay - Mary Ann
State Lease 536, No. 3	11009-OS-65-B	Northwest Gulf - Mobile Area
State Lease 536, Tract 111, Well #4	11293-OS-68-B	South Pelican Island
State Lease 537 No. 3	11434-OS-78-B	Northwest Gulf - Mobile Area

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-05

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show Cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Rule 400-2-6-.09 (4) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Recertification of Structural Integrity of Platforms and Fixed Structures. Rule 400-2-6-.09 (4) states:

> **Recertification of Structural Integrity.** Periodic inspections and proper maintenance shall be performed to assure the structural integrity of each platform or fixed structure. Unless otherwise approved by the Supervisor, the structural integrity of each platform or fixed structure shall be recertified every five years. Recertifications of platforms and fixed structures shall be submitted to the Supervisor and shall include a written report of inspections performed in accordance with API RP 2A, and subsequent revisions thereof, and the following certification signed and dated with the title of the company representative: "(Operator) certifies that (platform or structure and identification number) has been inspected in accordance with API RP 2A, and subsequent revisions thereof, and the structural integrity of the (platform or fixed structure) has been verified by a registered professional engineer having a specialty in structural engineering or registered civil engineer specializing in structural design.

The Board avers that W&T Offshore, Inc. has failed to submit the required Recertifications for the following offshore platforms: (1) offshore platforms MB-112BQ, MB-112BA, MB-112BD, and MB-112BE located in Northwest Gulf Field, Mobile County, Alabama; (2) offshore platforms MB-113, MB-113JA, MB-113JB, MB-113JC, MB-113JD/JF, and MB-113JE located in Fairway Field, Mobile County, Alabama; and (3) offshore platform MB-115CD located in North Central Gulf Field, Baldwin and Mobile Counties, Alabama. The Board has communicated multiple times with W&T Offshore, Inc. about this serious deficiency, but W&T Offshore, Inc. has nevertheless failed to complete or perform the necessary Recertifications. Most recently, the Board again communicated and inquired about these continuing deficiencies by letter to W&T Offshore, Inc. dated August 27, 2025, and W&T Offshore, Inc. has altogether ignored and failed to respond to such Recertification deficiency notice and inquiry. The Board considers such Recertifications to be integral to protecting the health, safety, welfare, and environment of the Mobile Bay area.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

MR

OGB-4

STATE OIL AND GAS BOARD OF ALABAMA

Bond (Blanket)

RECEIVED

SEP 25 2020

STATE OIL AND GAS BOARD OF ALABAMA

Form OGB-4, Rev. 07/13

N-4000195

Surety Bond Number

Know All Men By These Presents, That I/we W & T Offshore, Inc., a Texas Corporation, as principal(s), and Indemnity National Insurance Company, a Mississippi Corporation, as surety, are held hereby and firmly bound unto the State of Alabama in the penal sum of Five Million and NO/100 ~~Thousand~~ Dollars ($ 5,000,000.00) lawful money of the United States, for the faithful payment of which we hereby bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally. The surety shall pay to the State Oil and Gas Board the full amount of this bond upon demand by the State Oil and Gas Board.

The conditions of this obligation are that whereas the above bounden principal(s) propose(s) to commence or continue the drilling, operation, or production of one or more wells in search of oil or gas, or the drilling or operation of one or more Class II injection wells, or the drilling or operation of one or more wells for the underground storage of gas in reservoirs, and this bond shall apply to all such wells drilled, operated, or produced in the State of Alabama by the aforesaid principal(s).

Now, therefore, if one or more of said wells is drilled, operated, or produced, by the principal including production facilities, processing facilities, injection facilities, plants, pipelines, and other equipment associated with said wells in compliance with state law, the rules, regulations, now existing or hereafter promulgated and orders of the State Oil and Gas Board, then the obligation is void; otherwise the same shall be and remain in full force.

In Testimony Whereof, Witness Our Hands, this 15th day of September, 20 20

Stephanie Schroeder
Signature

Stephanie L. Schroeder
Print or Type Name

Chief Technical Officer
Position or Officer

W & T Offshore, Inc.
Nine Greenway Plaza, Suite 300
Houston, Texas 77046
Attn: General Counsel
Name and Address of Principal(s)

In Testimony Whereof, Witness Our Hands, this 15th day of September, 20 20

Michele K. Tyson

Michele K. Tyson
Attorney-in-Fact

Surety Signature

Edwin H. Frank, III
Signature of Duly Authorized Agent of Said Surety

Indemnity National Insurance Company
238 Bedford Way
Franklin, Tennessee 37064
Name and Address of Surety

IndemCo
777 Post Oak Boulevard, Suite 330
Houston, Texas 77056
Name and Address of Agent

Indemnity National Insurance Company
238 Bedford Way
Franklin, TN 37064

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: that Indemnity National Insurance Company, a Mississippi corporation, (hereinafter the "Company"), does hereby constitute and appoint: Edwin H. Frank III, Michele K. Tyson, Russell Brown, Jr. Meredith K. Anderson, Stephen Michael Smith, and Timothy J. Briggs of IndemCo to be its true and lawful Attorney-in-Fact, with full power and authority hereby conferred to sign, seal, and execute on its behalf surety bonds or undertakings and other documents of a similar nature issued in the course of its business up to a penal sum not to exceed Ten million dollars ($10,000,000.00)********** each, and to bind the Company thereby as fully and to the same extent as if the same were signed by the duly authorized officers of the Company.

This appointment is made under and executed pursuant to and by authority of the following Minutes of Special Actions Taken by Written Consent of the Board of Directors, which is now in full force and effect:

Authorization to Appoint Attorneys-in-Fact and the Use of Facsimile Signatures and Facsimile Seals for the Purpose of Issuing Bonds:

RESOLVED: That the president or any vice president may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the Company to execute and deliver and affix the seal of the Company to bonds and related obligatory certificates and documents; and any one of said officers may remove any such attorney-in-fact or agent and revoke any power previously granted to such person, whether or not such officer appointed the attorney-in-fact or agent.

RESOLVED: That any bonds and related obligatory certificates and documents shall be valid and binding upon the Company,
(i) when signed by the president, or any vice president, and sealed with the Company seal; or
(ii) when duly executed and sealed with the Company seal by one or more attorneys-in-fact or agents pursuant to and within the limits of authority evidenced by the power of attorney issued by the Company to such person or persons a certified copy of which power of attorney must be attached thereto in order for such obligation to be binding upon the Company.

RESOLVED: That the signature of any authorized officer and the seal of the Company may be affixed to any power of attorney or certification thereof authorizing the execution and delivery of any bonds and related obligatory certificates and documents of the Company and such signature and seal then so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Indemnity National Insurance Company has been affixed thereto in Lexington, Kentucky this 6th day of November, 2017.

INDEMNITY NATIONAL INSURANCE CO. CORPORATE SEAL 1993 Mississippi

Indemnity National Insurance Company

By _____
Thomas F. Elkins, President

State of Kentucky
County of Fayette

On this 6th day of November, 2017, before me, a Notary Public, personally came Thomas F. Elkins, to me known, and acknowledged that he is President of Indemnity National Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Indemnity National Insurance Company thereto with the authority and at the direction of said corporation.

DEBORAH A. MURPHY NOTARY PUBLIC STATE AT LARGE KY

By _____
Notary Public

My Commission Expires 09/26/2021

CERTIFICATE

I, James E. Hart, Secretary of Indemnity National Insurance Company, do hereby certify that the foregoing Power of Attorney is still in full force and effect, and further certify that the Minutes of Special Actions Taken by Written Consent of the Board of Directors are now in full force and effect.

IN TESTIMONY WHEREOF I have subscribed my name and affixed the seal of said Company. Dated this 15th day of September, 20 20

INDEMNITY NATIONAL INSURANCE CO. CORPORATE SEAL 1993 Mississippi

By _____
James E. Hart, Secretary

MR

OGB- 4

STATE OIL AND GAS BOARD OF ALABAMA

Bond (Blanket)

Form OGB-4, Rev. 07/13

N-4000220
Surety Bond Number

Know All Men By These Presents, That I/we W & T Offshore, Inc., a Texas Corporation, as principal(s), and Indemnity National Insurance Company, a Mississippi Corporation, as surety, are held hereby and firmly bound unto the State of Alabama in the penal sum of Two Million Five Hundred Thousand Dollars ($ 2,500,000.00) lawful money of the United States, for the faithful payment of which we hereby bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally. The surety shall pay to the State Oil and Gas Board the full amount of this bond upon demand by the State Oil and Gas Board.

The conditions of this obligation are that whereas the above bounden principal(s) propose(s) to commence or continue the drilling, operation, or production of one or more wells in search of oil or gas, or the drilling or operation of one or more Class II injection wells, or the drilling or operation of one or more wells for the underground storage of gas in reservoirs, and this bond shall apply to all such wells drilled, operated, or produced in the State of Alabama by the aforesaid principal(s).

Now, therefore, if one or more of said wells is drilled, operated, or produced, by the principal including production facilities, processing facilities, injection facilities, plants, pipelines, and other equipment associated with said wells in compliance with state law, the rules, regulations, now existing or hereafter promulgated and orders of the State Oil and Gas Board, then the obligation is void; otherwise the same shall be and remain in full force.

In Testimony Whereof, Witness Our Hands, this 15 day of September, 20 20

Signature

Stephen L. Schneider

Print or Type Name

Chief Technical Officer

Position or Office

W & T Offshore, Inc.
Nine Greenway Plaza, Suite 300
Houston, Texas 77046
Attn: General Counsel

Name and Address of Principal(s)

In Testimony Whereof, Witness Our Hands, this 15th day of September, 20 20

Michele K. Tyson

Michele K. Tyson
Attorney-in-Fact

Surety Signature

Edwin H. Frank, III

Signature of Duly Authorized Agent of Said Surety

Indemnity National Insurance Company
238 Bedford Way
Franklin, Tennessee 37064

Name and Address of Surety

IndemCo
777 Post Oak Boulevard, Suite 330
Houston, Texas 77056

Name and Address of Agent

Indemnity National Insurance Company
238 Bedford Way
Franklin, TN 37064

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: that Indemnity National Insurance Company, a Mississippi corporation, (hereinafter the "Company"), does hereby constitute and appoint: Edwin H. Frank III, Michele K. Tyson, Russell Brown, Jr. Meredith K. Anderson, Stephen Michael Smith, and Timothy J. Briggs of IndemCo to be its true and lawful Attorney-in-Fact, with full power and authority hereby conferred to sign, seal, and execute on its behalf surety bonds or undertakings and other documents of a similar nature issued in the course of its business up to a penal sum not to exceed Ten million dollars ($10,000,000.00)********** each, and to bind the Company thereby as fully and to the same extent as if the same were signed by the duly authorized officers of the Company.

This appointment is made under and executed pursuant to and by authority of the following Minutes of Special Actions Taken by Written Consent of the Board of Directors, which is now in full force and effect:

Authorization to Appoint Attorneys-in-Fact and the Use of Facsimile Signatures and Facsimile Seals for the Purpose of Issuing Bonds:

RESOLVED: That the president or any vice president may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the Company to execute and deliver and affix the seal of the Company to bonds and related obligatory certificates and documents; and any one of said officers may remove any such attorney-in-fact or agent and revoke any power previously granted to such person, whether or not such officer appointed the attorney-in-fact or agent.

RESOLVED: That any bonds and related obligatory certificates and documents shall be valid and binding upon the Company,
(i) when signed by the president, or any vice president, and sealed with the Company seal; or
(ii) when duly executed and sealed with the Company seal by one or more attorneys-in-fact or agents pursuant to and within the limits of authority evidenced by the power of attorney issued by the Company to such person or persons a certified copy of which power of attorney must be attached thereto in order for such obligation to be binding upon the Company.

RESOLVED: That the signature of any authorized officer and the seal of the Company may be affixed to any power of attorney or certification thereof authorizing the execution and delivery of any bonds and related obligatory certificates and documents of the Company and such signature and seal then so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Indemnity National Insurance Company has been affixed thereto in Lexington, Kentucky this 6th day of November, 2017.

Indemnity National Insurance Company

By _____
Thomas F. Elkins, President

State of Kentucky
County of Fayette

On this 6th day of November, 2017, before me, a Notary Public, personally came Thomas F. Elkins, to me known, and acknowledged that he is President of Indemnity National Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Indemnity National Insurance Company thereto with the authority and at the direction of said corporation.

By _____
Notary Public

My Commission Expires 09/26/2021

CERTIFICATE

I, James E. Hart, Secretary of Indemnity National Insurance Company, do hereby certify that the foregoing Power of Attorney is still in full force and effect, and further certify that the Minutes of Special Actions Taken by Written Consent of the Board of Directors are now in full force and effect.

IN TESTIMONY WHEREOF I have subscribed my name and affixed the seal of said Company. Dated this 15th day of September, 20 20

By _____
James E. Hart, Secretary

ALABAMA
OIL & GAS BOARD

EXHIBIT 9

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

Marvin Rogers

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION



ALABAMA OIL & GAS BOARD

Exhibit No: 9

Petitioner: Board

Item No: 1-5 Date: 2-19-26

Witness: Marvin Rogers

Received by: EP

STATE OIL AND GAS BOARD OF ALABAMA

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

January 16, 2026

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

CERTIFIED MAIL

U.S. Specialty Insurance Company
13403 Northwest Freeway
Houston, TX 77040

RE: Motions by the State Oil and Gas Board; W&T Offshore, Inc.

Dear Sir or Madam:

This is to notify you that the attached Motions by the Alabama Oil and Gas Board are set for hearing on Thursday, February 19, 2025, at 10:00 a.m. in the hearing room of the State Oil and Gas Board at 420 Hackberry Lane, Tuscaloosa, AL.

I am attaching hereto a copy of the applicable performance bond issued to the Oil and Gas Board by Indemnity National Insurance Company.

Please call if you have any questions.

Sincerely,

Marvin Rogers
General Counsel
Assistant Attorney General

jst

Enclosures: Motions by the Board
Performance bond

CC:
Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Docket No. 2-19-26-01

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with the following State Oil and Gas Board Orders:

(1) Order No. 2024-45 dated December 12, 2024, in which the State Oil and Gas Board ("Board") ordered W&T Offshore, Inc. to plug and abandon State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well and remove the associated platform by December 31, 2025;

(2) Order No. 2024-46 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 538, Tract 115, Well No. 3 by June 30, 2025[1] and remove the associated platform by December 31, 2025; and

(3) Order No. 2025-48 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 537 Tract 112 #4 Well by June 30, 2025, and remove the associated platform by December 31, 2025.

The State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well are located in Aloe Bay Field in Mobile County, Alabama. The State Lease 538, Tract 115, Well No. 3 is located in North Central Gulf Field in Baldwin County, Alabama. The State Lease 537 Tract 112 #4 Well is located in Northwest Gulf Field – Mobile Area in Mobile County, Alabama.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board orders by failing to plug and abandon the specified wells and remove the specified offshore platforms in accordance with the referenced Orders.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety

[1] W&T Offshore, Inc. has partially plugged the State Lease 538, Tract 115, Well No. 3 Well.

bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-02

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-3-.02 (3) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Notification Subsequent to Occurrence of Activity for a Spill or Leak and Rule 400-2-8-.03 relating to Pollution Prevention and Control. Rule 400-2-8-.03, relating to Pollution Prevention and Control, provides inter alia that, "All spills or leakage of oil and liquid substances not approved for discharge shall be reported orally to the Supervisor or his representative within the following limits: . . . immediately, if spill or leakage is more than one (1) gallon in the aggregate. Within fifteen (15) days after reporting a spill or leakage, . . . Form OGB-27, Notification of Fire, Spill, Leak, or Blowout Incident Report, shall be filed with the Supervisor describing the location, size, and cause of such spill or leakage, action, and the effectiveness of removal and cleanup operations." Furthermore, the Rule requires that, "The operator shall immediately take the appropriate action to clean up spills and repair leaks. Additionally, the operator shall notify other appropriate governmental agencies of the incident."

The Board avers that the offshore operations of W&T Offshore, Inc. have resulted in multiple leaks and spills of substances not approved for discharge and that W&T Offshore, Inc. has failed to comply with the above-quoted Rule relating to Pollution Prevention and Control. The Board further avers that W&T Offshore, Inc. has failed to timely notify the Board concerning every such spill or leak. Further, the Board avers that W&T Offshore, Inc. failed to submit pertinent information to the Board such as the "Estimated Volume of Spill or Leak."

Prior to commencing oil and gas exploration in offshore waters, Alabama established a policy of "zero discharge" of any type into offshore waters.[1] This "zero discharge" policy remains in effect through the Board's current rules and regulations. The Board avers that the multiple leaks and spills into Mobile Bay and Alabama's offshore waters are in violation of

[1] U.S. Department of the Interior, "History of Coastal Alabama Natural Gas Exploration and Development", "Zero Discharge Policy—Settlement Agreement", March 1999. Page 5-6; Statement of James Helis, Environment and Regulatory Affairs manager at Public Hearing, U.S. Corps of Engineers and Alabama Water Improvement Commission, April 25, 1979; Statement, Kenneth F. Keller, President and General Manager, Mobil Oil Exploration & Producing Southeast Inc. "no discharge" obligation.

Alabama's "zero discharge" policy and Rule 400-2-8-.03 of the *State Oil and Gas Board of Alabama Administrative Code*.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines for violations of the Board's Rules and Regulations. Furthermore, the Board may issue such other sanctions that the Board deems appropriate, such as ordering cessation of certain operations, wells or related facilities to be plugged, shut-in, or removed, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, and/or collecting proceeds of the surety bond. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-03

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Order No. 2024-49 dated December 12, 2024, in which the State Oil and Gas Board of Alabama ("Board") ordered W&T Offshore, Inc. to repair and produce or plug and abandon the State Lease 615 #1 Well by December 31, 2025.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board order by failing to repair and produce or plug and abandon the State Lease 615 #1 Well. The State Lease 615 #1 Well is located in Tract 78, Bon Secour Bay Field, Lower Mobile Bay Area, Baldwin County, Alabama.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-04

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Temporary Abandoned Status for Offshore Wells. Rule 400-2-4-.14 (1) (b) provides inter alia that,

> Any well which is approved for temporary abandonment shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for sections (f) and (j). When casing extends above the waters floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200) feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the waters floor. The cement plug shall be verified by tagging and pressure testing.

The Board avers that W&T Offshore, Inc. has failed to set the plugs and/or otherwise conduct the activities required by Rule 400-2-4-.14 (1) (b) and further avers that, because of the foregoing, the following wells operated by W&T Offshore, Inc. are temporarily abandoned in a non-compliant manner in context with the above-cited rule:

Well Name	Permit	Field
State Lease 538 #1	4266-OS-23	North Central Gulf - Mobile Area
State Lease 348 (Tract 77) Well #3	9597-OS-43-B-1	Lower Mobile Bay - Mary Ann
State Lease 536, No. 3	11009-OS-65-B	Northwest Gulf - Mobile Area
State Lease 536, Tract 111, Well #4	11293-OS-68-B	South Pelican Island
State Lease 537 No. 3	11434-OS-78-B	Northwest Gulf - Mobile Area

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

Docket No. 2-19-26-05

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show Cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Rule 400-2-6-.09 (4) of the *State Oil and Gas Board of Alabama Administrative Code* relating to Recertification of Structural Integrity of Platforms and Fixed Structures. Rule 400-2-6-.09 (4) states:

> **Recertification of Structural Integrity.** Periodic inspections and proper maintenance shall be performed to assure the structural integrity of each platform or fixed structure. Unless otherwise approved by the Supervisor, the structural integrity of each platform or fixed structure shall be recertified every five years. Recertifications of platforms and fixed structures shall be submitted to the Supervisor and shall include a written report of inspections performed in accordance with API RP 2A, and subsequent revisions thereof, and the following certification signed and dated with the title of the company representative: "(Operator) certifies that (platform or structure and identification number) has been inspected in accordance with API RP 2A, and subsequent revisions thereof, and the structural integrity of the (platform or fixed structure) has been verified by a registered professional engineer having a specialty in structural engineering or registered civil engineer specializing in structural design.

The Board avers that W&T Offshore, Inc. has failed to submit the required Recertifications for the following offshore platforms: (1) offshore platforms MB-112BQ, MB-112BA, MB-112BD, and MB-112BE located in Northwest Gulf Field, Mobile County, Alabama; (2) offshore platforms MB-113, MB-113JA, MB-113JB, MB-113JC, MB-113JD/JF, and MB-113JE located in Fairway Field, Mobile County, Alabama; and (3) offshore platform MB-115CD located in North Central Gulf Field, Baldwin and Mobile Counties, Alabama. The Board has communicated multiple times with W&T Offshore, Inc. about this serious deficiency, but W&T Offshore, Inc. has nevertheless failed to complete or perform the necessary Recertifications. Most recently, the Board again communicated and inquired about these continuing deficiencies by letter to W&T Offshore, Inc. dated August 27, 2025, and W&T Offshore, Inc. has altogether ignored and failed to respond to such Recertification deficiency notice and inquiry. The Board considers such Recertifications to be integral to protecting the health, safety, welfare, and environment of the Mobile Bay area.

Section 9-17-1 et seq, of the *Code of Alabama* (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the *Code of Alabama* (1975).

ARMBRECHTJACKSON LLP
LAWYERS

RSA Tower, 27th Floor
11 North Water Street
Mobile, Alabama 36602

Mailing Address:
Post Office Box 290
Mobile, Alabama 36601

Phone: 251.405.1300
Fax: 251.432.6843

Duane A. Graham
Direct Dial: 251.405.1207
Email: dag@ajlaw.com

September 6, 2019

VIA FEDERAL EXPRESS

S. Marvin Rogers, Esq.
State Oil and Gas Board of Alabama
420 Hackberry Lane
University, Alabama 35486-6999

RE: Petition by W&T Offshore, Inc.
Docket No. 9-10-19-01

STATE OIL AND GAS BOARD
Exhibit No. 28
Petition By W&T
Item No. 1 Date 9-10-19
Testimony Of Graham
Received By

Dear Mr. Rogers:

It occurred to me that our conversations about the private bonding that W&T has may have created some confusion, and the staff requested further details. Accordingly, I enclose the performance bond that W&T has posted with Exxon in conjunction with the recent acquisition of Mobile Bay-related assets. While the bond is not limited only to Alabama assets since W&T's acquisition also included some federal properties, you can see that this bond provides significant benefits to the Board as it specifically addresses the very plugging obligations that are relevant to our petition. The existence of this bond means that there are substantial funds committed to W&T's plugging obligations in addition to whatever amount of bond the Board may require, and we submit that this justifies a lower Board bond than might otherwise be indicated.

Very truly yours,

ARMBRECHT JACKSON LLP

By: _____
Duane A. Graham

DAG:acr
Enclosure

Bond No. B012127

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT we, W & T Offshore, Inc., with its principal office at Nine Greenway Plaza, Suite 300, Houston, Texas 77046, (hereinafter called the "Principal"), and U.S. Specialty Insurance Company, with an address of 13403 Northwest Freeway, Houston, Texas 77040 (hereinafter called the "Surety"), are held and firmly bound unto Exxon Mobil Corporation, Mobil Oil Exploration & Producing Southeast Inc., XH, LLC, Exxon Mobile Bay Limited Partnership, and ExxonMobil U.S. Properties Inc., all with an address of 22777 Springwoods Village Parkway, Spring, Texas (hereinafter collectively called the "Obligee"), in the Penalty Sum of Twenty Seven Million Three Hundred Thousand and No/100 Dollars ($27,300,000.00) lawful money of the United States of America for the payment of which sum the Principal and the Surety bind themselves, their successors and assigns, jointly, severally, and in solido, firmly by these presents.

WHEREAS, Principal and Obligee have entered into that certain Purchase and Sale Agreement dated effective as of January 1, 2019 (hereinafter called the "Agreement"), which Agreement is by reference made a part hereof and which provides for the sale and assignment from Obligee to Principal of the interests of Obligee in certain oil and gas leases and properties, including the oil and gas leases described on Exhibit A to the Agreement (collectively, the "Leases" and each individually, the "Lease"), together with all rights and obligations in connection with the Leases, and also provides for the sale and assignment to Principal of all wells (both abandoned and unabandoned), facilities, equipment and pipelines existing on the Leases as of the date of the Agreement (collectively, the "Wells" and individually, the "Well") (the Leases, Wells and such facilities, equipment and pipelines, being collectively referred to as the "Properties" and each as "Property"); and

WHEREAS, Principal and Surety agree that notwithstanding the subsequent termination of any of the Leases, whether by operation of law or otherwise, this Bond shall remain in full force and effect until Principal has presented satisfactory evidence to Obligee, as set forth below, that all P&A Obligations (as such term is defined below) have been performed and discharged; and

WHEREAS, as used in this Bond, the term "P&A Obligations" means all obligations and liabilities of Principal to abandon, restore and remediate the Properties, whether arising before or after January 1, 2019 (the "Effective Time"), including obligations, as applicable to the Properties, to: (a) obtain plugging exceptions in the operator's name for each Well with a current plugging exception, or permanently plugging and abandoning a Well; (b) plug, abandon, and if necessary, re-abandon each Well; (c) remove all equipment and facilities, including flowlines, and pipelines; (d) close all pits; and (e) restore and remediate the surface, subsurface and sites associated with the Properties; and

WHEREAS, Principal has agreed to deliver to Obligee this Bond, executed by Principal and Surety, at the Closing as defined and contemplated by the Agreement; and

WHEREAS, Surety represents that it is duly authorized by the proper public authorities to transact the business of indemnity and suretyship in the state where it executed this Bond, and represents that it is qualified to be surety and guarantor on bonds and undertakings, which certificate has not been revoked, that it is named in the current Circular 570, published by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury ("Circular 570"); and

WHEREAS, Surety represents that it has duly executed a power of attorney, appointing the hereafter named representative as its duly authorized deputy, as the true and lawful attorney-in-fact of such Surety, upon whom may be served all lawful process in any action or proceeding against such Surety in any court or before any officer, arising, out of or founded upon this Bond or any liability hereunder, and does hereby agree and consent that such service, when so made, shall be valid service upon it, and that such appointment shall continue in force and effect and be irrevocable so long as any liability against it remains outstanding hereunder but if the named representative becomes no longer able to act as the Surety's true attorney-in-fact, the Surety will immediately execute a new power of attorney appointing a replacement representative authorized to act as its true attorney-in-fact, and will promptly so inform Principal and Obligee;

NOW THEREFORE, Principal and Surety agree as follows:

Surety hereby guarantees the full and faithful performance by Principal of, and compliance by Principal with, the P&A Obligations in accordance with all current and future requirements of applicable federal and state law or any agency, authority or body having, jurisdiction or authority over the Properties or any operations thereon, and in accordance with the Leases and the Agreement.

PROVIDED, HOWEVER, whenever the Principal shall present to Obligee satisfactory evidence that all of the P&A Obligations have been performed (such satisfactory evidence shall comprise executed forms or other written documentation as may be required by any governmental authority under applicable law to reflect completion of the P&A Obligations, including, without limitation, forms and documentation relating to plugging and abandonment activities, decommissioning activities, site clearance activities and pipeline abandonment or removal activities and completion of remedial activities), then, this Bond shall be null and void; otherwise, it shall remain in full force and effect in the amount as provided.

In the event Principal fails to carry out its obligations to bear the cost and expense to perform the P&A Obligations for a Property or certain identified Properties, Obligee shall present to Surety written notice that Principal is in default of such P&A Obligation, identifying such Property or Properties. If Principal continues to fail to carry out such P&A Obligations with respect to such Property or Properties for thirty (30) days after Surety receives written notice by certified mail, Surety shall, within fifteen (15) days after the end of such thirty (30) day period: 1) Pay to Obligee an amount equal to the actual costs for performing the P&A Obligations with respect to such Property or identified Properties in an amount up to, but not exceeding, the Penalty Sum of this Bond and the Penalty Sum of this Bond shall be reduced by the amount so paid; or 2) Commence the necessary operations to perform the P&A Obligations with respect to such Property or identified Properties, with the Penalty Sum of this Bond to be reduced by Surety's actual costs incurred for each performance of such P&A Obligations upon Surety presenting proof of actual costs to Obligee.

In the event Obligee commences or completes the P&A Obligations with respect to a Property or identified Properties upon Principal's default under the terms of the Agreement, Surety's obligations shall remain the same as set forth in this Bond regarding payment to Obligee as set forth above.

If Surety shall decide, upon default by Principal, to commence, or cause to be commenced, the performance of the aforementioned P&A Obligations, said performance shall continue until such time as the P&A Obligations have been met, with the Penalty Sum of this Bond to be reduced by Surety's actual costs incurred for each performance of such P&A Obligations upon Surety presenting proof of actual costs to Obligee. **Surety agrees to indemnify, defend, and hold harmless Obligee, its directors, and agents from all claims, demands, and causes of action for personal injury, death, property and/or environmental damage resulting in whole or in part from Surety's or Surety's contractors' negligence, whether joint (including with Obligee or Principal) active, passive, concurrent or sole, or willful misconduct with respect to the performance of the P&A Obligations, if and only if Surety elects, as stated herein, to commence the aforementioned P&A Obligations in lieu of payment to Obligee.**

The Surety agrees that, within fifteen (15) calendar days after learning that it has been de-listed from the Circular No. 570, and/or of any action filed alleging the insolvency or bankruptcy of the Surety, or alleging any violation that would result in suspension or revocation of the Surety's certificate of suretyship, charter, or license to do business, the Surety will give notice to the Principal and Obligee.

The Principal agrees that, within fifteen (15) calendar days after learning that the Surety has become bankrupt or, insolvent, or the Surety has had its charter or license to do business suspended or revoked, or is no longer named in the current Circular 570, the Principal will substitute a bond identical in all material respects to this Bond from another financial institution reasonably acceptable and in a form reasonably acceptable to the Obligee.

The Principal agrees that, within fifteen (15) calendar days of learning of any action filed alleging the insolvency or bankruptcy of the Principal, or alleging any violation that would result in suspension or revocation of the Principal's charter, or license to do business, it will notify the Obligee and the Surety.

Surety consents to be sued in any court in the State of Texas, hereby irrevocably submitting itself to the jurisdiction of said court. No amendment of or supplement to the terms or provisions of the Agreement or of the Exhibits attached thereto shall release Principal and Surety or either of them from their liability under this Bond. Notice to Surety of any such amendment or supplement is hereby waived, except to the extent that is herein provided.

No forbearance of Obligee, to Principal, shall release Principal and Surety from their liability under this Bond except where Obligee has agreed to reduce the Penalty Sum as provided above. No delay, neglect or failure of Obligee to proceed promptly to enforce the Agreement or to proceed promptly in case of default on the part of Principal or Surety shall in any degree relieve Principal and Surety of their obligations under this Bond except as herein stated. No assignment of the Agreement or of the Property by the Principal, its successors and assigns, and no assignment of the Agreement by operation of law or consent of Obligee or otherwise shall in any degree relieve

Principal and Surety of their obligations under this Bond except as provided herein. However, upon assignment of the Agreement or Property in whole or in part by the Principal, its successors or assigns, to a third party, Principal shall have the right but not the duty or obligation to cause Principal's assignee to post financial security to Obligee in a form acceptable to Obligee (in the amount of and covering the remaining P&A Obligations to the extent not satisfied as of the time of such assignment), to replace this Bond (hereinafter "Replacement Security"). Replacement Security must be in a form reasonably acceptable and issued by a financial institution reasonably acceptable to Obligee. Upon acceptance of Replacement Security the Penalty Sum of this Bond shall be permanently reduced by the amount of Replacement Security.

No assignment, in whole or in part, of the Agreement or of the Properties by Principal, its successors and assigns, and no delay, neglect or failure of the Obligee to proceed promptly to enforce the Agreement or to proceed promptly in the premises in case of any default on the part of Principal shall in any degree relieve Principal and Surety or either of their obligations under this Bond.

No right or action shall accrue on this Bond to or for the use of any person or corporation other than Principal, Obligee, and their respective successors.

NOW THEREFORE, Principal and Obligee agree that any dispute, claim, or controversy concerning the interpretation of this Bond or the Agreement or their compliance with the terms of this Bond shall be resolved in accordance with the terms, conditions, and procedures in Article 17 of the Agreement and each agrees not to prosecute or commence any suit or action against the other relating to any such matters. This Bond is subject to the provisions of Section 8.04(f) of the Agreement including, without limitation, the redetermination provisions that may serve to adjust the Penalty Sum provided for herein and the ability of Obligee to draw on the Bond, in whole or in part, as expressly provided for therein. Surety shall not be required to increase the Penalty Sum provided for in this Bond as a result of any redetermination made pursuant to said Section 8.04(f) of the Agreement without Surety's written consent. In the event such written consent from Surety is not obtained, Principal will be required to obtain an additional bond to cover the incremental Penalty Sum increase as a result of such redetermination from a financial institution, mutually acceptable to Obligee and Principal, providing for terms substantially similar to those set forth in this Bond except as regards the Penalty Sum amount.

In the event of a conflict or inconsistency between the terms and provisions of this Bond and those set forth in the Agreement, as between Principal, Surety and/or Obligee, the terms and provisions of the Agreement shall control.

In no event shall Surety be liable for an amount greater than the Penalty Sum of $27,300,000.00, and upon Surety's payment of said amount, whether from one or multiple claims and/or payments, this Bond shall be null and void.

IN WITNESS WHEREOF, the above bound parties have executed this instrument to be effective as of August 1, 2019, the name of each corporate party duly signed by its undersigned representative pursuant to authority of its governing body.

WITNESSES:

PRINCIPAL: W & T Offshore, Inc.

By:
Name: Tracy W. Krohn
Title: Chief Executive Officer
Date: 6/21/19

SURETY: U.S. Specialty Insurance Company

WITNESSES:

By:
Name: Michele K. Tyson
Title: Attorney-in-Fact
Date: June 24, 2019

OBLIGEE: Exxon Mobil Corporation

WITNESSES:

By:
Name: Mickey D. Johnson
Title: Agent and Attorney-in-Fact
Date: 6-26-19

OBLIGEE: Mobil Oil Exploration & Producing Southeast Inc.

WITNESSES:

By:
Name: Mickey D. Johnson
Title: Agent and Attorney-in-Fact
Date: 6-26-19

Bond No. B012127

OBLIGEE: XH, LLC

WITNESSES:

By:

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

OBLIGEE: Exxon Mobile Bay Limited Partnership

WITNESSES:

By:

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

OBLIGEE: ExxonMobil U.S. Properties Inc.

WITNESSES:

By:

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

POWER OF ATTORNEY

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a Maryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

Edwin H. Frank, III, Michele K. Tyson, W. Russell Brown, Jr., Meredith K. Anderson
or Stephen Michael Smith of Houston, Texas

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed ******Unlimited****** Dollars ($ ***unlimited***).

This Power of Attorney shall expire without further action on November 3, 2019. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

Be It Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-In-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-In-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be It Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this June 24, 2019

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

Corporate Seals

By: _____
Daniel P. Aguilar, Vice President

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles SS:

On this 1st day of November, 2016, before me, Sabina Morgenstein, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature _____ (Seal)

SABINA MORGENSTEIN
Commission # 2129258
Notary Public - California
Los Angeles County
My Comm. Expires Nov 3, 2019

I, Kio Lo, Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this 24th day of June, 2019

Corporate Seals

Bond No. B012127
Agency No. 8353

Kio Lo, Assistant Secretary

ALABAMA
OIL & GAS BOARD

EXHIBIT 10

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Kirk McQuillan & Leigh Blake

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

Alabama Offshore Operations

Operator: W & T Offshore

7 active gas fields

26 offshore structures (platforms)

35 offshore wells & 4 onshore SWD wells

2 onshore treatment plants

January 2026

(Kirk McQuillan & Leigh Blake)

ALABAMA OIL & GAS BOARD

Exhibit No: 10

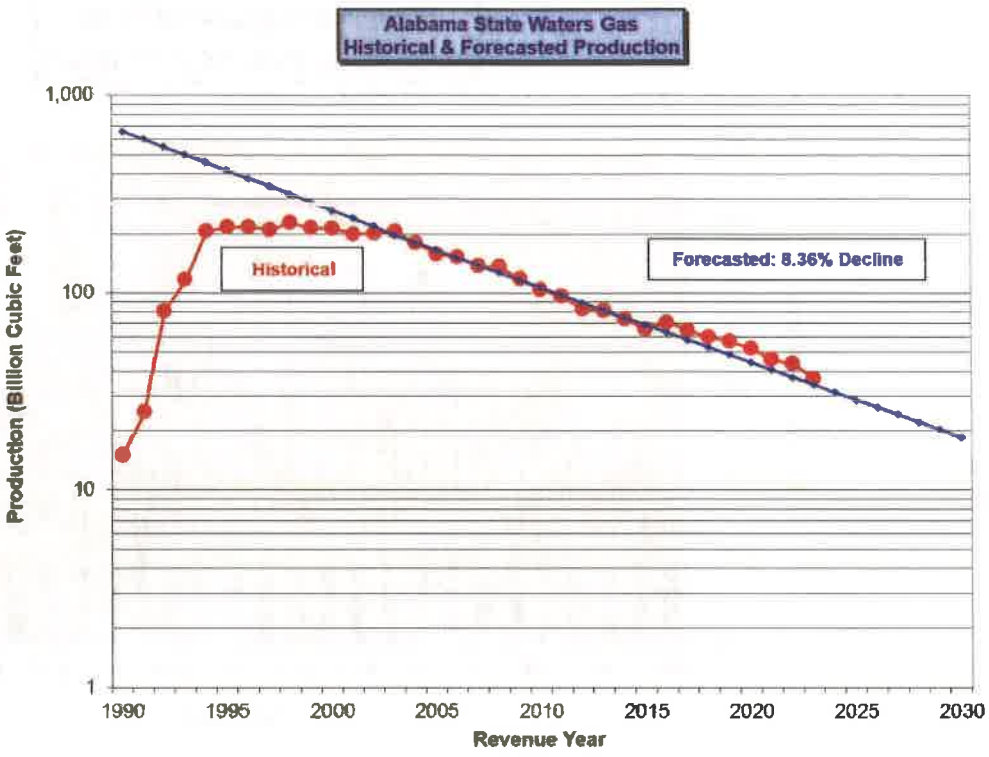
Petitioner: Board

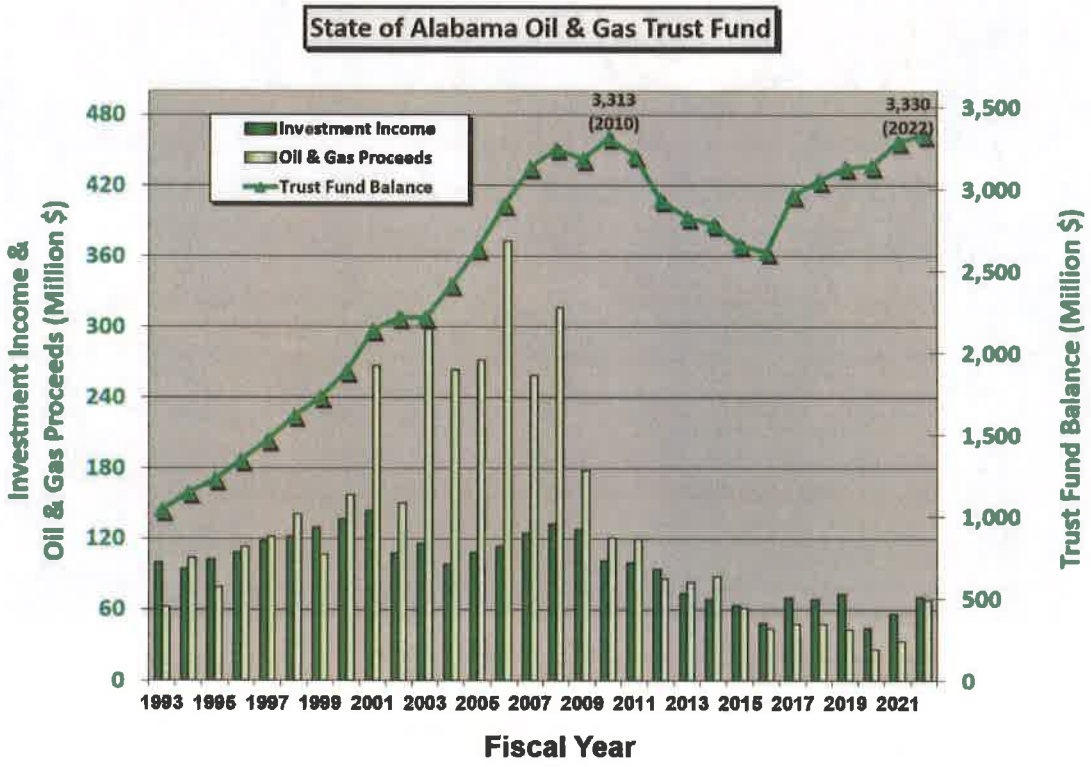
Item No: 1-5 Date: 2-19-26

Witness: McQuillan & Blake

Received by: EP

At a decline rate of 8.36% per year, it is forecasted that offshore operations will continue until about 2030 to 2036 depending on the price of natural gas.




State of Alabama Oil & Gas Trust Fund
Investment Income
Oil & Gas Proceeds
Trust Fund Balance
3,313
(2010)
3,330
(2022)
Investment Income &
Oil & Gas Proceeds (Million $)
Trust Fund Balance (Million $)
480
420
360
300
240
180
120
60
0
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021
Fiscal Year

AL Offshore Fields



9/23/2024, 4:20:51 PM

1:144,448

0 1.5 3 6 mi
0 2.5 5 10 km

Search Field-wide Units
Search Fields
Field Borders
Offshore, Gas

Alabama Lease Blocks
Offshore Pipelines
Offshore Structures
Caisson
Template

Platform
BHL Location
GAS, DA
GAS, PA
GAS, PR
Well Search Layer
GAS
UN

GAS, TA
UN, DA

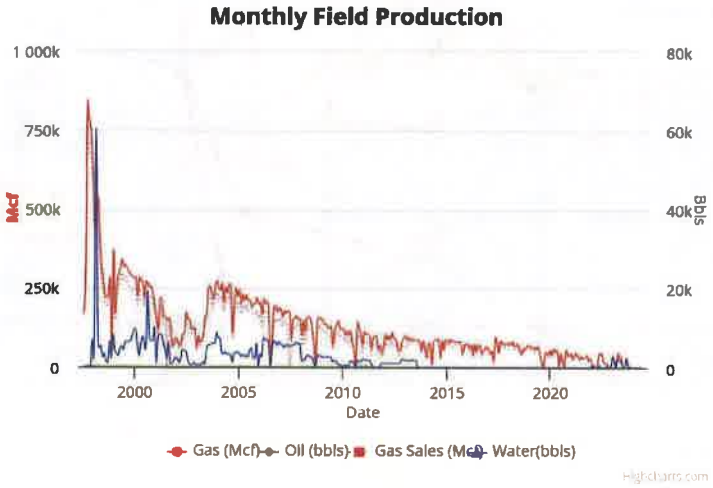
Wells
GAS, DA
GAS, PA
GAS, PR
UN, DA

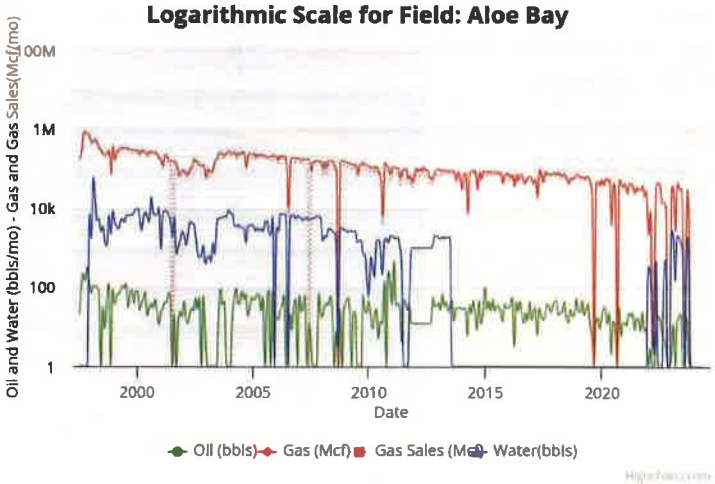
Field-wide Units 150-100k
Unit Boundary
Twp and Rng 150-50k
Counties 150-50k
State of Alabama

Earthstar Geographics, City of Mobile GIS Department, DOWNR, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, State Oil and Gas Board of Alabama

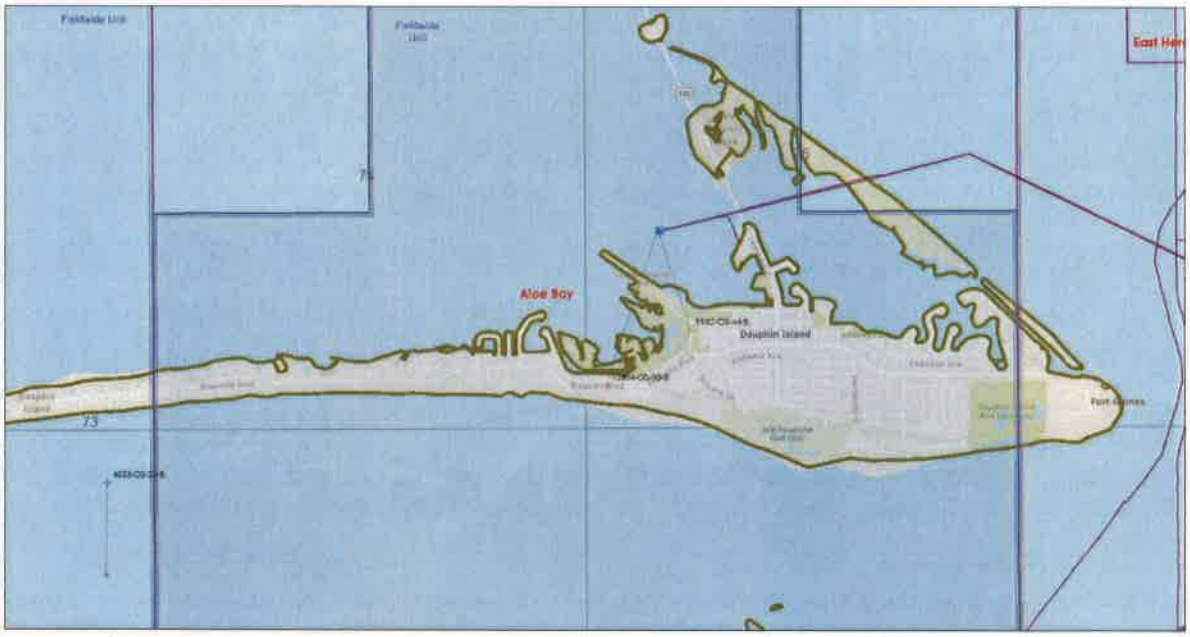
State Oil and Gas Board of Alabama | Geological Survey of Alabama | Earthstar Geographics | City of Mobile GIS Department, DOWNR, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Aloe Bay Field - Norphlet Pool
Cum: 41.4 Bcf and 10,702 BO/Cond





Aloe Bay Field



9/23/2024, 4:39:46 PM

1:36,112

0 0.38 0.75 1.5 mi
0 0.5 1 2 km

Override 1
Search Field-wide Units
Search Fields
Field Borders
Offshore, Gas

Alabama Lease Blocks
Offshore Pipelines
Offshore Structures
Template
BHL Location
GAS, PR
GAS, TA
UN DA
BHL Lines
Surface Location

Well Search Layer
GAS
UN
Field Vignette 50-25k
Offshore Gas

Field-wide Units 50-25k
Unit Boundary
Counties 50-25k
State of Alabama

Esri, NASA, NGA, USGS, FEMA, City of Mobile GIS Department, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, State Oil and Gas Board of Alabama

OGB Online Maps

State Oil and Gas Board of Alabama | Geological Survey of Alabama | Esri, NASA, NGA, USGS, FEMA | City of Mobile GIS Department, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS |

Aloe Bay Field

75F Production & Well Platform

2 wells:

75-1
State Lease 701 (Tract 75) #1 well
(PN 9962-OS-44-B)
- Cum: 41.4 Bcf & 10,702 BO
- 8.22% H2S
- 2024-45 Granted TA status and Ordered plugged & platform removed by 12/31/25

75-2
State Lease 701 (Tract 75) #2 well
(PN 12604-OS-90-B)
- Cum: Never completed or produced.
- Plugged
- 2024-45 Ordered platform removed by 12/31/25



Bon Secour Bay Field

Norphlet Pool

W&T Offshore operator since 12/6/2019 (prev. op: Exxon Mobil Corp)

5 structures & 5 wells

A-Deck Production Platform

and bridge connected AA Well Platform

"62-1" State Lease 534 (Tract 62) #1 well (PN 3632-OS-15) (PR)

AB Well Platform

"63-1" State Lease 535 (Tract 63) #1 well (PN 4068-OS-21) (PR)

"78-1" State Lease 615 (Tract 78) #1 well (PN 6109-OS-34-B) (TA)

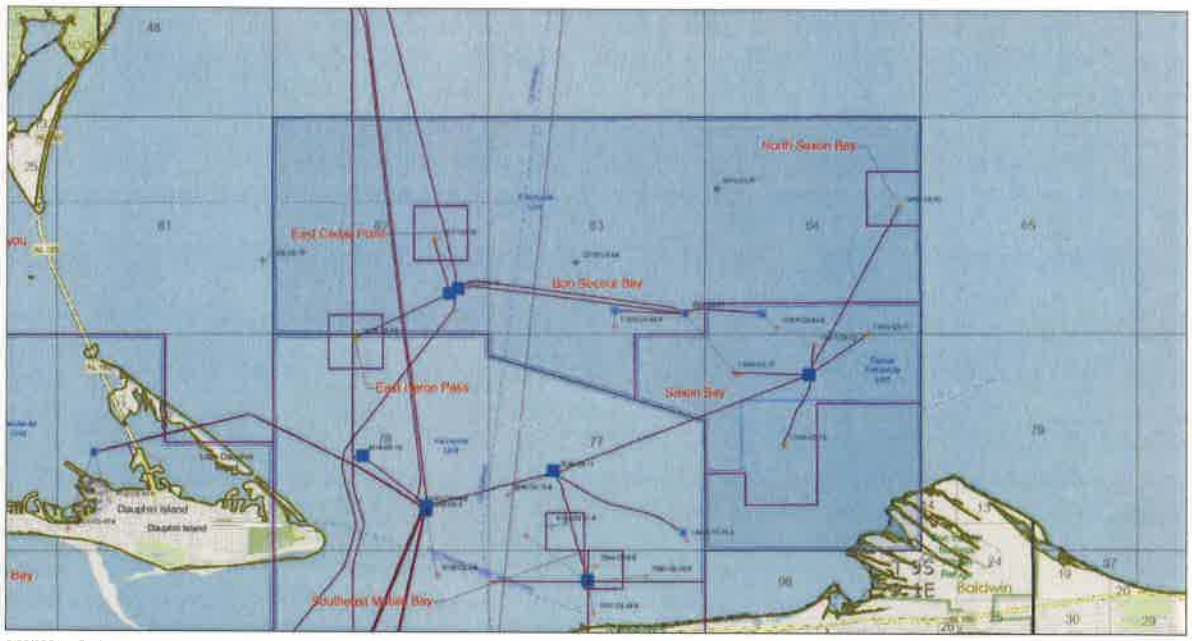
AC Well Platform

"63-2" State Lease 535 (Tract 63) #2 well (PN 11825-OS-82-B) (PR)

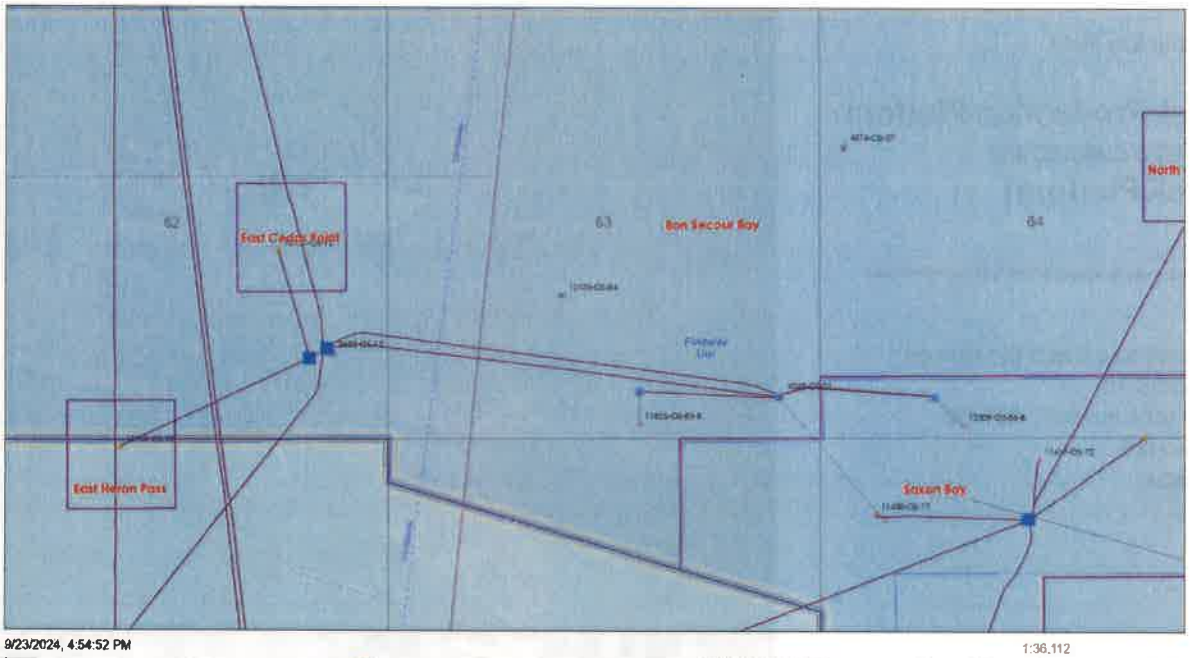
AD Well Platform

"64-2" State Lease 613 (Tract 64) #2 well (PN 12309-OS-86-B) (PR)

Bon Secour Bay Field



Bon Secour Bay Field



9/23/2024, 4:54:52 PM

Override 1

Search Field-wide Units

Search Fields

Field Borders

Offshore_Gas

Alabama Lease Blocks

Offshore Pipelines

Offshore Structures

Caisson

Template

Platform

BHL Location

GAS_PR

GAS_TA

UN_DA

BHL Lines

Surface Location

Well Search Layer

GAS

UN

Wells

GAS, PA

GAS, PR

Field Vignette 50-25k

Offshore_Gas

Field-wide Units 50-25k

Unit Boundary

1:36,112

0 0.5 1 1.5 mi

0 0.5 1 2 km

Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri, State Oil and Gas Board of Alabama, Geological Survey of Alabama

Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri | State Oil and Gas Board of Alabama | Geological Survey of Alabama |

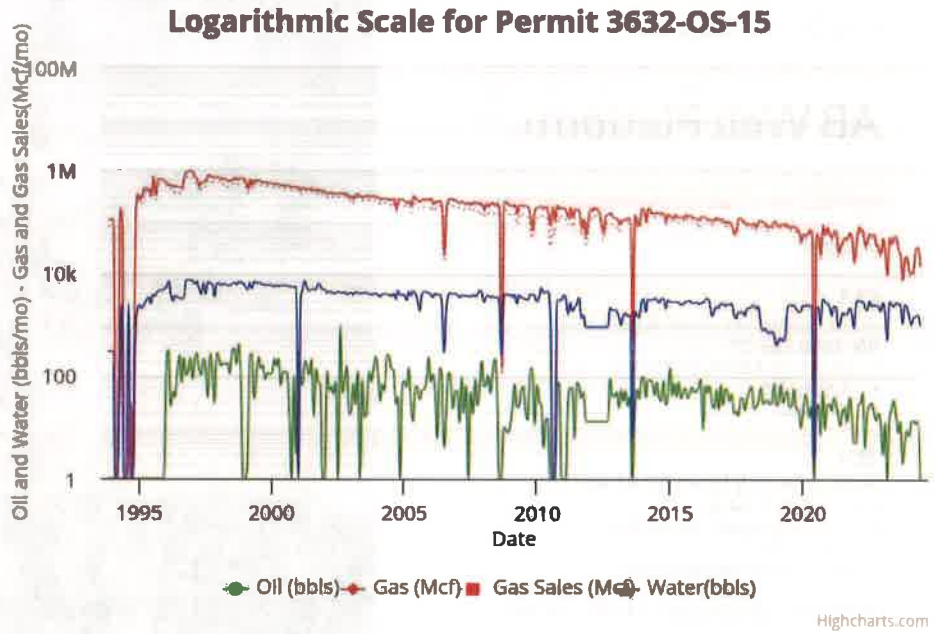
Bon Secour Bay Field

A-Deck Production Platform
and bridge connected
AA Well Platform

Production Decline Chart for

62-1
State Lease 534 (Tract 62) #1 well
PN 3632-OS-15

- Cum: 90.8 Bcf & 23,307 BO
- 9.81% H2S
- PR status



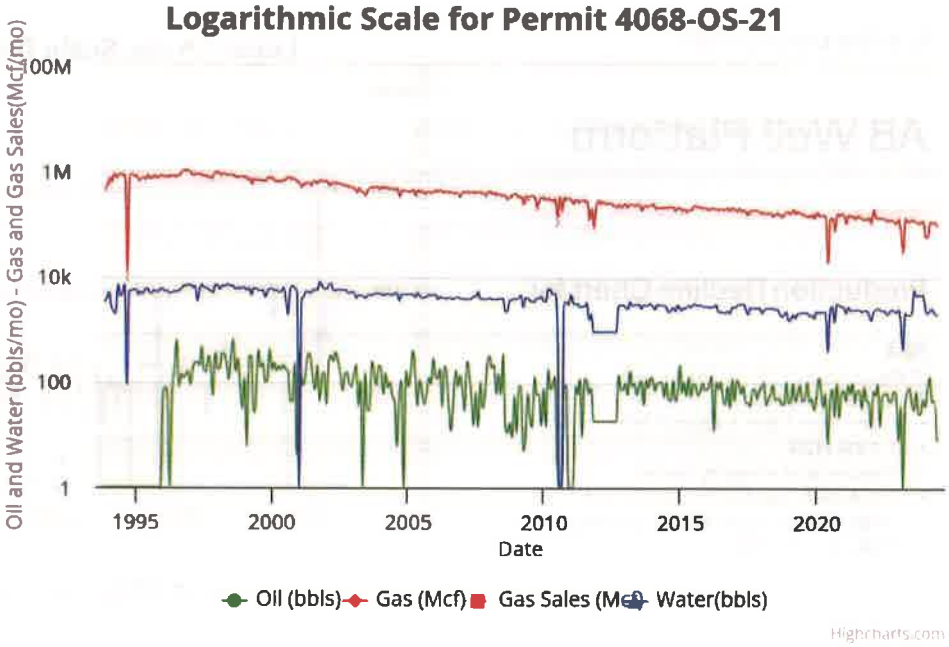
Bon Secour Bay Field

AB Well Platform

Production Decline Chart for

63-1
State Lease 535 (Tract 63) #1 well
PN 4068-OS-21

- Cum: 146.6 Bcf & 34,782 BO
- 1.52% H2S
- PR status



Bon Secour Bay Field

AC Well Platform

63-2
State Lease 535 (Tract 63) #2 well
PN 11825-OS-82-B

- Cum: 109.5 Bcf & 31,464 BO
- 2.73% H2S
- PR status



Bon Secour Bay Field

AD Well Platform

64-2
State Lease 613 (Tract 64) #2 well
PN 12309-OS-86-B

- Cum: 112.9 Bcf & 34,261 BO
- 1.19 % H2S
- PR status



Fairway Field

Norphlet Pool

W&T Offshore operator since 9/22/2011 (prev. op: Shell Offshore, Inc)

6 structures & 6 wells

113A Production Platform

and bridge connected JC Well Platform

"JC well" State Lease 531 (Tract 113) #2 well (PN 7697-OS-39) (PR)

JA Well Platform

"JA well" State Lease 531 (Tract 113) #1 well (PN 4477-OS-25-B) (PR)

JB Well Platform

"JB well" State Lease 532 (Tract 132) #1 well (PN 5210-OS-32-B) (PR)

JD/JF Well Platform

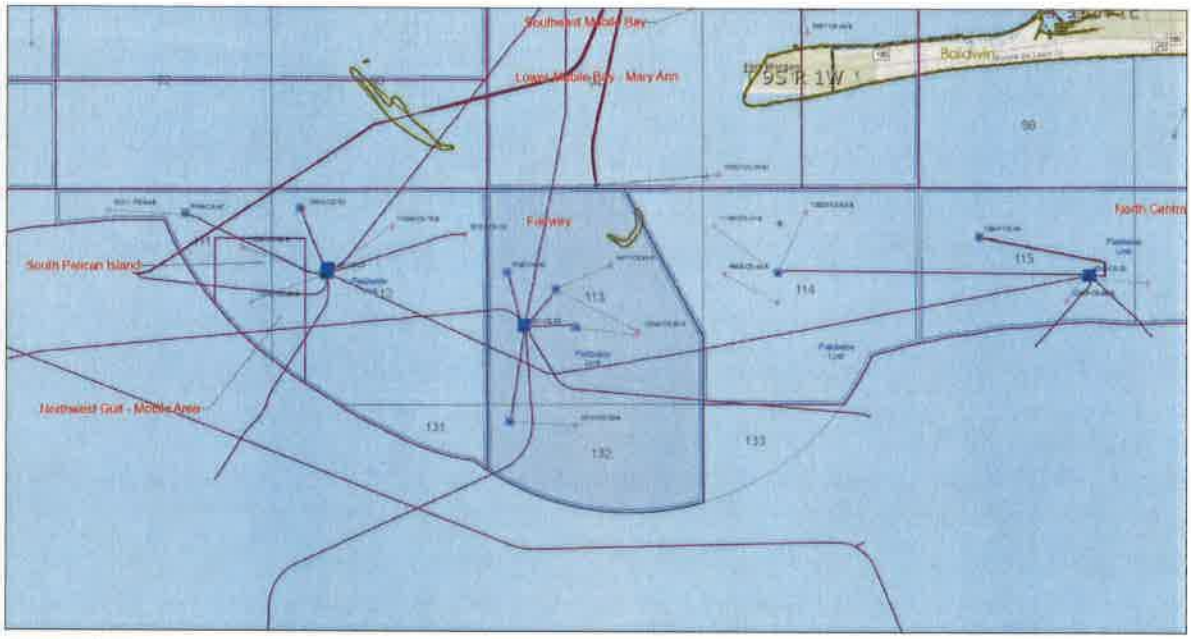
"JD well" State Lease 531 (Tract 113) #3 well (PN 9477-OS-41-B) (TA)

"JF well" State Lease 531 (Tract 113) #5 well (PN 12340-OS-87-B) (PR)

JE Well Platform

"JE well" State Lease 531 (Tract 113) #4 well (PN 9540-OS-42) (PR)

Fairway Field



9/23/2024, 5:22:49 PM

1:72,224

0 0.75 1.5 3 mi
0 1.25 2.5 5 km

Override 1
Search Field-wide Units
Search Fields
Field Borders
Offshore_Gas

Alabama Lease Blocks
Offshore Pipelines
Offshore Structures
Template
Platform

BHL Location
GAS_DA
GAS_PA
GAS_PR
GAS_TA
UN_DA

BHL Lines
Surface Location
Well Search Layer
GAS
UN

Wells
GAS_DA
GAS_PA
GAS_PR
Field Vignette 75-50k
Offshore_Gas

Field-wide Units 100-50k
Unit Boundary
Section 100-50k
Twp and Rng 150-50k
Counties 150-50k
State of Alabama

Esri, NASA, NGA, USGS, FEMA, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, State Oil and Gas Board of Alabama

State Oil and Gas Board of Alabama | Geological Survey of Alabama | Esri, NASA, NGA, USGS | CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS | ESRI Online Maps

Fairway Field

113A Production Platform
and bridge connected
JC Well Platform

JC well

State Lease 531 (Tract 113) #2

PN 7697-OS-39

- Cum: 143.2 Bcf & 1,740 BO
- 900 ppm H2S
- PR status



State Lease 531 (Tract 113) #2 well (PN 7697-OS-39)

Fairway Field

113A Platform
Exit 1032 meter





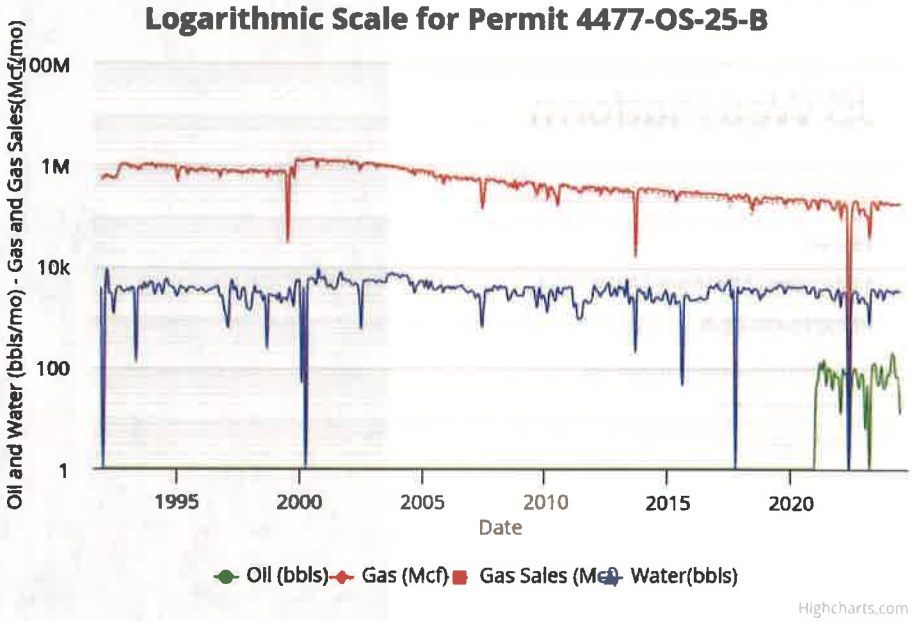
Fairway Field

JA Well Platform

Production Decline Chart for

JA well
State Lease 531 (Tract 113) #1
PN 4477-OS-25-B

- Cum: 220 Bcf & 2,994 BO
- 1.7% H2S
- PR status



Fairway Field

JB Well Platform

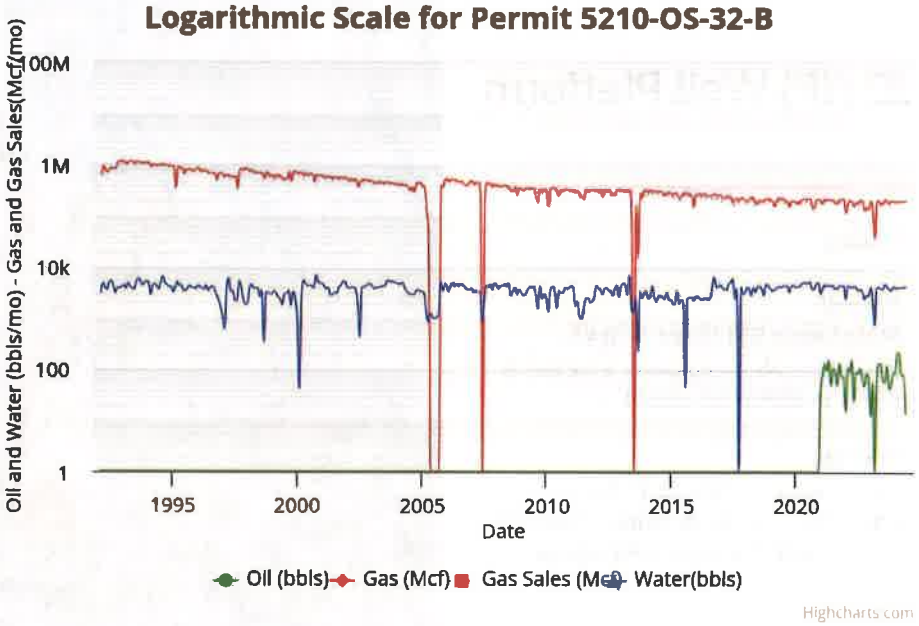
Production Decline Chart for

JB well

State Lease 532 (Tract 132) #1 Well

PN 5210-OS-32-B

- Cum:171.2 Bcf & 3,524 BO
- 300 ppm H2S
- PR status

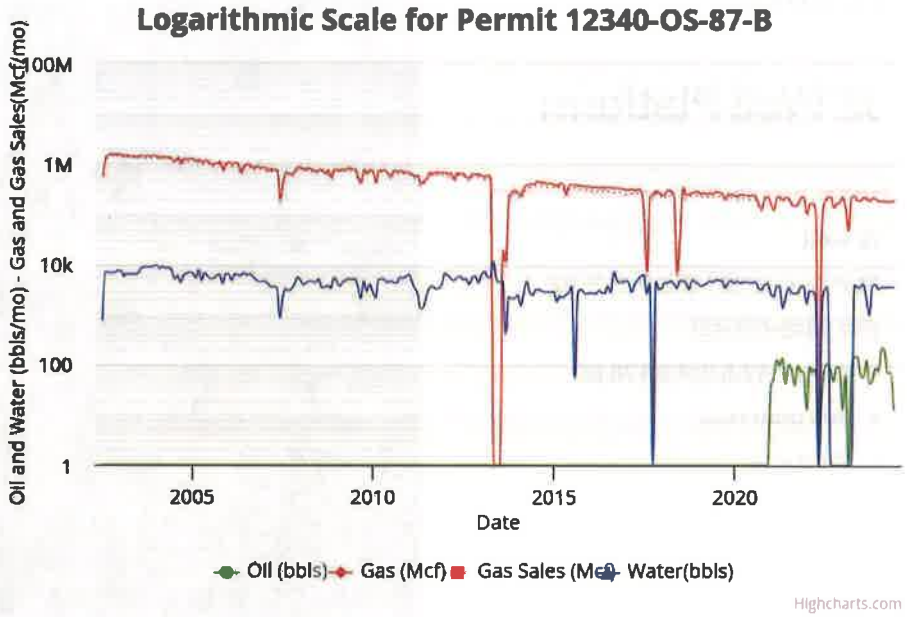


Fairway Field

JD (JF) Well Platform

Production Decline Chart for

JF well
State Lease 531 (Tract 113) #5 Well
PN 12340-OS-87-B
Cum: 146.8 Bcf & 3,248 BO
1.6% H2S
PR status



Fairway Field

JE Well Platform

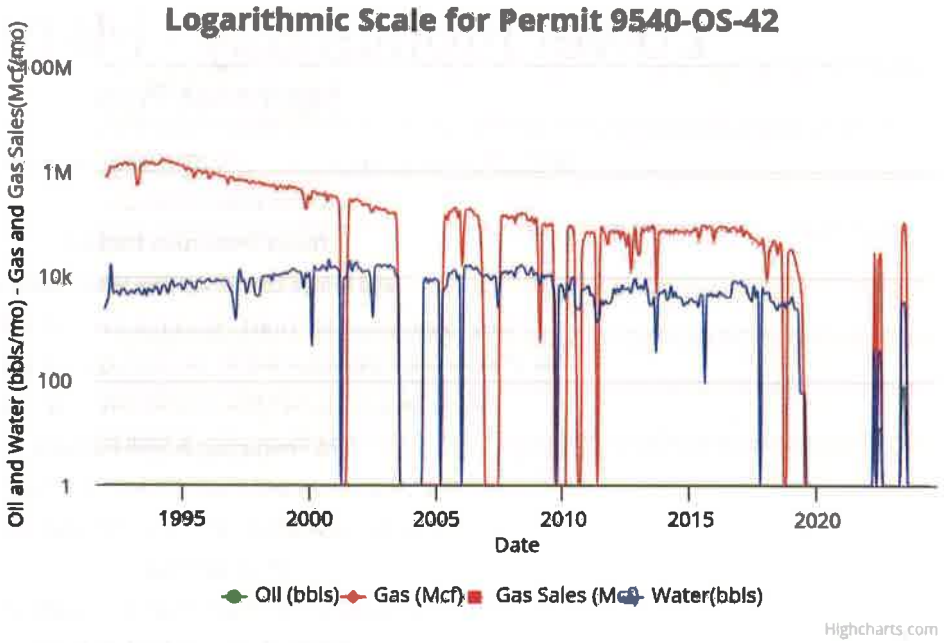
Production Decline Chart for

JE well

State Lease 531 (Tract 113) #4

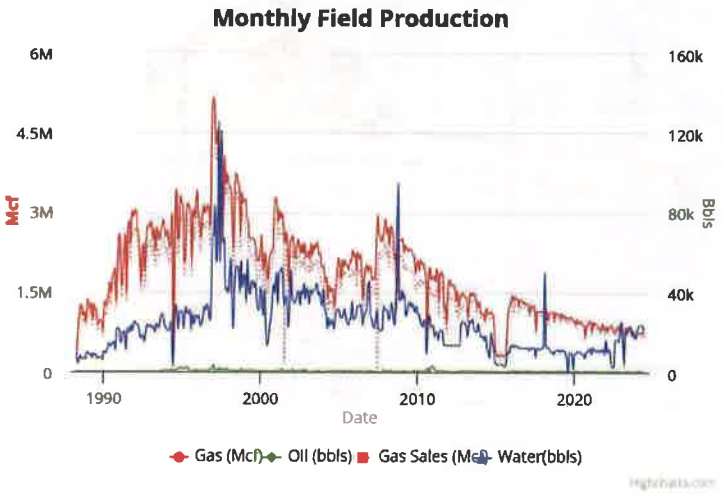
(PN 9540-OS-42)

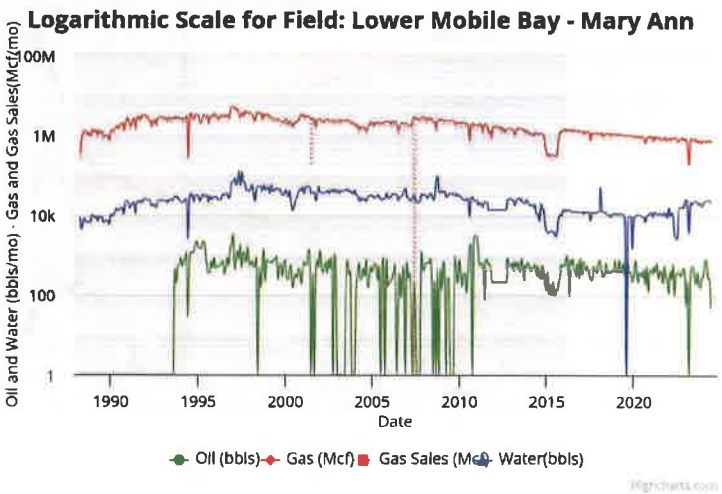
- Cum: 112.5 Bcf & 178 BO
- 300 ppm H2S
- PR status



Lower Mobile Bay – Mary Ann Field - Norphlet Pool

Cum: 811.7 Bcf and 186,948 BO/Cond





Lower Mobile Bay - Mary Ann Field



Lower Mobile Bay – Mary Ann Field

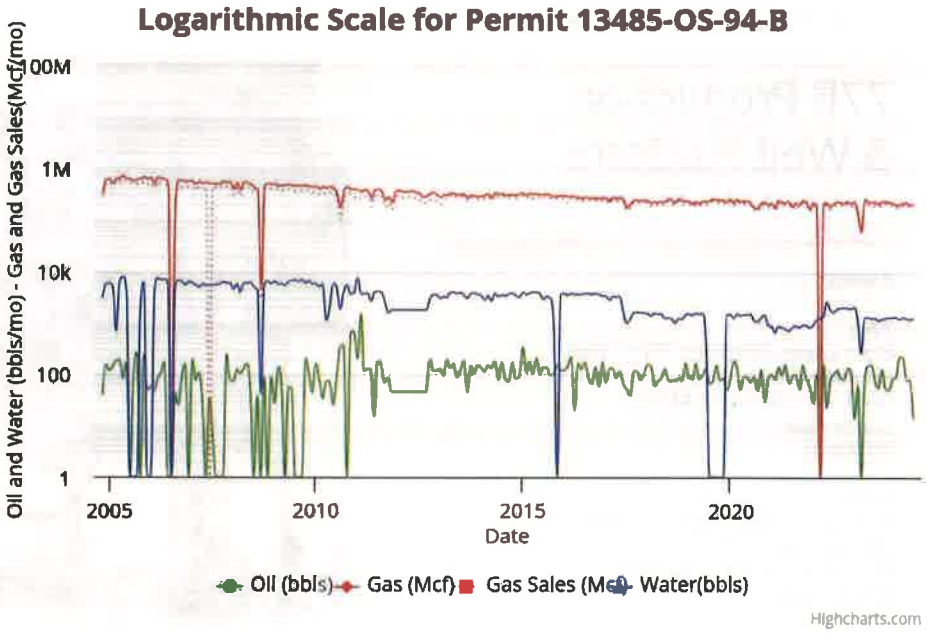
76AUX Production Platform

and bridge connected

76A Well Platform

Production Decline Chart for

76-3
State Lease 347 (Tract 76) #3
PN 13485-OS-94-B
Cum: 78.6 Bcf & 25,176 BO;
7.58% H2S;
PR status

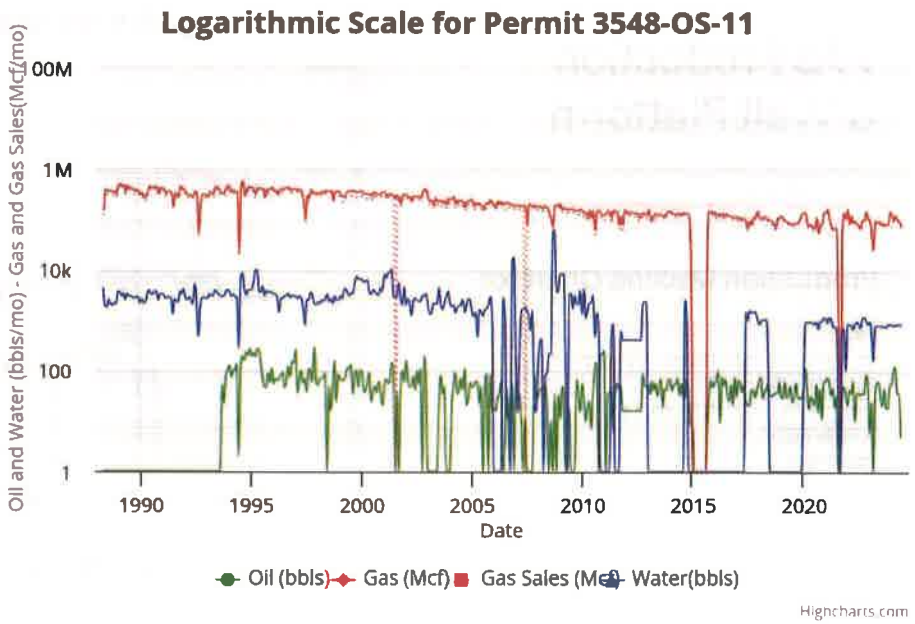


Lower Mobile Bay – Mary Ann Field

77B Production & Well Platform

Production Decline Chart for

77-1
State Lease 348 (Tract 77) #1 Well
PN 3548-OS-11
Cum: 95.2 Bcf & 19,442 BO
4.51% H2S
PR status



Lower Mobile Bay – Mary Ann Field

77BC Well Platform

77-5

State Lease 348 (Tract 77) #5 Well
PN 14694-OS-95-B

- Cum: 76.3 Bcf & 23,992 BO
- 2.74% H2S
- PR status



Lower Mobile Bay – Mary Ann Field

95E Production & Well Platform

2 wells:

77-3
State Lease 348 (Tract 77) #3 Well
PN 9597-OS-43-B-1
Cum: 82 Bcf & 19,035 BO
5.67% H2S
TA status

95-3
State Lease 350 (Tract 95) #3 Well
PN 7080-OS-35-B
Cum: 151.5 Bcf & 34,079 BO
3.47% H2S
PR status

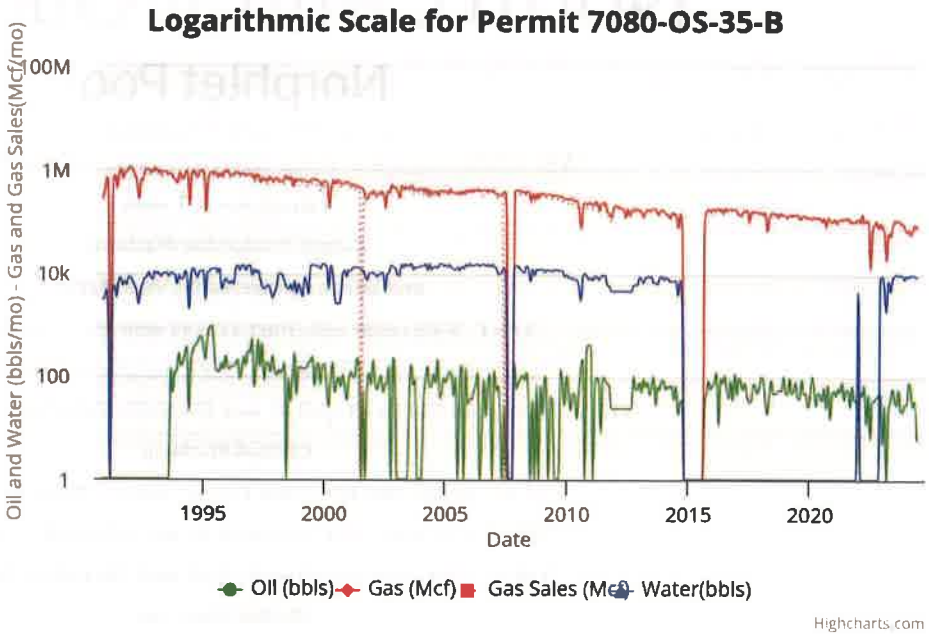


Lower Mobile Bay – Mary Ann Field

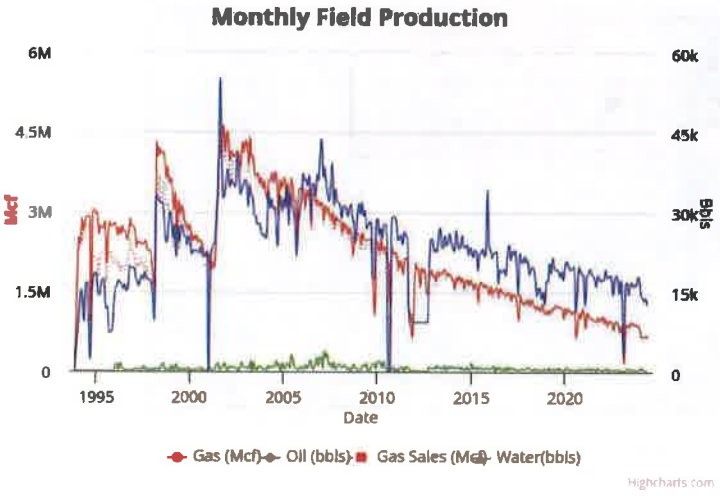
95E Production & Well Platform

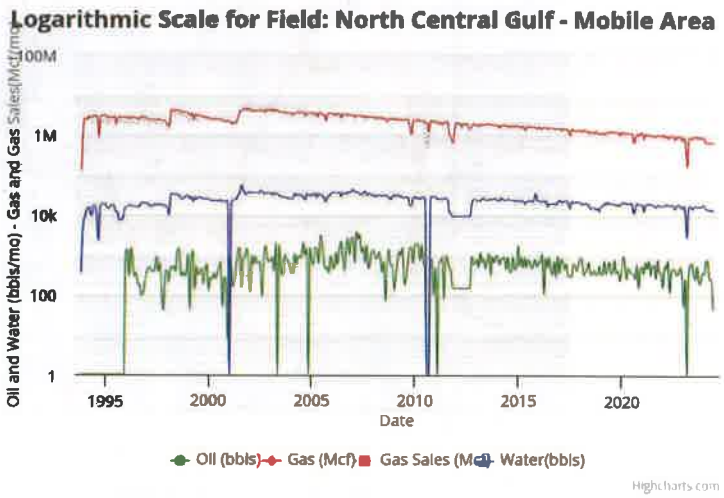
Production Decline Chart for

95-3
State Lease 350 (Tract 95) #3 Well
PN 7080-OS-35-B
Cum: 151.5 Bcf & 34,079 BO
3.47% H2S
PR status

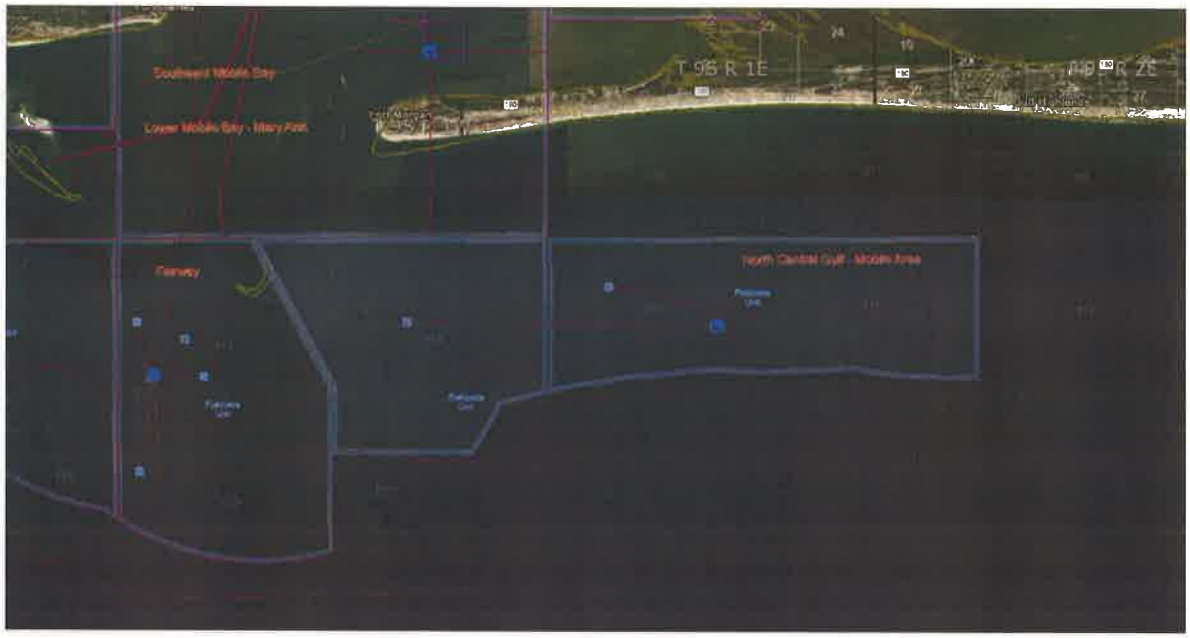


North Central Gulf Field - Norphlet Pool
Cum: 824.1 Bcf and 225,541 BCond





North Central Gulf Field



9/23/2024, 5:34:54 PM

1:72,224

Override 1
Search Field-wide Units
Search Fields
Field Borders
Offshore_Gas
Alabama Lease Blocks
Offshore Pipelines
Offshore Structures
Template
Platform
BHL Location
GAS_DA
GAS_PA
GAS_PR
GAS_TA
UN_DA
BHL Lines
Surface Location
Well Search Layer
GAS
UN
Wells
GAS_DA
GAS_PA
GAS_PR
Field Vignette 75-50k
Offshore_Gas
Field-wide Units 100-50k
Unit Boundary
Section 100-50k
Twp and Rng 150-50k
Counties 150 50k
State of Alabama

0 0.75 1.5 3 mi
0 1.25 2.5 5 km

Earthstar Geographics, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, State Oil and Gas Board of Alabama

OCS Online Maps
State Oil and Gas Board of Alabama | Geological Survey of Alabama | Earthstar Geographics | CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS |

North Central Gulf Field

C-Deck Production & CA Well Platform

(jackup rig on far left)



3 wells:

- **115-1** State Lease 538 (Tract 115) #1 Well (PN 4266-OS-23) Cum: 43.9 Bcf & 4,629 BO; 40 ppm H2S; TA status
- **115-2** State Lease 538 (Tract 115) #2 Well (PN 12393-OS-88-B) Cum: 81 Bcf & 21,092 BO; 100 ppm H2S; PR status
- **116-1** State Lease 539 (Tract 116) #1 Well (PN 9985-OS-51-B) Cum: 67.1 Bcf & 10,035 BO; 100 ppm H2S; TA, partially plugged

North Central Gulf Field

CC Well Platform

Production Decline Chart for

114-2

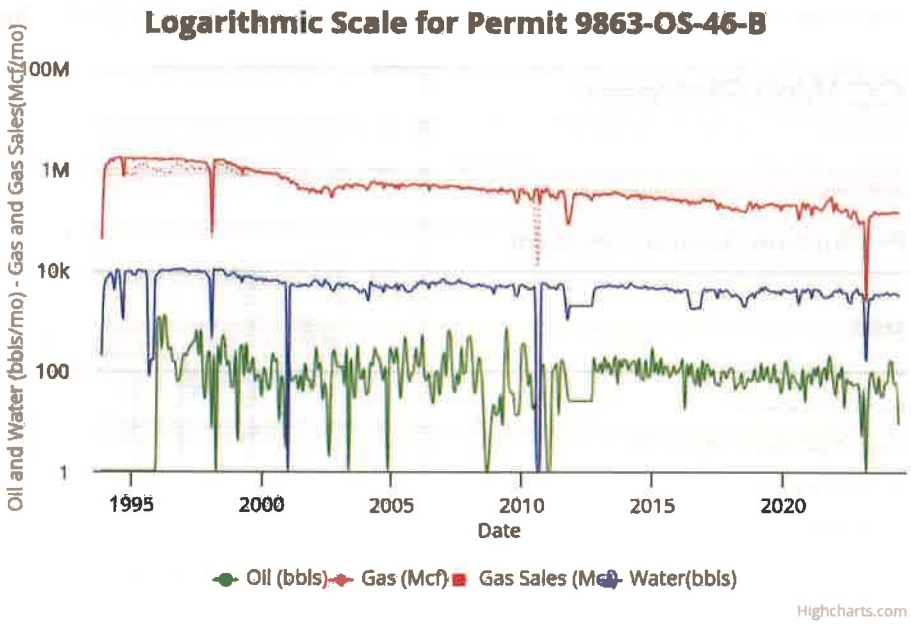
State Lease 624 (Tract 114) #2 Well

PN 9863-OS-46-B

Cum: 191.4 Bcf & 42,114 BO

8700 ppm H2S

PR status



North Central Gulf Field

CC Well Platform

Production Decline Chart for

114-4

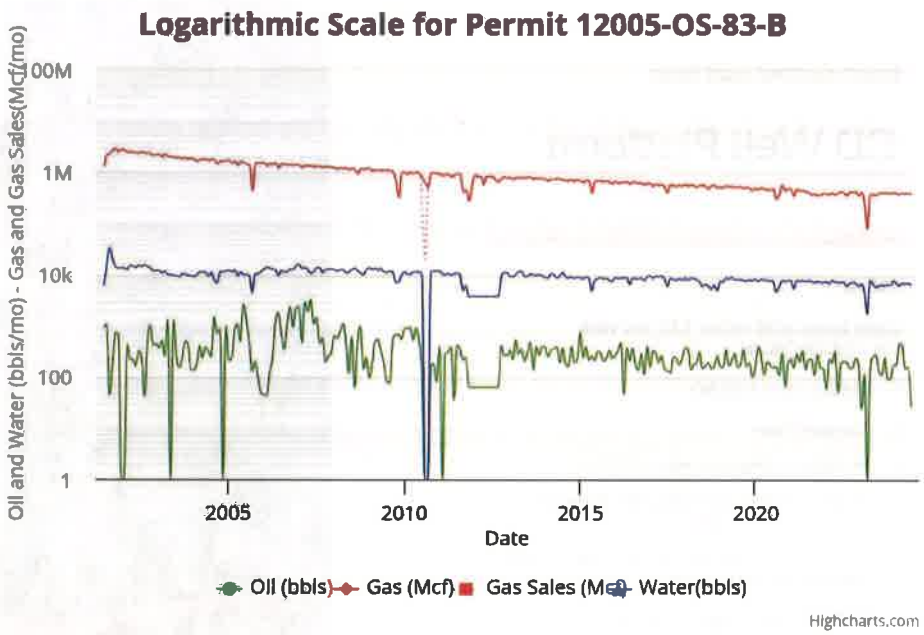
State Lease 624 (Tract 114) #4 Well

PN 12005-OS-83-B

Cum: 268.4 Bcf & 104,593 BO

100 ppm H2S

PR status



Northwest Gulf Field (& South Pelican Field*)

Norphlet Pool

W&T Offshore operator since 12/6/2019 (prev. op: Exxon Mobil Corp)

5 Structures & 7 wells

B-deck Production platform,

BQ living quarters,

and bridge connected BA well platform

"112-1" State Lease 537 (Tract 112) #1 well (PN 4131-OS-22) (PR)

"111-3" State Lease 536 (Tract 111) #3 well (PN 11009-OS-65-B) (TA, partially plugged)

"112-3" State Lease 537 Tract 112 #3 well (PN 11434-OS-78-B) (TA)

*South Pelican Field (Miocene): "111-4" State Lease 536 (Tract 111) #4 well (PN 11293-OS-68-B) (TA)

BD well platform

"111-2" State Lease 536 (Tract 111) #2 well (PN 9934-OS-47) (PR)

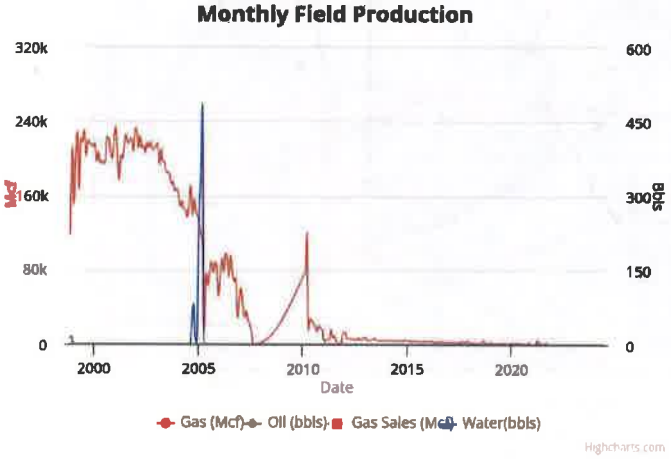
"111-1" State Lease 536 (Tract 111) #1 well (PN 10211-OS-54-B) (PR)

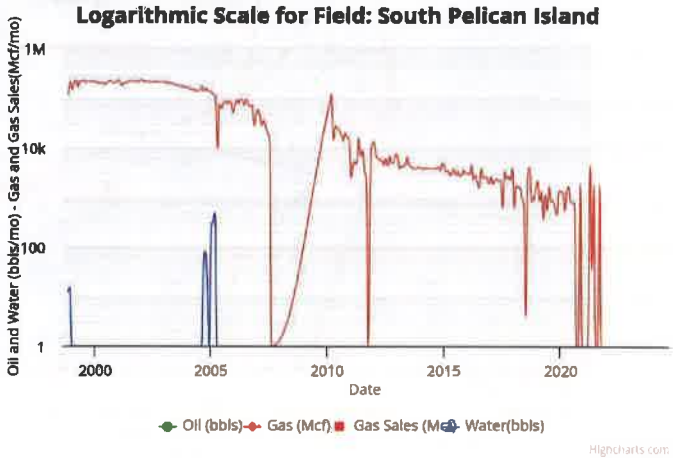
BE well platform

"112-4" State Lease 537 (Tract 112) #4 well (PN 12155-OS-85) (TA)

South Pelican Field – (Miocene Amos & Luce Pools)

Cum: 17.3 Bcf and 0 BO/Cond





Northwest Gulf Field



9/23/2024, 5:43:01 PM

Override 1
Search Field-wide Units
Search Fields
Field Borders
Offshore Gas
Alabama Lease Blocks
Offshore Pipelines
Offshore Structures
Template
Platform
BHL Location
GAS_DA
GAS_PA
GAS_PR
GAS_TA
UN_DA
BHL Lines
Surface Location
Well Search Layer
GAS
UN
Wells
GAS_PA
GAS_PR
Field Vignette 75-50k
Offshore_Gas
Field-wide Units 100-50k
Unit Boundary
Section 100-50k
Twp and Rng 150-50k
Counties 150-50k
State of Alabama

1:72,224

0 0.75 1.5 3 mi
0 1.25 2.5 5 km

Earthstar Geographics, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, State Oil and Gas Board of Alabama

OGB Online Maps
State Oil and Gas Board of Alabama | Geological Survey of Alabama | Earthstar Geographics | CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Northwest Gulf Field
(& South Pelican Field)

B-Deck Production Platform,
bridge connected
BA well platform, and
BQ (quarters) platform (far right)

Production Decline Chart for

112-1

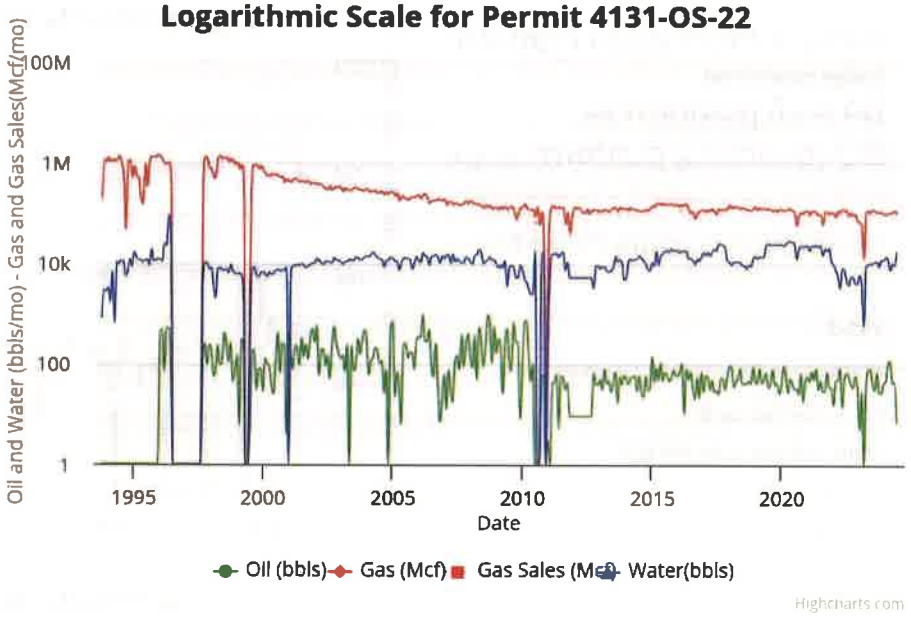
State Lease 537 (Tract 112) #1 Well

PN 4131-OS-22

Cum: 103.4 Bcf & 39,816 BO

2400 ppm H2S

PR status



Northwest Gulf Field
(& South Pelican Field)

B-Deck Production Platform,
bridge connected
BA well platform, and
BQ (quarters) platform (far right)

Production Decline Chart for

South Pelican Field (Miocene)

11-4

State Lease 536 (Tract 111) #4 Well

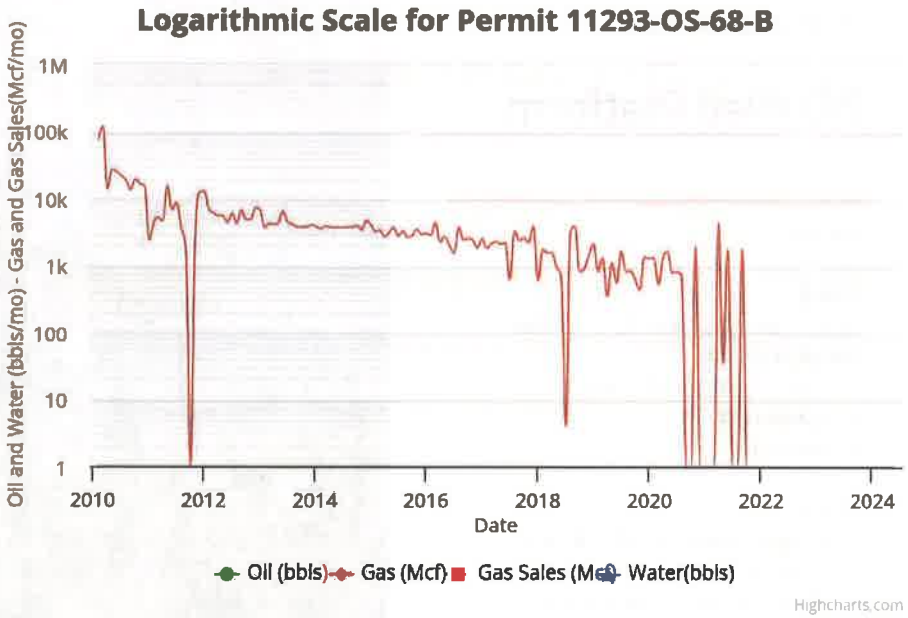
PN 11293-OS-68-B

Amos Cum: 16.5 Bcf & 0 BO

Luce Cum: 0.765 Bcf & 0 BO

0 ppm H2S

TA status



Northwest Gulf Field

BD Well Platform

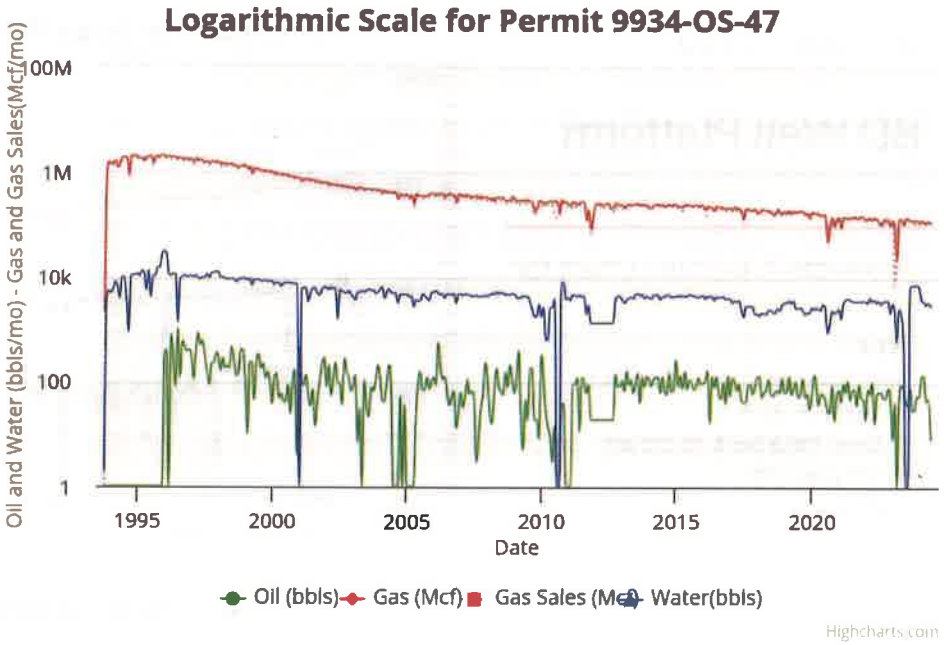
Production Decline Chart for

111-2

State Lease 536 (Tract 111) #2 Well

PN 9934-OS-47

- Cum: 209 Bcf & 37,529 BO
- 2.44% H2S
- PR status



Northwest Gulf Field

BD Well Platform







Northwest Gulf Field

BE Well Platform

112-4

State Lease 537 (Tract 112) #4 Well
PN 12155-OS-85

- Cum: 4.7 Bcf & 3,985 BO
- 3400 ppm H2S
- TA status
- Order 2023-51 Ordered well to be plugged & platform removed
- Order 2024-48 Ordered well to be plugged by 6/30/25 and platform removed by 12/31/25



Yellowhammer Treatment Plant

Status: Inactive



ALABAMA
OIL & GAS BOARD

EXHIBIT 11

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Gordon "Butch" Gregory

Butch Gregory

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

ALABAMA OIL & GAS BOARD

Exhibit No: 1 MR

Petitioner: Board

STATE OIL AND GAS BOARD OF ALABAMA

Item No: 1-5 Date: 2-19-26

Bond (Blanket) Witness: Butch Gregory

Received by: EP SEP 23 2020

Form OGB-4, Rev. 07/13

N-4000195

Surety Bond Number

Know All Men By These Presents, That I/we W & T Offshore, Inc., a Texas Corporation, as principal(s), and Indemnity National Insurance Company, a Mississippi Corporation, as surety, are held hereby and firmly bound unto the State of Alabama in the penal sum of Five Million and NO/100 ~~Thousand~~ Dollars ($ 5,000,000.00) lawful money of the United States, for the faithful payment of which we hereby bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally. The surety shall pay to the State Oil and Gas Board the full amount of this bond upon demand by the State Oil and Gas Board.

The conditions of this obligation are that whereas the above bounden principal(s) propose(s) to commence or continue the drilling, operation, or production of one or more wells in search of oil or gas, or the drilling or operation of one or more Class II injection wells, or the drilling or operation of one or more wells for the underground storage of gas in reservoirs, and this bond shall apply to all such wells drilled, operated, or produced in the State of Alabama by the aforesaid principal(s).

Now, therefore, if one or more of said wells is drilled, operated, or produced, by the principal including production facilities, processing facilities, injection facilities, plants, pipelines, and other equipment associated with said wells in compliance with state law the rules, regulations, now existing or hereafter promulgated and orders of the State Oil and Gas Board, then the obligation is void; otherwise the same shall be and remain in full force.

In Testimony Whereof, Witness Our Hands, this 15th day of September, 20 20

Signature

Skylar Schneider

Print or Type Name

Vice President Finance

Position or Officer

W & T Offshore, Inc.
Nine Greenway Plaza, Suite 300
Houston, Texas 77046
Attn: General Counsel

Name and Address of Principal(s)

In Testimony Whereof, Witness Our Hands, this 15th day of September, 20 20

Michele K. Tyson

Michele K. Tyson
Attorney-in-Fact

Surety Signature

Edwin H. Frank, III

Signature of Duly Authorized Agent of Said Surety

Indemnity National Insurance Company
238 Bedford Way
Franklin, Tennessee 37064

Name and Address of Surety

IndemCo
777 Post Oak Boulevard, Suite 330
Houston, Texas 77056

Name and Address of Agent

Indemnity National Insurance Company
238 Bedford Way
Franklin, TN 37064

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: that Indemnity National Insurance Company, a Mississippi corporation, (hereinafter the "Company"), does hereby constitute and appoint: Edwin H. Frank III, Michele K. Tyson, Russell Brown, Jr. Meredith K. Anderson, Stephen Michael Smith, and Timothy J. Briggs of IndemCo to be its true and lawful Attorney-in-Fact, with full power and authority hereby conferred to sign, seal, and execute on its behalf surety bonds or undertakings and other documents of a similar nature issued in the course of its business up to a penal sum not to exceed Ten million dollars ($10,000,000.00)********** each, and to bind the Company thereby as fully and to the same extent as if the same were signed by the duly authorized officers of the Company.

This appointment is made under and executed pursuant to and by authority of the following Minutes of Special Actions Taken by Written Consent of the Board of Directors, which is now in full force and effect:

Authorization to Appoint Attorneys-in-Fact and the Use of Facsimile Signatures and Facsimile Seals for the Purpose of Issuing Bonds:

RESOLVED: That the president or any vice president may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the Company to execute and deliver and affix the seal of the Company to bonds and related obligatory certificates and documents; and any one of said officers may remove any such attorney-in-fact or agent and revoke any power previously granted to such person, whether or not such officer appointed the attorney-in-fact or agent.

RESOLVED: That any bonds and related obligatory certificates and documents shall be valid and binding upon the Company,
(i) when signed by the president, or any vice president, and sealed with the Company seal; or
(ii) when duly executed and sealed with the Company seal by one or more attorneys-in-fact or agents pursuant to and within the limits of authority evidenced by the power of attorney issued by the Company to such person or persons a certified copy of which power of attorney must be attached thereto in order for such obligation to be binding upon the Company.

RESOLVED: That the signature of any authorized officer and the seal of the Company may be affixed to any power of attorney or certification thereof authorizing the execution and delivery of any bonds and related obligatory certificates and documents of the Company and such signature and seal then so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Indemnity National Insurance Company has been affixed thereto in Lexington, Kentucky this 6th day of November, 2017.

INDEMNITY NATIONAL INSURANCE COMPANY CORPORATE SEAL 1993 Mississippi

Indemnity National Insurance Company

By _____
Thomas F. Elkins, President

State of Kentucky
County of Fayette

On this 6th day of November, 2017, before me, a Notary Public, personally came Thomas F. Elkins, to me known, and acknowledged that he is President of Indemnity National Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Indemnity National Insurance Company thereto with the authority and at the direction of said corporation.

DEBORAH A. MURPHY NOTARY PUBLIC STATE AT LARGE KY

By _____
Notary Public

My Commission Expires 09/26/2021

CERTIFICATE

I, James E. Hart, Secretary of Indemnity National Insurance Company, do hereby certify that the foregoing Power of Attorney is still in full force and effect, and further certify that the Minutes of Special Actions Taken by Written Consent of the Board of Directors are now in full force and effect.

IN TESTIMONY WHEREOF I have subscribed my name and affixed the seal of said Company. Dated this 15th day of September, 20 20

INDEMNITY NATIONAL INSURANCE COMPANY CORPORATE SEAL 1993 Mississippi

By _____
James E. Hart, Secretary

ALABAMA
OIL & GAS BOARD

EXHIBIT 12

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Gordon "Butch" Gregory

Butch Gregory

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

MR

ALABAMA OIL & GAS BOARD

STATE OIL AND GAS BOARD OF ALABAMA

Form OGB-4, Rev. 07/13

Bond (Blanket)

Exhibit No: 12

Petitioner: Board

Item No: 1-5 Date: 2-19-26

Witness: Butch Gregory

Received by: EP

N-4000220
Surety Bond Number

Know All Men By These Presents, That I/we W & T Offshore, Inc., a Texas Corporation, as principal(s), and Indemnity National Insurance Company, a Mississippi Corporation, as surety, are held hereby and firmly bound unto the State of Alabama in the penal sum of Two Million Five Hundred Thousand Dollars ($ 2,500,000.00) lawful money of the United States, for the faithful payment of which we hereby bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally. The surety shall pay to the State Oil and Gas Board the full amount of this bond upon demand by the State Oil and Gas Board.

The conditions of this obligation are that whereas the above bounden principal(s) propose(s) to commence or continue the drilling, operation, or production of one or more wells in search of oil or gas, or the drilling or operation of one or more Class II injection wells, or the drilling or operation of one or more wells for the underground storage of gas in reservoirs, and this bond shall apply to all such wells drilled, operated, or produced in the State of Alabama by the aforesaid principal(s).

Now, therefore, if one or more of said wells is drilled, operated, or produced, by the principal including production facilities, processing facilities, injection facilities, plants, pipelines, and other equipment associated with said wells in compliance with state law, the rules, regulations, now existing or hereafter promulgated and orders of the State Oil and Gas Board, then the obligation is void; otherwise the same shall be and remain in full force.

In Testimony Whereof, Witness Our Hands, this 15 day of September, 20 20

Signature

Print or Type Name

Position or Officer

W & T Offshore, Inc.
Nine Greenway Plaza, Suite 300
Houston, Texas 77046
Attn: General Counsel

Name and Address of Principal(s)

In Testimony Whereof, Witness Our Hands, this 15th day of September, 20 20

Michele K. Tyson
Attorney-in-Fact

Indemnity National Insurance Company
238 Bedford Way
Franklin, Tennessee 37064

Surety Signature

Edwin H Frank, III

Signature of Duly Authorized Agent of Said Surety

Name and Address of Surety

IndemCo
777 Post Oak Boulevard, Suite 330
Houston, Texas 77056

Name and Address of Agent

Indemnity National Insurance Company
238 Bedford Way
Franklin, TN 37064

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: that Indemnity National Insurance Company, a Mississippi corporation, (hereinafter the "Company"), does hereby constitute and appoint: Edwin H. Frank III, Michele K. Tyson, Russell Brown, Jr. Meredith K. Anderson, Stephen Michael Smith, and Timothy J. Briggs of IndemCo to be its true and lawful Attorney-in-Fact, with full power and authority hereby conferred to sign, seal, and execute on its behalf surety bonds or undertakings and other documents of a similar nature issued in the course of its business up to a penal sum not to exceed Ten million dollars ($10,000,000.00)********** each, and to bind the Company thereby as fully and to the same extent as if the same were signed by the duly authorized officers of the Company.

This appointment is made under and executed pursuant to and by authority of the following Minutes of Special Actions Taken by Written Consent of the Board of Directors, which is now in full force and effect:

Authorization to Appoint Attorneys-in-Fact and the Use of Facsimile Signatures and Facsimile Seals for the Purpose of Issuing Bonds:

RESOLVED: That the president or any vice president may appoint attorneys-in-fact or agents with authority as defined or limited in the instrument evidencing the appointment in each case, for and on behalf of the Company to execute and deliver and affix the seal of the Company to bonds and related obligatory certificates and documents; and any one of said officers may remove any such attorney-in-fact or agent and revoke any power previously granted to such person, whether or not such officer appointed the attorney-in-fact or agent.

RESOLVED: That any bonds and related obligatory certificates and documents shall be valid and binding upon the Company,
(i) when signed by the president, or any vice president, and sealed with the Company seal; or
(ii) when duly executed and sealed with the Company seal by one or more attorneys-in-fact or agents pursuant to and within the limits of authority evidenced by the power of attorney issued by the Company to such person or persons a certified copy of which power of attorney must be attached thereto in order for such obligation to be binding upon the Company.

RESOLVED: That the signature of any authorized officer and the seal of the Company may be affixed to any power of attorney or certification thereof authorizing the execution and delivery of any bonds and related obligatory certificates and documents of the Company and such signature and seal then so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Indemnity National Insurance Company has been affixed thereto in Lexington, Kentucky this 6th day of November, 2017.

INDEMNITY NATIONAL INSURANCE CORPORATE SEAL 1993 Mississippi COMPANY

Indemnity National Insurance Company

By _____
Thomas F. Elkins, President

State of Kentucky
County of Fayette

On this 6th day of November, 2017, before me, a Notary Public, personally came Thomas F. Elkins, to me known, and acknowledged that he is President of Indemnity National Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Indemnity National Insurance Company thereto with the authority and at the direction of said corporation.

DEBORAH A. MURPHY NOTARY PUBLIC STATE AT LARGE KY

By _____
Notary Public

My Commission Expires 09/26/2021

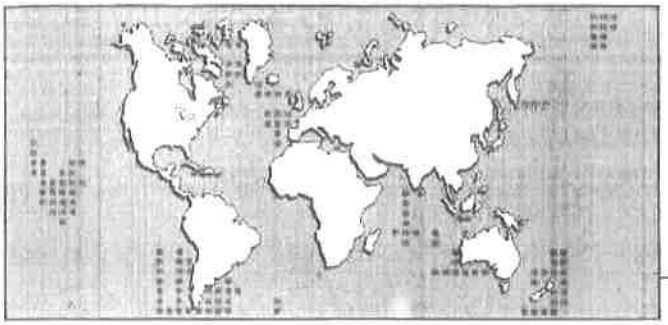
CERTIFICATE

I, James F. Hart, Secretary of Indemnity National Insurance Company, do hereby certify that the foregoing Power of Attorney is still in full force and effect, and further certify that the Minutes of Special Actions Taken by Written Consent of the Board of Directors are now in full force and effect.

IN TESTIMONY WHEREOF I have subscribed my name and affixed the seal of said Company. Dated this 15th day of September 20 20

INDEMNITY NATIONAL INSURANCE CORPORATE SEAL 1993 Mississippi COMPANY

By _____
James F. Hart, Secretary



PETRO-MARINE UNDERWRITERS, INC.

85 South Wren Street
New Orleans, Louisiana 70124
Phone (504) 593-9399 or Fax (504) 267-0659
petro_marine@msn.com
www.Petro-MarineBonding.com

September 23, 2020

BY FEDEX

State Oil and Gas Board of Alabama
420 Hackberry Lane
Tuscaloosa, AL 35401

Re: Request for Acceptance of Replacement Blanket Bond No. N-4000220

Dear Sir or Madam:

Please accept and process the enclosed replacement bond. **Bond No. N-4000220 issued by Indemnity National Insurance Company in the amount of $2,500,000.00 as a replacement bond, for and superseding, Lexon Insurance Company Bond 1159771.** The bond is issued to W&T Offshore, Inc. (as Principal) and Indemnity National Insurance Company (as Surety).

Please release and discharge Lexon Insurance Company Blanket Bond #1159771 upon the acceptance of Indemnity National Insurance Company Bond N-4000220.

Should you have any questions in this matter, please contact our office at (504) 593-9399 or by email at AliceDornan@msn.com.

Sincerely,

Marie Alice Dornan
Petro-Marine Underwriters, Inc.
85 South Wren Street
New Orleans, LA 70124
(504)593-9399

ALABAMA
OIL & GAS BOARD

EXHIBIT 13

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Gordon "Butch" Gregory

Butch Gregory

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

ARMBRECHT JACKSON LLP
LAWYERS

RSA Tower, 27th Floor
11 North Water Street
Mobile, Alabama 36602

Mailing Address:
Post Office Box 290
Mobile, Alabama 36601

Phone: 251.405.1300
Fax: 251.432.6843

Duane A. Graham
Direct Dial: 251.405.1207
Email: dag@ajlaw.com

September 6, 2019

VIA FEDERAL EXPRESS

S. Marvin Rogers, Esq.
State Oil and Gas Board of Alabama
420 Hackberry Lane
University, Alabama 35486-6999

RE: Petition by W&T Offshore, Inc.
Docket No. 9-10-19-01

STATE OIL AND GAS BOARD
Exhibit No. 25
Petition By
Item No. 1 Date
Testimony Of
Received By

Dear Mr. Rogers:

It occurred to me that our conversations about the private bonding that W&T has may have created some confusion, and the staff requested further details. Accordingly, I enclose the performance bond that W&T has posted with Exxon in conjunction with the recent acquisition of Mobile Bay-related assets. While the bond is not limited only to Alabama assets since W&T's acquisition also included some federal properties, you can see that this bond provides significant benefits to the Board as it specifically addresses the very plugging obligations that are relevant to our petition. The existence of this bond means that there are substantial funds committed to W&T's plugging obligations in addition to whatever amount of bond the Board may require, and we submit that this justifies a lower Board bond than might otherwise be indicated.

Very truly yours,

ARMBRECHT JACKSON LLP

By: _____
Duane A. Graham

DAG:acr
Enclosure

ALABAMA OIL & GAS BOARD
Exhibit No: 13
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Butch Gregory
Received by: EP

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT we, W & T Offshore, Inc., with its principal office at Nine Greenway Plaza, Suite 300, Houston, Texas 77046, (hereinafter called the "Principal"), and U.S. Specialty Insurance Company, with an address of 13403 Northwest Freeway, Houston, Texas 77040 (hereinafter called the "Surety"), are held and firmly bound unto Exxon Mobil Corporation, Mobil Oil Exploration & Producing Southeast Inc., XH, LLC, Exxon Mobile Bay Limited Partnership, and ExxonMobil U.S. Properties Inc., all with an address of 22777 Springwoods Village Parkway, Spring, Texas (hereinafter collectively called the "Obligee"), in the Penalty Sum of Twenty Seven Million Three Hundred Thousand and No/100 Dollars ($27,300,000.00) lawful money of the United States of America for the payment of which sum the Principal and the Surety bind themselves, their successors and assigns, jointly, severally, and in solido, firmly by these presents.

WHEREAS, Principal and Obligee have entered into that certain Purchase and Sale Agreement dated effective as of January 1, 2019 (hereinafter called the "Agreement"), which Agreement is by reference made a part hereof and which provides for the sale and assignment from Obligee to Principal of the interests of Obligee in certain oil and gas leases and properties, including the oil and gas leases described on Exhibit A to the Agreement (collectively, the "Leases" and each individually, the "Lease"), together with all rights and obligations in connection with the Leases, and also provides for the sale and assignment to Principal of all wells (both abandoned and unabandoned), facilities, equipment and pipelines existing on the Leases as of the date of the Agreement (collectively, the "Wells" and individually, the "Well") (the Leases, Wells and such facilities, equipment and pipelines, being collectively referred to as the "Properties" and each as "Property"); and

WHEREAS, Principal and Surety agree that notwithstanding the subsequent termination of any of the Leases, whether by operation of law or otherwise, this Bond shall remain in full force and effect until Principal has presented satisfactory evidence to Obligee, as set forth below, that all P&A Obligations (as such term is defined below) have been performed and discharged; and

WHEREAS, as used in this Bond, the term "P&A Obligations" means all obligations and liabilities of Principal to abandon, restore and remediate the Properties, whether arising before or after January 1, 2019 (the "Effective Time"), including obligations, as applicable to the Properties, to: (a) obtain plugging exceptions in the operator's name for each Well with a current plugging exception, or permanently plugging and abandoning a Well; (b) plug, abandon, and if necessary, re-abandon each Well; (c) remove all equipment and facilities, including flowlines, and pipelines; (d) close all pits; and f restore and remediate the surface, subsurface and sites associated with the Properties; and

WHEREAS, Principal has agreed to deliver to Obligee this Bond, executed by Principal and Surety, at the Closing as defined and contemplated by the Agreement; and

WHEREAS, Surety represents that it is duly authorized by the proper public authorities to transact the business of indemnity and suretyship in the state where it executed this Bond, and represents that it is qualified to be surety and guarantor on bonds and undertakings, which certificate has not been revoked, that it is named in the current Circular 570, published by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury ("Circular 570"); and

WHEREAS, Surety represents that it has duly executed a power of attorney, appointing the hereafter named representative as its duly authorized deputy, as the true and lawful attorney-in-fact of such Surety, upon whom may be served all lawful process in any action or proceeding against such Surety in any court or before any officer, arising, out of or founded upon this Bond or any liability hereunder, and does hereby agree and consent that such service, when so made, shall be valid service upon it, and that such appointment shall continue in force and effect and be irrevocable so long as any liability against it remains outstanding hereunder but if the named representative becomes no longer able to act as the Surety's true attorney-in-fact, the Surety will immediately execute a new power of attorney appointing a replacement representative authorized to act as its true attorney-in-fact, and will promptly so inform Principal and Obligee;

NOW THEREFORE, Principal and Surety agree as follows:

Surety hereby guarantees the full and faithful performance by Principal of, and compliance by Principal with, the P&A Obligations in accordance with all current and future requirements of applicable federal and state law or any agency, authority or body having, jurisdiction or authority over the Properties or any operations thereon, and in accordance with the Leases and the Agreement.

PROVIDED, HOWEVER, whenever the Principal shall present to Obligee satisfactory evidence that all of the P&A Obligations have been performed (such satisfactory evidence shall comprise executed forms or other written documentation as may be required by any governmental authority under applicable law to reflect completion of the P&A Obligations, including, without limitation, forms and documentation relating to plugging and abandonment activities, decommissioning activities, site clearance activities and pipeline abandonment or removal activities and completion of remedial activities), then, this Bond shall be null and void; otherwise, it shall remain in full force and effect in the amount as provided.

In the event Principal fails to carry out its obligations to bear the cost and expense to perform the P&A Obligations for a Property or certain identified Properties, Obligee shall present to Surety written notice that Principal is in default of such P&A Obligation, identifying such Property or Properties. If Principal continues to fail to carry out such P&A Obligations with respect to such Property or Properties for thirty (30) days after Surety receives written notice by certified mail, Surety shall, within fifteen (15) days after the end of such thirty (30) day period: 1) Pay to Obligee an amount equal to the actual costs for performing the P&A Obligations with respect to such Property or identified Properties in an amount up to, but not exceeding, the Penalty Sum of this Bond and the Penalty Sum of this Bond shall be reduced by the amount so paid; or 2) Commence the necessary operations to perform the P&A Obligations with respect to such Property or identified Properties, with the Penalty Sum of this Bond to be reduced by Surety's actual costs incurred for each performance of such P&A Obligations upon Surety presenting proof of actual costs to Obligee.

In the event Obligee commences or completes the P&A Obligations with respect to a Property or identified Properties upon Principal's default under the terms of the Agreement, Surety's obligations shall remain the same as set forth in this Bond regarding payment to Obligee as set forth above.

If Surety shall decide, upon default by Principal, to commence, or cause to be commenced, the performance of the aforementioned P&A Obligations, said performance shall continue until such time as the P&A Obligations have been met, with the Penalty Sum of this Bond to be reduced by Surety's actual costs incurred for each performance of such P&A Obligations upon Surety presenting proof of actual costs to Obligee. **Surety agrees to indemnify, defend, and hold harmless Obligee, its directors, and agents from all claims, demands, and causes of action for personal injury, death, property and/or environmental damage resulting in whole or in part from Surety's or Surety's contractors' negligence, whether joint (including with Obligee or Principal) active, passive, concurrent or sole, or willful misconduct with respect to the performance of the P&A Obligations, if and only if Surety elects, as stated herein, to commence the aforementioned P&A Obligations in lieu of payment to Obligee.**

The Surety agrees that, within fifteen (15) calendar days after learning that it has been de-listed from the Circular No. 570, and/or of any action filed alleging the insolvency or bankruptcy of the Surety, or alleging any violation that would result in suspension or revocation of the Surety's certificate of suretyship, charter, or license to do business, the Surety will give notice to the Principal and Obligee.

The Principal agrees that, within fifteen (15) calendar days after learning that the Surety has become bankrupt or, insolvent, or the Surety has had its charter or license to do business suspended or revoked, or is no longer named in the current Circular 570, the Principal will substitute a bond identical in all material respects to this Bond from another financial institution reasonably acceptable and in a form reasonably acceptable to the Obligee.

The Principal agrees that, within fifteen (15) calendar days of learning of any action filed alleging the insolvency or bankruptcy of the Principal, or alleging any violation that would result in suspension or revocation of the Principal's charter, or license to do business, it will notify the Obligee and the Surety.

Surety consents to be sued in any court in the State of Texas, hereby irrevocably submitting itself to the jurisdiction of said court. No amendment of or supplement to the terms or provisions of the Agreement or of the Exhibits attached thereto shall release Principal and Surety or either of them from their liability under this Bond. Notice to Surety of any such amendment or supplement is hereby waived, except to the extent that is herein provided.

No forbearance of Obligee, to Principal, shall release Principal and Surety from their liability under this Bond except where Obligee has agreed to reduce the Penalty Sum as provided above. No delay, neglect or failure of Obligee to proceed promptly to enforce the Agreement or to proceed promptly in case of default on the part of Principal or Surety shall in any degree relieve Principal and Surety of their obligations under this Bond except as herein stated. No assignment of the Agreement or of the Property by the Principal, its successors and assigns, and no assignment of the Agreement by operation of law or consent of Obligee or otherwise shall in any degree relieve

Principal and Surety of their obligations under this Bond except as provided herein. However, upon assignment of the Agreement or Property in whole or in part by the Principal, its successors or assigns, to a third party, Principal shall have the right but not the duty or obligation to cause Principal's assignee to post financial security to Obligee in a form acceptable to Obligee (in the amount of and covering the remaining P&A Obligations to the extent not satisfied as of the time of such assignment), to replace this Bond (hereinafter "Replacement Security"). Replacement Security must be in a form reasonably acceptable and issued by a financial institution reasonably acceptable to Obligee. Upon acceptance of Replacement Security the Penalty Sum of this Bond shall be permanently reduced by the amount of Replacement Security.

No assignment, in whole or in part, of the Agreement or of the Properties by Principal, its successors and assigns, and no delay, neglect or failure of the Obligee to proceed promptly to enforce the Agreement or to proceed promptly in the premises in case of any default on the part of Principal shall in any degree relieve Principal and Surety or either of their obligations under this Bond.

No right or action shall accrue on this Bond to or for the use of any person or corporation other than Principal, Obligee, and their respective successors.

NOW THEREFORE, Principal and Obligee agree that any dispute, claim, or controversy concerning the interpretation of this Bond or the Agreement or their compliance with the terms of this Bond shall be resolved in accordance with the terms, conditions, and procedures in Article 17 of the Agreement and each agrees not to prosecute or commence any suit or action against the other relating to any such matters. This Bond is subject to the provisions of Section 8.04(f) of the Agreement including, without limitation, the redetermination provisions that may serve to adjust the Penalty Sum provided for herein and the ability of Obligee to draw on the Bond, in whole or in part, as expressly provided for therein. Surety shall not be required to increase the Penalty Sum provided for in this Bond as a result of any redetermination made pursuant to said Section 8.04(f) of the Agreement without Surety's written consent. In the event such written consent from Surety is not obtained, Principal will be required to obtain an additional bond to cover the incremental Penalty Sum increase as a result of such redetermination from a financial institution, mutually acceptable to Obligee and Principal, providing for terms substantially similar to those set forth in this Bond except as regards the Penalty Sum amount.

In the event of a conflict or inconsistency between the terms and provisions of this Bond and those set forth in the Agreement, as between Principal, Surety and/or Obligee, the terms and provisions of the Agreement shall control.

In no event shall Surety be liable for an amount greater than the Penalty Sum of $27,300,000.00, and upon Surety's payment of said amount, whether from one or multiple claims and/or payments, this Bond shall be null and void.

Bond No. B012127

IN WITNESS WHEREOF, the above bound parties have executed this instrument to be effective as of August 1, 2019, the name of each corporate party duly signed by its undersigned representative pursuant to authority of its governing body.

WITNESSES:

PRINCIPAL: W & T Offshore, Inc.

By:
Name: Tracy L. Krohn
Title: Chief Executive Officer
Date: 6/21/19

SURETY: U.S. Specialty Insurance Company

WITNESSES:

By:
Name: Michele K. Tyson
Title: Attorney-in-Fact
Date: June 24, 2019

OBLIGEE: Exxon Mobil Corporation

WITNESSES:

By:
Name: Mickey D. Johnson
Title: Agent and Attorney-in-Fact
Date: 6-26-19

OBLIGEE: Mobil Oil Exploration & Producing Southeast Inc.

WITNESSES:

By:
Name: Mickey D. Johnson
Title: Agent and Attorney-in-Fact
Date: 6-26-19

OBLIGEE: XH, LLC

WITNESSES:

By:

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

OBLIGEE: Exxon Mobile Bay Limited Partnership

WITNESSES:

By:

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

OBLIGEE: ExxonMobil U.S. Properties Inc.

WITNESSES:

By:

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

POWER OF ATTORNEY

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a Maryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

Edwin H. Frank, III, Michele K. Tyson, W. Russell Brown, Jr., Meredith K. Anderson
or Stephen Michael Smith of Houston, Texas

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed ******Unlimited****** Dollars ($ ***unlimited***).
This Power of Attorney shall expire without further action on November 3, 2019. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

Be It Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-In-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-In-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be It Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this June 24, 2019

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

Corporate Seals

By: _____
Daniel P. Aguilar, Vice President

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles SS:

On this 1st day of November, 2016, before me, Sabina Morgenstein, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature _____ (Seal)

SABINA MORGENSTEIN
Commission # 2129258
Notary Public - California
Los Angeles County
My Comm. Expires Nov 3, 2019

I, Kio Lo , Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this 24th day of June, 2019

Corporate Seals

Bond No. B012127
Agency No. 8353

_____
Kio Lo, Assistant Secretary

ALABAMA
OIL & GAS BOARD

EXHIBIT 14

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

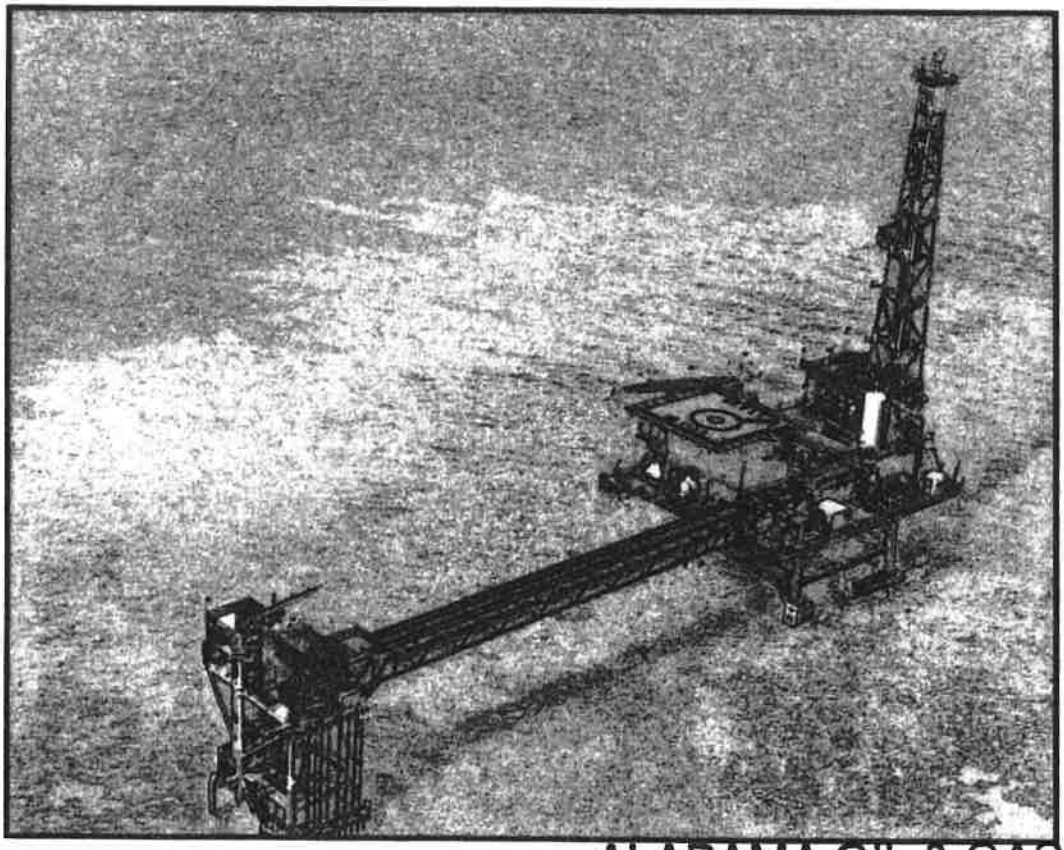
Marvin Rogers

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

OCS Study
MMS 99-0031

History of Coastal Alabama Natural Gas Exploration and Development: Final Report

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION



ALABAMA OIL & GAS BOARD

Exhibit No: 14-A
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Rogers
Received by: EP

MMS U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

AUTHENTICATED U.S. GOVERNMENT INFORMATION GPO

OCS Study
MMS 99-0031

History of Coastal Alabama Natural Gas Exploration and Development: Final Report

Authors

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Prepared under MMS Contract
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DISCLAIMER

This report was prepared under contract between the Minerals Management Service (MMS) and Foster Associates, Inc. This report has been technically reviewed by the MMS and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the MMS, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. It is, however, exempt from review and compliance with MMS editorial standards.

REPORT AVAILABILITY

Extra copies of the report may be obtained from the Public Information Office (Mail Stop 5034) at the following address:

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Minerals Management Service
Gulf of Mexico OCS Region
Public Information Office (MS 5034)
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New Orleans, Louisiana 70123-2394

Telephone Number: (504) 736-2519 or
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COVER PHOTOGRAPH

Cover photo of Platform 113a at Fairway Field, Offshore Alabama, is courtesy of Shell Offshore, Inc., an affiliate of Shell Oil Company.

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Robert Davis	Spirit Oil Company, (UNOCAL) Lafayette, LA
Henry Caddell	Thiry & Caddell, Mobile, AL

EXECUTIVE SUMMARY

Mobil Oil Company leased four tracts in lower Mobile Bay from the State of Alabama on October 24, 1969, for $78,822 with a 1/6th royalty. Following issuance of the leases, Mobil filed an application to drill a well to 16,500 feet on July 9, 1970, with a Smackover target in mind. Mobil endured a lengthy delay before obtaining approval to proceed with an exploratory drilling program. The permit was not signed until June 21, 1978—after two federal and one state court appearances by Mobil and posting a $55 million bond. The first well was spudded in tract 76 on November 17, 1978—nine years after the award of leases. The nine year regulatory delay and ultimate success make one marvel about what Mobil geologists and management knew that induced Mobil to maintain a nine year regulatory siege. The leases were a bargain; the permits were not.

The Attorney General of Alabama expressed great concern about the need to protect Mobile Bay and the Mississippi Sound from exploration and development of hydrocarbons. The conflict was ultimately resolved when Mobil proposed to drill with no discharges of any kind; the zero discharge policy continues to govern Mobile Bay operations. The oyster fishery remains healthy.

Norphlet Discovery at the Apex of the *Energy Crisis*

Mobil's first well encountered natural gas and tested 12.2 MMCFD at a total depth of 21,113 feet November 28, 1979, having discovered Norphlet formation gas—a mile below the top of the Smackover formation. At the apex of the Carter Administration's *Energy Crisis*, Mobil had discovered a giant gas field in 14 feet of water in America's back yard—not in some remote, politically unstable country, harsh environment, or 2,000+ feet of water. The prospect of $9 per MCF gas after the NGPA passed in 1978 and the Norphlet geology were extraordinarily exciting to petroleum industry professionals, who recognized the potential for discovery of other very large natural gas accumulations.

By 1981, prices for Norphlet production covered by NGPA Section 107 deep gas ranged between $7 and $9 per MCF. Mobil's Norphlet gas reserves had become a treasure beyond anyone's expectation years earlier when they applied for the exploration permit. Unfortunately, the "gas bubble" dropped prices below $2 MCF by the time Mobil's, Shell's and Exxon's production ultimately came on line. Even finding markets became a challenge unforeseen when bidding and exploration occurred.

Lease Sale Bonanza

Exxon's bids at the 1981 State of Alabama Lease Sale and the 1982 Federal Lease Sale reveal that they bet heavily on Norphlet geology and high gas prices. Exxon submitted high bids of $255.9 million for seven of the 13 tracts awarded by the State of Alabama following the 1981 sale. The industry bid on 35 tracts, but the state rejected bids for 22 tracts: with nearly $450 million in the bank—more than ever imagined—the state simply rejected bids below $2,000 an

acre. "We've struck oil," a jubilant Governor Fob James quipped after the bonuses were counted.

Between 1981 and 1984 Alabama leased tracts in state waters for bids totaling $800 million. MMS leased tracts in federal Mobile Bay OCS waters between 1982 and 1985 for bids totaling $562 million—$1.36 billion combined. Governor James subsequently agreed with the legislature to set up a perpetual trust fund to ensure that the State of Alabama would continue to benefit from the interest on the bonus proceeds. At the end of FY 1996, the balance of Alabama's trust funds had grown to $1.35 billion, having increased with the receipt of state royalty payments and the state's 27 percent share of 8(g) federal royalty payments from producing federal leases within eight miles of Alabama shoreline.

Annual interest from the funds has averaged about $100 million since 1986. The interest is transferred into the state's General Fund, where it amounts to between 11 - 12 percent of the state's General Fund budget. The trust funds and interest earnings will continue to grow so long as gas is produced from state and nearby federal waters. Substantial increases in state production and federal production in 8(g) waters during 1997 and 1998 will increase Alabama royalty collections.

High Exploration Success Rate

Seventeen Norphlet wells were spudded between 1981 and 1984, 13 of which became gas discoveries—an extraordinary accomplishment before 3D seismic. Besides Mobil's Mary Ann discovery, three state Norphlet discoveries and one federal Norphlet discovery subsequently became development projects based on discoveries before year end 1984.

Through year end 1997, 75 Norphlet wells have been drilled in state and federal waters off Coastal Alabama—28 exploration, the balance delineation and development wells. These wells discovered 20 gas fields. Twenty Norphlet discoveries for 28 exploration wells represents a 71 percent success ratio. All but three of discovered fields are producing gas. Mobil abandoned the West Dauphin Island Field as uneconomic. Exxon maintains its 867 Field lease and plans to produce it in 1998. Chevron and its partners, Conoco and Murphy, have filed a Development and Production Plan to develop Destin Dome. Exxon has drilled the most wells, 20; Mobil has drilled 19.

Mobil amended its original application to change the target from 16,500 to 21,500 feet—changing the target from Smackover to Norphlet—two years after the original application. One wonders what would have happened if Mobil had drilled to Smackover at 16,500 feet in 1970. Mobil's decision to drill below the Smackover to the Norphlet in their original exploration of Lower Mobile Bay has been a bonanza for State of Alabama coffers and American consumers, even if the prices received for the gas have been sharply lower than operators anticipated. The Coastal Alabama/Panhandle Florida Norphlet trend is one of the most important U. S. gas producing regions.

Norphlet Development Challenges

Norphlet gas is a hot, sour, high pressure, corrosive mixture of methane, hydrogen sulfide, carbon dioxide, and free water. Dealing with it is difficult, dangerous and expensive. Development requires an integrated system involving specialized technologies for production, dehydration, pipelines and processing. Over $4 billion has been spent since the early 1980s installing these systems and drilling wells in addition to nearly $1.5 billion in bonus payments to acquire the leases. Mobil, Exxon, and Shell constructed sour gas processing plants onshore Mobile County. BP, first, and subsequently Union and Chevron, decided to process Norphlet gas on the platform, shipping market-quality gas to shore. Shell alone transports corrosive wet gas to shore for dehydration and processing at the Yellowhammer Plant, relying on a proprietary corrosion inhibitor compound Shell developed in lieu of water separation on the platform.

The frontier nature of the Norphlet geology and the associated production engineering and technology challenges in many ways parallel the equally daunting but different challenges of Alaska's harsh, remote locale. Only a few of the major oil and gas companies could afford the billions of dollars and years of lead times necessary to bring the Norphlet into production. The Mary Ann Field began production in 1988—nine years from first discovery to first production. Shell's Fairway Field started up in late 1991 along with Mobil's federal 823 Field—ten years after the lease sales. BP brought its 821/109 Field online in early 1992 and Exxon started its three fields in late 1993—12 years after the 1981 lease sale. Beyond Mobil's initial regulatory siege, no significant regulatory delays factor into these development schedules.

Chevron, Mobil and Spirit Energy (Union) have dominated 1996-1997 development activity. Mobil's well 95-5, on the southern edge of its tract adjoining Exxon's producing North Central Gulf Field, came online November 1996 and produced as much as 70 MMCFD for several months before reducing production to a sustainable 50 MMCFD. Mobil's newest producing well in the OCS is 869-3; this well produced 85 MMCFD in March 1997. These two wells represent a new generation of technology using large-diameter production tubing.

Union and Chevron have been developing the eastern and western edges of the Mobile Bay OCS in their 820, 904 and 916 Units. Chevron took nine years from its first Norphlet discovery in OCS 861 in 1985 to first production in 1994. Union was able to bring its 904 Field to production in a little over five years, discovering the 904 Field in 1988 and starting production in 1993. But the well (904-1) failed due to mechanical problems. The field only came back into production three years after the first well, in December 1996 with 904-2.

Mechanical and completion problems have plagued most of the operators. Production has been reduced due to plugging, scaling and water intrusion. Total gas production would have been greater sooner but for these problems. At least 150 MMCFD of production was lost during 1996 and 1997 from failed wells and wells that are only limping along in comparison to start-up rates. Keeping Norphlet wells producing at design rates is as difficult as finding the reservoirs four miles beneath the surface.

Thumbnail company performance in the Norphlet is compared on Table X.1, which shows summary information on leasing, exploration success, and production success. The primary

objective of this report is to assemble the data summarized on Table X.1. The following observations can be drawn from the table, which does not take into account time values of money.

- Exxon acquired two to three times the acreage of its early 80s bidding competitors, Mobil and Shell, and spent 2.4 to 5.0 times as much.

- Exxon paid 26 percent more per acre than Mobil; 56 percent more than Shell.

- Union and Chevron, entering the game after energy prices came down, acquired large acreage at greatly less per acre—$588 - $645. This amounts to an average of $0.16 for each of Exxon's bonus dollars.

- Acreage is only real estate; discovered reserves matter. While recognizing the speculative nature of discovered reserves, Mobil has tallied 4.7 TCF to Exxon's 3.7 TCF GIP.

- Mobil's discovered reserves cost five cents per MCF, one-third of Exxon's 15-cent reserves. Chevron has done second best at finding reserves—six cents per MCF.

- Producing reserves creates cash flows and Mobil has produced the most gas at year end, 1997—655 BCF, 24 percent more than Exxon. Mobil started production first, 1988, compared to Exxon, which only started production in 1993.

- Shell has produced the most gas per well drilled, 52.9 BCF, twice Exxon's recovery per well. Company strategies toward size of the entire production complex importantly govern recovery per well differences among Exxon, Mobil and Shell. Problem wells and later start-ups govern Union's and Chevron's low recovery per well.

- Chevron's and Union's 1995 start-ups partially account for the much lower cumulative production at year end 1997. Their seven P&A'd, shut-in and constrained producing wells mostly accounts for low cumulative production and average production per well. Keeping wells producing matters to Norphlet economics.

- Shell's average bonus per produced MCF, $0.31, is lowest among the operators. Shell has produced 42 percent of discovered gas compared to high bonus cost per MCF producers, Exxon and Chevron, which have produced only 14 and 4 percent of the discovered GIP.

- Remaining discovered reserves show that all but Shell will be producing Norphlet for many years into the future. Shell's Fairway Field R/P ranges from 4 to 8 years.

Table X.1
Coastal Alabama Norphlet Production Indicators

Company	Bonus Payments	Acreage Leased	Discovered Reserves (GIP)	Cumulative Production 12/97	Wells Drilled 12/97	Average Production Per Well	Average Bonus per Acre	Average Bonus per Reserves	Average Bonus per Cum Prod.	Remaining Discovered Reserves
Unit of Measure	**($1000)**	**(1000)**	**BCF**	**BCF**	**#**	**(BCF)**	**($/acre)**	**($/MCF)**	**($/MCF)**	**%**
Exxon	$573,040	147.6	3720	529.9	20	26.5	$3,882	$0.15	$1.08	86%
Mobil	$242,493	78.6	4725	655.1	19	34.5	$3,086	$0.05	$0.37	86%
Shell	$116,114	46.7	880	370.1	7	52.9	$2,487	$0.13	$0.31	58%
Union et al	$72,219	111.9	885	85	7	12.1	$645	$0.08	$0.85	90%
Chevron et al	$73,097	124.3	1185	41.5	15	2.8	$588	$0.06	$1.76	96%

Notes:

1. Mobil includes Texaco tract 869.
2. Shell includes BP tract 821.
3. Chevron includes Tenneco tracts 863 and 864, and Texaco tract 872.
3. Discovered Reserves from Section 6 Appendix.
4. Cumulative Production from Tables 6.13 & 6.14.
5. Bonus Payments & Acreage from Table 3.8.
6. Wells from Table 4.10.

Production and Forecast

Coastal Alabama natural gas production surpassed 1 BCFD for the first time in February 1997, and averaged 1.02 BCFD for the year, or 371 BCF--18 percent more than 1996 production of 864 MMCFD Norphlet gas. Forty Norphlet wells produced 1.1 BCFD in February, 1998, in 17 Norphlet fields in Coastal Alabama. The expansion of Chevron's 820 and 864 Fields by two producing wells (819-1 and 864-4), Exxon's start-up of its 114-3 well, Shell's workover of well 113-3, and Mobil's drilling wells 823-A5 and 914-4 will likely sharply increase production from Coastal Alabama fields by winter 1998—if no other wells encounter production problems.

Four to six Norphlet new wells have been drilled annually in every year of the 1990s. Currently drilling and planned wells for 1998 - 2000 will maintain that average. Fifteen new Norphlet wells may add to production by year end 2000. These include temporarily abandoned wells awaiting either start-up, completion or a production decision; wells drilling at year end and planned to spud; and wells being worked-over to correct mechanical problems such as scaling. All of these wells are either field expansion wells, replacements for problem wells or wells to maintain production.
Forthcoming and planned wells will increase utilization of the sour gas processing capacity. Operators used 72 percent of existing processing plant capacity of 1.5 BCFD during fourth quarter, 1997. Planned activities appear matched to capacity, assuming that gas from some fields is shifted to other operators' plants to make the best use of facilities and capacity. For instance, Chevron processes its higher than anticipated H_2S well 863-3 in Shell's Yellowhammer plant; part of Exxon's gas is processed in Mobil's 823 plant.

Coastal Alabama Norphlet and Miocene production will rise to 1.4 BCFD by 2000. Destin Dome's production comes online after Mobile Bay production from discovered reserves reaches peak, thereby sustaining supplies to interstate markets in the 1.4 - 1.6 BCFD through 2005. Combining both the Alabama state and federal OCS offshore production, the Alabama-Destin Dome production forecast reaches and sustains 1.6 BCFD between 2002 - 2004, as shown on Figure X.1.

Cumulative production for the forecast totals about 9 TCF of Norphlet and Miocene gas by 2015. Total discovered gas in place is estimated to exceed 10.5 TCF, with ultimate recovery unknown. No one yet has produced a Norphlet reservoir to economic limit. Shell's Fairway Field evidences significant decline. Shell, uniquely, produced the field at reservoir limits and has extracted a much larger percentage of gas in place than any other operator to date. The other producers are facilities-constrained, having designed capacities to maintain nearly flat production longer.

Norphlet Overcame Every Risk

The Norphlet history mirrors the history of the petroleum industry. From halcyon beginnings, a hand-full of major oil and gas producers overcame regulatory risk, geology risk, technology risk, market risk, and price risk to develop a major domestic energy province. Mobil watched gas prices shoot up from $0.25 per MCF in 1969 to $9.00 when they spudded its first well, only to discover that its market had disappeared by 1987 when they were ready to produce. Chevron

found very low cost reserves, but has been beset with problems keeping the wells producing as designed. While gas prices will never see forecast levels that influenced Exxon's initial excitement about Norphlet, Exxon, like other operators, has cut costs to match $2.00 gas and continues to develop the Norphlet. Geology, not being politically influenced, suggests that substantial Norphlet potential extends east of the Florida-Alabama state line.

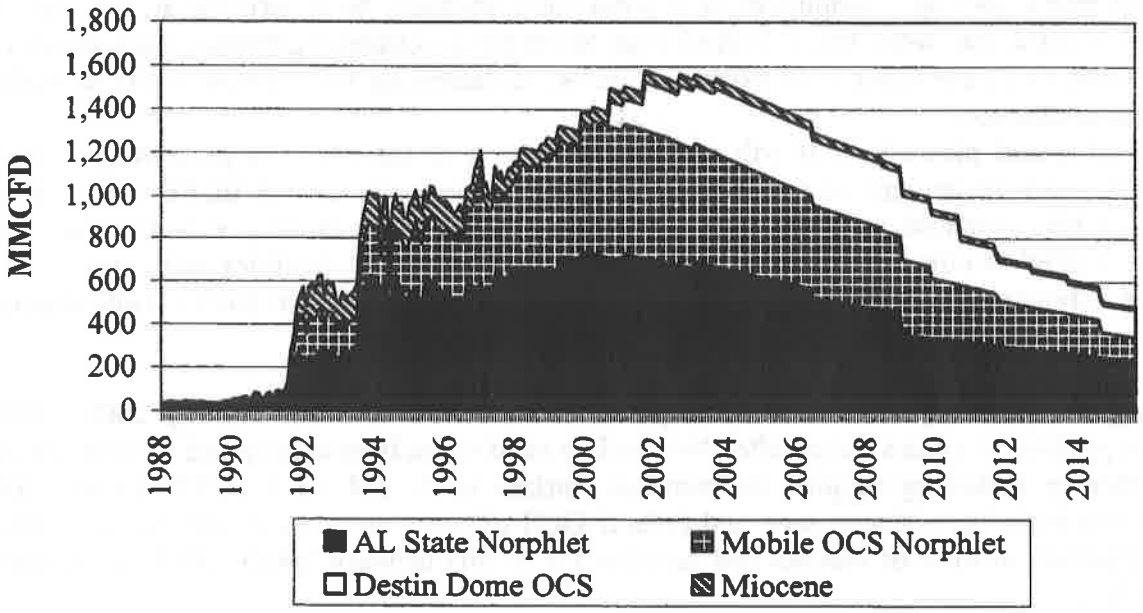


Figure X.1. Mobile Bay Offshore Gas Production History and Forecast

Source: Foster Associates, 1998.

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1.0 Mobil's Dogged Persistence Led to Norphlet Discovery

Mobil Oil Company leased four tracts in lower Mobile Bay (76, 77, 94 & 95) from the State of Alabama on October 24, 1969 for a term of five years. Figure 1.1 shows the location of Mobil's original tracts. Bonus payment for the tracts totaling 19,695 acres was $78,822 with a 1/6th royalty. Following issuance of the leases, Mobil endured a lengthy delay before obtaining approval to proceed with an exploratory drilling program. The Alabama Oil and Gas Board (AOGB) permit was not signed until June 21, 1978—after two federal court appearances by Mobil, one in state court, and the posting of a $55 million bond. The first well was spudded in tract 76 on November 17, 1978—nine years later.

Mobil was not the first lease holder of the tracks. During the 50s and 60s, tract 94 had been leased three times prior to Mobil, and tracts 95, 76 and 77 had been leased twice before. Pioneer Oil Company held the leases on the four tracts until they expired, July 1969. None of the tracts had been drilled. Mobil was the first to seek a permit to drill them. The subsequent nine year regulatory delay and ultimate success makes one marvel about what Mobil geologists and management knew that induced Mobil to maintain what became a nine year regulatory siege. "Mobil's dogged pursuit of an exploration/development project . . . [required] patience and an unswerving belief in a prospect," wrote the Oil and Gas Journal (OGJ).[1] The leases were a bargain; the permits were not.

1.1 The 1970s Regulatory Delay

Mobil filed an application with the AOGB for a permit to drill a well to 16,500 feet on one of the four tracts on July 9, 1970, with a Smackover target in mind. Mobil filed a second application for a permit to drill wells and erect structures with the Corps of Engineers (COE) on July 17. Mobil's proposed exploration came soon after the unfortunate 1969 Santa Barbara California oil spill. Sensitivity to protecting offshore and estuarine resources and beaches was very high. "Regulators shifted into a new higher gear, feeling the scrutiny and pressure of environmental organizations."[2] Governor Albert Brewer wrote to Mobil that he wanted "to make certain that Alabama has taken every precaution to prevent major oil spills in our waters." He requested the Oil and Gas Board Supervisor to form a study group to "review Alabama's present rules, regulations and laws governing offshore drilling and production and make recommendations deemed necessary to assure the very best system will be utilized by this State."[3]

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[1]Oil and Gas Journal, "Mobil has first Mobile Bay production in sight," June 30, 1986, p. 36.

[2]Tom Joiner, "The Significance of Alabama's Offshore Natural Gas Production," Speech to AOGB 50th Anniversary Reception, September 22, 1994.

[3]Quoted materials from a timeline provided by Alabama Petroleum Council, February 1997.

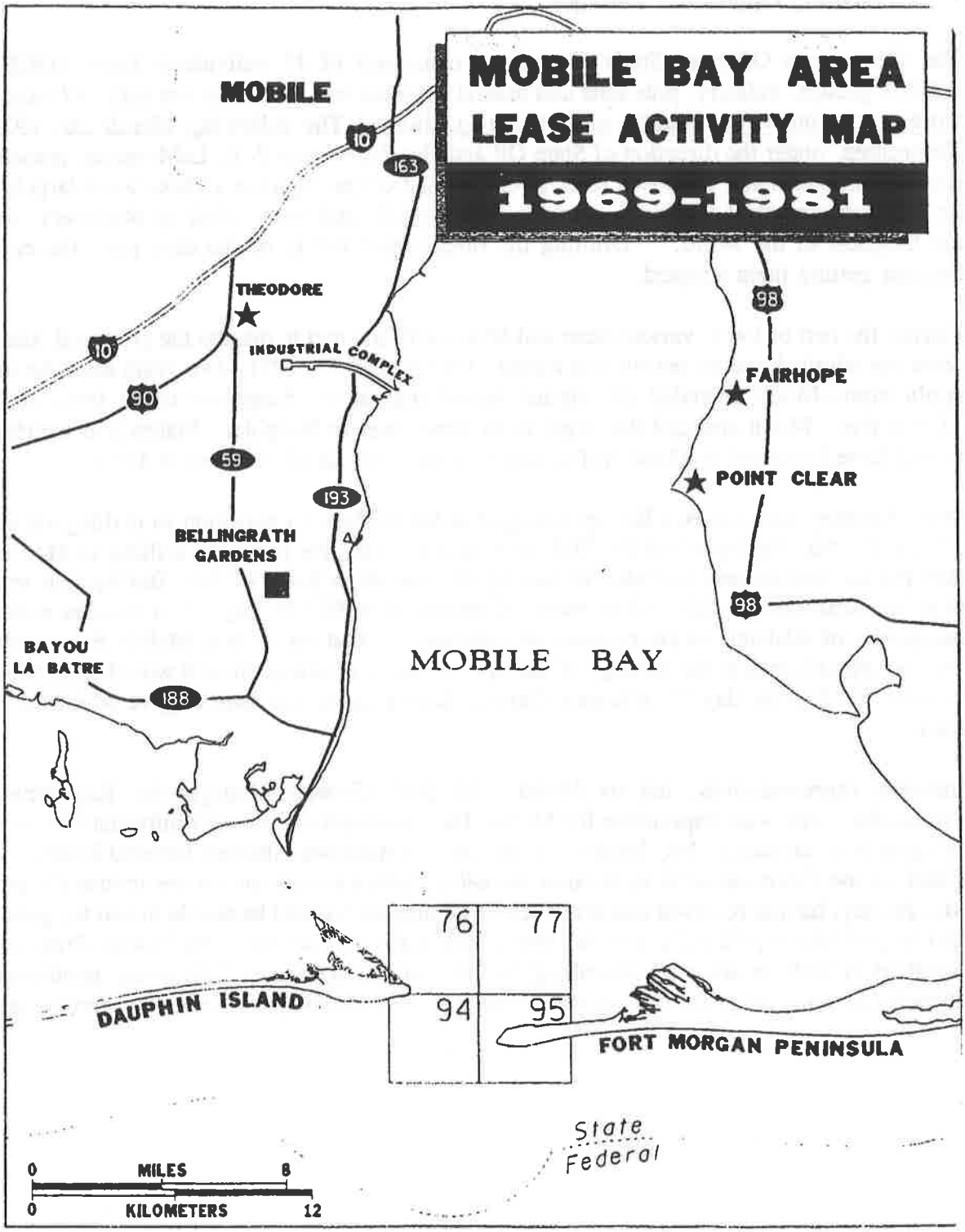


Figure 1.1. Mobile Bay Area Lease Activity Map, 1969-1981.

Source: MOEPSI, 1997.

1.1.1 Drilling Opposition Emerges

The Governor's Offshore Study Committee composed of 17 individuals from AOGB staff, wildlife groups, industry, plus state and federal agencies was formed in late July 1970 and began work to formulate reasonable rules and regulations. The following March 26, 1971, the Committee, under the direction of State Oil and Gas Supervisor P. E. LaMoreaux, presented its recommendations and proposed rules to Governor George Wallace. These were largely based on the Department of the Interior's rules for the OCS, and were called by observers "some of the toughest in the world."[4] Drafting the rules turned out to be the easy part; the challenge became getting them adopted.

During the rest of 1971, various state and Mobil officials met to discuss the proposed rules; they were not adopted and no permit was issued. On October 13, 1971—two years after the original application—Mobil amended its original permit request to change the target from 16,500 to 21,500 feet. Mobil changed the target from Smackover to Norphlet. Makes you wonder what would have happened if Mobil had drilled to Smackover at 16,500 feet in 1970.

State Attorney General Bill Baxley emerged as the leader of opposition to drilling on January 10, 1972. Mr. Baxley asked the COE to deny the permit for proposed drilling in Mobile Bay. Relying on information provided to him by the Audubon Society,[5] Mr. Baxley told reporters that "the seafood, wildlife and recreational resources of Mobile Bay are at least as valuable to the people of Alabama as are possible oil reserves . . . that oil wells in Mobile Bay would pose an unacceptable risk to the ecology of the bay . . . that a runaway oil well would spell ecological disaster for Mobile Bay."[6] Attorney General Baxley urged the state to give Mobil its money back.

Industry representatives, led by Mobil's Ed Bell, General Manager for Exploration and Production, who was responsible for Mobile Bay exploration, provided information on drilling safeguards in meetings. Mr. Baxley, in concert with Assistant Attorney General Henry Caddell, Chief of the Environmental Protection Division, turned a deaf ear on the industry's position. Mr. Baxley, having received numerous letters of support "should he decide to run for governor," had tapped into a politically popular issue. The fight was drawn. The Mobile *Press Register* weighed-in with an editorial describing the 30-year old Baxley as "the young gentleman who already has gone far in the field of state politics, [now] climbing on the bandwagon occupied by

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[4]"Oil, Gas Board to Hold Proposed Rules Hearing," undated news clip, 1972 Alabama newspaper.

[5]Henry Caddell, Letter to William Wade, March 17, 1997.

[6]"Bay oil drilling block asked," Birmingham *Post-Herald*, January 11, 1972.

zealous environmentalists."[7] But for Mobil's persistence, the Norphlet offshore may never have been discovered.[8]

Hearings were set on the proposed rules by the AOGB on August 30-31, 1972 in Mobile. The Hearings became so extensive that they spilled-over to September 26 and October 24. AOGB spokesperson Boyd Bailey summarized the proposed rules emphasizing their "toughness." Mr. Caddell, representing the Attorney General, stood firm on Mr. Baxley's "absolute prohibition" position and Mr. Ed Bell, representing Mobil, provided industry's position. The meetings introduced outspoken interveners to drilling from Fairhope, Save Our Bay, who preferred to be called the "SOBs." Mrs. Myrt Jones, President of the Mobile Bay Audubon Society, became and remains an outspoken advocate for environmental positions. A professor of Coastal Geomorphology from the University of California at Santa Barbara, Dr. Norman Sanders, delivered lengthy testimony about spills in the Gulf of Mexico, claiming that "Red Adair would be on welfare . . . if oil well drilling technology was as well developed as the oil companies say."[9] The decision to adopt the proposed rules was delayed and pushed up to the Governor.

In early June 1972, Mobil, concerned that it was three years into its five year lease term, requested the Director of the Alabama Department of Conservation (DOC) to suspend Mobil's lease obligations from July 9, 1970 until the permits were issued. This was denied June 26, 1972 on the basis of Attorney General Baxley's opinion that the "State does not have the authority to suspend these obligations at the present time." House Speaker Sage Lyons commented that "the Attorney General has made a political decision that he does not feel that there should be any drilling in Alabama offshore, regardless of the standards of safety and regulations imposed."[10]

1.1.2 Lawsuits, Negotiations and Settlement

Mobil filed a lawsuit in federal court on August 9, 1972 (Mobil v. Claude Kelly, Director of the Department of Conservation, et. al., C.A. No. 7277-72-P, U. S. District Court, Southern District of Alabama) seeking (among other relief) a decree that Mobil was entitled to have the primary terms of the leases extended by a period of time equal to the period from July 9, 1970 until the AOGB and the COE issued valid permits. This was resolved in Mobil's favor on January 11, 1973 when the federal district court entered a decision that subsequently extended the period of the leases by four years and 76 days after the AOGB issued a valid permit.

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[7]"Baxley's Negative Stand on Oil," Mobile *Press*, January 12, 1972.

[8]Tom Joiner, "The Significance of Alabama's Offshore Natural Gas Production," Speech to AOGB 50th Anniversary Reception, September 22 1994.

[9]Norman K. Sanders, " Hazards of Offshore Oil Drilling Operations," Before the Alabama Oil and Gas Board, Mobile, Alabama, October 24, 1972.

[10]AP News Analysis, Phil Oramous, July 13, 1972.

AWIC Flip-Flops

New rules and regulations governing drilling, producing and pipeline operations finally were adopted by the AOGB on January 26, 1973. Mobil then initiated an Environmental Impact Report (EIR) which went to hearings two and a half years later, in October 1975. The Alabama Water Improvement Commission (AWIC) voted in December to certify Mobil's project to drill one test well pursuant to Section 401 of the Federal Water Pollution Control Act. But this wasn't the final decision.

The Attorney General's office argued to state agencies that the state should have a single cohesive position. Dr. Robert Boucher, one of the members of AWIC and Dean of the Medical School of the University of South Alabama, moved his home to Dauphin Island about 1975 and became concerned about evacuation of the island in the event of a gas blow-out.[11] AWIC met again in February 1976 and rescinded the earlier certification to reconsider the permit because it feared pollution of Mobile Bay. Dr. Boucher's concerns and the Attorney General's position had an effect on AWIC's February 1976 reversal.[12]

Mobil quickly filed an application for rehearing and a special hearing occurred in April 1976, at which Mobil presented extensive testimony. On May 28, AWIC affirmed its earlier decision to deny certification. Mobil went back to court.

Back to Court

The following month Mobil filed an amended complaint in its case in federal court seeking an injunction against AWIC. The Alabama Attorney General filed to contend that state court, not federal, had jurisdiction, and in December 1976, federal court declined to assert jurisdiction. Mobil re-filed in state court in January 1977. The case appeared to be headed to an April 10, 1977 trial date.

Zero Discharge Policy—Settlement Agreement

Settlement talks emerged. From January 1977 to March 1978, Mobil and AWIC engaged in settlement negotiations, which included Mrs. Myrt Jones of the Audubon Society. Great concern was expressed about the need to protect oyster beds on the southwest shore of Mobile Bay and in Mississippi Sound. Mobil proposed to drill with no discharges of any kind. This became the zero discharge policy that continues to govern Mobile Bay operations. Nothing goes overboard. No drill cuttings, mud or wastewater may be discharged in Mobile Bay. No galley waste, sanitary waste or cooling water waste may be discharged. A public hearing was held in February 1978 and shortly thereafter Mobil, AWIC and other parties signed a Settlement Agreement. A Mobil spokesperson described the rules at the time as "the most stringent ever

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[11]Henry Caddell March 17 letter to William Wade.

[12]Telcon with Craig Kneisel, Assistant Attorney General, State of Alabama, April 15, 1997. Mr. Kneisel was General Counsel for AWIC at the time and worked with Mr. Caddell from the A.G.'s office.

adopted by any state—much stiffer than federal rules."[13] The COE permit was issued on May 18, 1978; Mr. Tom Joiner, Supervisor of AOGB, signed its permit on June 21, 1978. Mobil filed for a permit to drill four appraisal wells in Mobile Bay on October 26, and spudded Well 76-1 on November 17, 1978, about one mile northeast of Dauphin Island. Mobil Oil Exploration and Production Southeast, Inc (MOEPSI) was formed December 12, 1978 to take charge of the activity under Mr. Ken Keller, its first president. Mr. Keller had replaced Mr. Ed Bell as General Manager in 1976.

Two key differences set the Settlement Agreement apart from the AOGB 1973-adopted regulations:

- The zero discharge policy, and
- The $55 million bond that MOEPSI was required to assure.

Mr. Caddell, who worked closely with Mr. Baxley to urge the safeguards in place today, wrote in March 1997, "There has been a very extensive amount of drilling. I am convinced that, if they had been allowed to discharge drilling fluids, the quality of our estuary and waters would be quite different today—with more degradation."[14] Hart's *Oil and Gas World* claimed that the gas industry has had less impact on the waters of Mobile Bay than a small power boat.[15] The oyster fishery remains healthy.

1.2 Exploration Success and Continued Regulatory Initiatives

A month after Well 76-1 was spudded, the COE determined that an EIR for the appraisal program would be required. Because of the delays in the exploration permit, MOEPSI initiated the EIR right away. This led to extensive development of environmental information over 1979 and 1980, and culminated with a Draft EIR on August 15, 1980. Mobil's first well encountered natural gas and was tested at a total depth of 21,113 feet November 28, 1979, having discovered the Norphlet formation gas—a mile below the original Smackover target.

Numerous problems beset MOEPSI's drilling including Hurricane Frederic whose eye passed directly over the drilling rig without inflicting damage before it moved on and knocked out the bridge to Dauphin Island a mile to the west of the drilling rig. The final cost of the well totalled $20 million—$13 million above Mobil's 1978 cost estimate. Ultimately drilling wells to four miles beneath the surface of the earth has proven to be difficult and costly. Twenty million dollars remains the benchmark in 1997 for drilling a Norphlet well. Some have cost twice that.

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[13]OGJ, "Mobile Bay Permit may come this fall," April 23, 1978, p. 34.

[14]Henry Caddell March 17 letter to William Wade.

[15]Harts Oil and Gas World, "Mobile Bay operators bring more gas into production at high rates, high costs," April, 1995, p. 28-29.

1.2.1 The Norphlet! A Remarkable Discovery

The subsequently named Lower Mobile Bay-Mary Ann Field was the first offshore Jurassic discovery in the northern Gulf of Mexico, significantly extending the area of known onshore Jurassic production at Hatter's Pond, 50 miles north of the Mary Ann field, and the Flomaton field, 40 miles northeast of tract 76 in Escambia County, Alabama. The productive interval tested November 28 - 29, 1979 revealed 283 feet of net pay with as much as 20 percent porosity and 1 milli-darcy of permeability. Mobil Chief Geologist Roy Roadifer later termed the discovery "remarkable" at a 1986 AAPG meeting in Atlanta.[16] John McCaslin, Exploration Editor of the OGJ, described the net pay as "awesome," with 6,000 acres of productive formation and average pay thickness of 100 feet.[17] The gas tested 5 percent carbon dioxide and 9 percent hydrogen sulfide—sour, corrosive gas—thereby creating a significant challenge in the development plan.

MOEPSI spent 1980 working on the EIR and ocean dumping permit issues while further exploration stood still. On November 7, 1980 MOEPSI petitioned the AOGB to name their discovered field the Lower Mobile Bay Field, define the Norphlet Gas Pool and establish Special Field Rules.[18] Figures 1.2 and 1.3 were submitted as exhibits to show the location of the field and the contours of the Norphlet structure. Mr. F. T. Musson and Mr. Joseph B. Fryer appeared as MOEPSI's witnesses presented by attorneys Dewitt Reams and Bob Jorden. Mr. Fryer identified himself as a geologist who had worked on the project since 1969; he must have been the person who believed in the potential of the offshore Jurassic. Figure 1.2 shows the location of the discovery well in the southeast area of tract 76 along with the planned locations of two appraisal wells in tract 94, and one each in tracts 77 and 95. A single norphlet gas pool underlay all four of the tracts. This is visible on Figure 1.3, a seismic structure map that shows the discovery well virtually in the center of the reservoir. AOGB Order 80-209 named and defined the Lower Mobile Bay Field.

1.2.2 Lower Mobile Bay Field Drilling Begins

Following final approvals from the Corps and AOGB in late January 1981, Rowan 004 and Penrod 65 drilling rigs moved into Mobile Bay. Mobil spudded two appraisal wells on tracts 94 and 95 in February 1981 and constructed an operations base in Bayou La Batre. Following another year of environmental research, the Mobile Bay Norphlet gas play finally gained momentum.

MOEPSI's two appraisal wells both tested Norphlet gas in the range of 21,000 feet: 94-2 on May 27, 1982; 95-1 on August 24, 1982. (Well 94-1 was permitted twice, but never drilled.

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[16]OGJ, "Mobile has first Mobile Bay Production in sight," June 30, 1986, p.36.

[17]OGJ, "Mobil eyes new Norphlet test off Alabama," Jan 11 1988, p. 76.

[18]AOGB Docket 11-7-808. MOEPSI subsequently renamed the field Lower Mobile Bay-Mary Ann field in 1983, Docket 6-30-83, after the wife of Raleigh Warner, CEO Mobil Oil at the time. This is the only Alabama field that is not named after a geographic location.

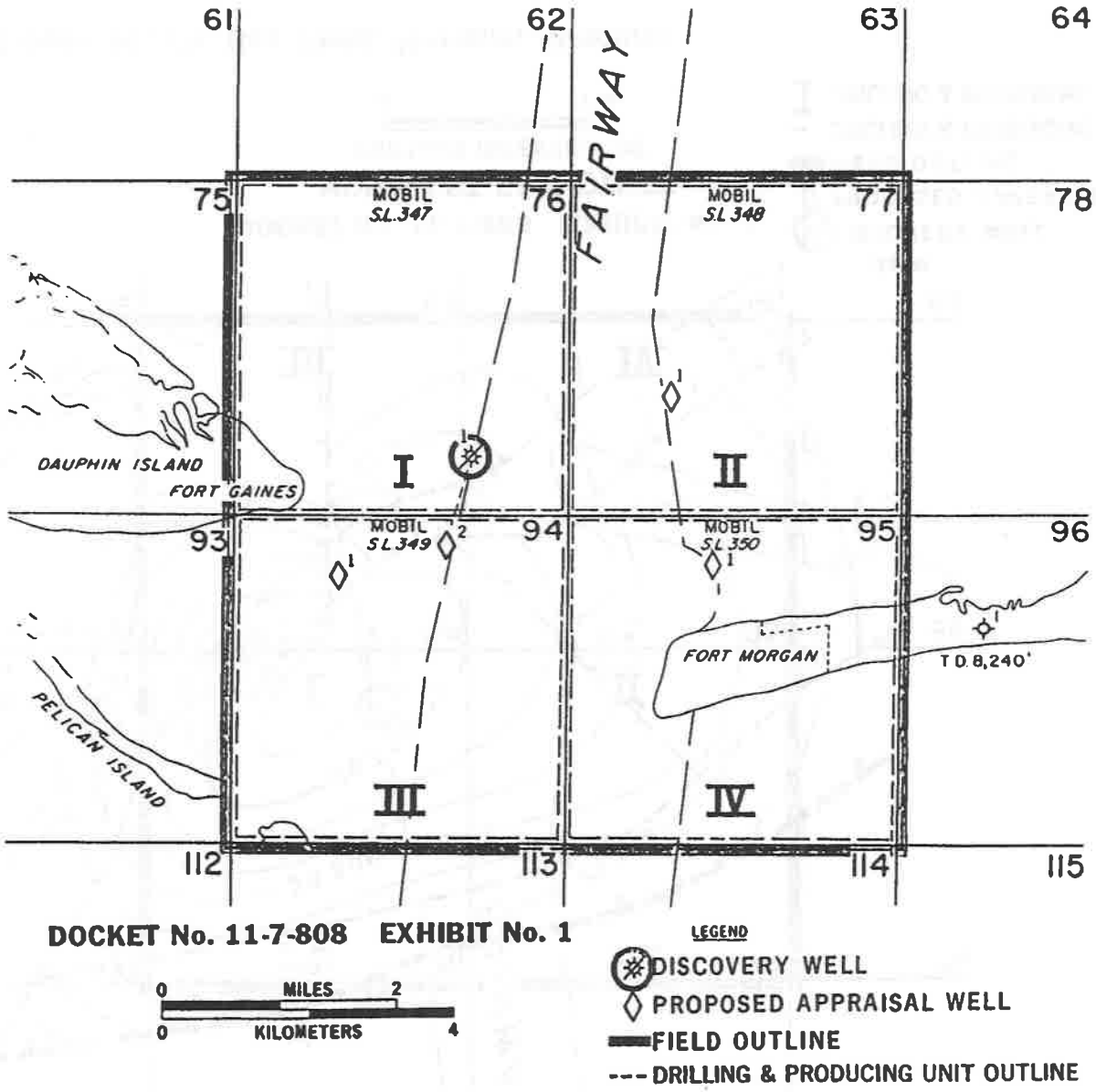


Figure 1.2. Lower Mobile Bay Field.

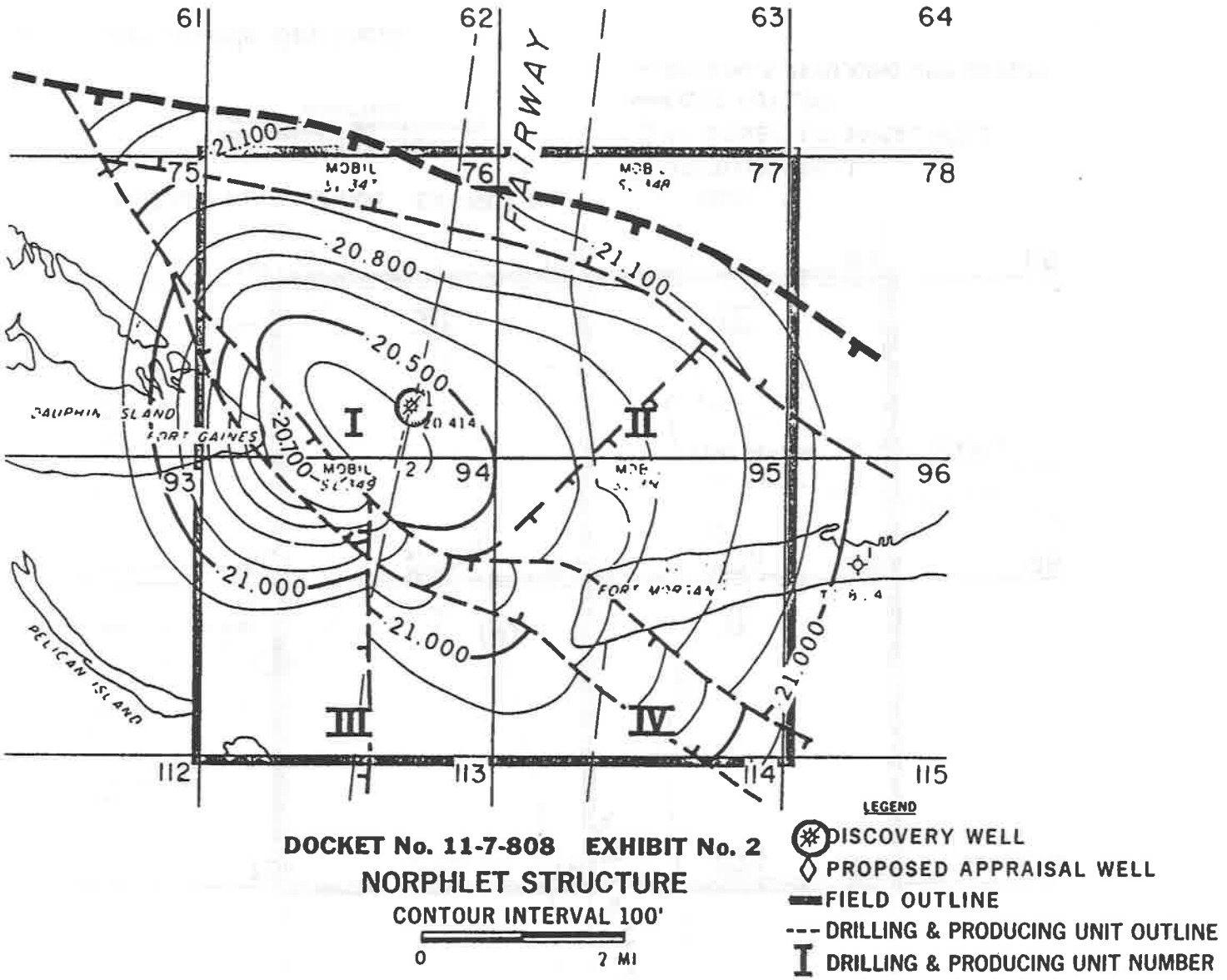


Figure 1.3. Lower Mobile Bay Field, Norphlet Structure.

94-2 was the first well drilled.) These wells required 15 and 18 months respectively to drill. Well 94-2 was drilled from the same surface location as the discovery well but was deviated to a bottom-hole location 4,600 south in tract 94. The deviation avoided the Mobile Bay shipping channel and eliminated a surface structure . The third well, 95-1, was drilled half a mile north of Fort Morgan. A fourth appraisal well, 77-1, about 2 miles north of Fort Morgan, was spudded July 17, 1982. This subsequently tested gas on March 28, 1983. Shallow well 95-2 into Miocene was successful on October 11, 1982. This was used as fuel for the subsequent platform. Well 76-2 quickly followed MOEPSI's successful Miocene well, spudding January 10, 1983. Well 77-2, the sixth Norphlet well, spudded on March 12, 1984. Both 76-2 and 77-2 were cored but not tested for gas until several years later. Mobil actually drilled six successful Norphlet wells producing between 10 and 26 MMCFD of gas between November 1978 and mid-1984—a remarkable exploration achievement in previously unexplored offshore Jurassic Norphlet. Table 1.1 lists the wells drilled to delineate the Mary Ann Field.

Table 1.1
Mary Ann Field Well Results

Well	Spud Date	Test Date	Depth	Test Results
76-1	11/17/78	11/28/79	21,113	12.2 MMCFD
94-2	2/27/81	5/27/82	21,859	15.5 MMCFD
95-1	2/1/81	8/24/82	20,935	10.5 MMCFD
77-1	7/17/82	3/28/83	20,984	19.4 MMCFD
95-2	9/18/82	10/11/82	2,750 (Miocene)	4.0 MMCFD
76-2	1/10/83	6/29/88	20,931	gas
77-2	3/12/84	8/13/87	21,710	gas

Source: AOGB

1.2.3 Illegal Discharges Threaten Continued 1982 Activity

During the course of drilling wells 94-2 and 95-1, contractors under MOEPSI's direct control were discovered in June 1982 discharging into Mobile Bay at night what was subsequently revealed to be water that had accumulated in the drilling mud barge.[19] This violated the "no discharge" policy. The Mobile Bay Venture Manager, Mr. F. D. Musson, received a phone call Friday, June 18 from an attorney, Mr. Jimmy Langford, who passed along an anonymous message that "a Mobil rig in Mobile Bay was observed to have turned its lights off at night and dumped liquid waste in the Bay." Mobil immediately looked into the allegation. "Early on Tuesday morning, June 29," Mr. Ken Keller, President of MOEPSI, subsequently testified,

[19]OGJ, "Discharges cloud action off Alabama," September 6, 1982, p. 56.

". . . I received verbal reports that I can best describe as shocking. . . . On at least one occasion in April 1982 water had been pumped into the Bay from the hopper barge which is based to collect the rig liquids and solids. We immediately on the same day reported the matter to [all appropriate state and federal agencies] . . . and issued a press release on July 1."[20]

Mr. Charles Gradick, the Attorney General who replaced Mr. Bill Baxley, AWIC, the U. S. Coast Guard, the AOGB, and Mobil itself immediately initiated investigations, along with the Audubon Society. Mobil retained its Mobile law firm Reams, Woods, Vollmer, et al to conduct an independent investigation. The firm brought in a retired FBI investigator, Mr. James A. Day, to interview drilling personnel.

MOEPSI President Ken Keller appeared before AWIC on July 12, 1982 and AOGB on July 30, 1982 and acknowledged that the discharges were not accidental and that they had occurred in the Bay "intermittently over a period of time between spring 1981 and June 1982 . . . generally at nights to avoid detection." The exact nature and quantify of the fluids was unknown, except that only water was intended to be released by the persons responsible for the improper discharge. Mr. Day's investigation revealed that motivation was apparently a "few individuals . . . trying to save time and money by sending less waste to the approved disposal sites." Mr. Keller stated that strict compliance was the company policy and that "policy and directives [had] been widely disseminated through all levels of the Mobil organization. . . . Virtually to the man . . . the [interviewed personnel] were well aware of the no discharge requirements." [21] Mr. Reams testified that the senior MOEPSI person knowledgeable was the drilling supervisor.[22] The most likely reason given by Mr. Keller for why the dumping occurred was that the drilling personnel, having worked mostly in the Gulf of Mexico, had never encountered such stringent requirements and simply ignored them because they believed them "simply unnecessary."

MOEPSI agreed to pay a fine of $2.0 million plus clean-up costs, which exceeded $500,000. OGJ wrote that "Mobil fired 15 employees and disciplined eight others who were involved in Mobile Bay drilling operations."[23] A MOEPSI management level person was directed to personally supervise drilling activities on the rig.

Swift actions by both the agencies and Mobil eliminated the problem, cleaned up the waters, and punished the guilty. MOEPSI was awaiting a COE decision on its production phase application at the time, which was delayed but subsequently issued. Exploration and development, which might otherwise have been stopped, resumed. Mobil executives today recollect that "Mr. Keller's swift action and emphatic response had a positive effect" in demonstrating to state

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[20]Testimony of Mr. Kenneth Keller to Special Session of AOGB, July 30, 1982, p. 8 - 10.

[21]Testimony of Mr. Kenneth Keller to Special Session of AOGB, July 30, 1982, p. 10, 15 - 16.

[22]Testimony of Mr. Dewitt Reams to Special Session of AOGB, July 30, 1982, p. 45.

[23]OGJ, "Mobil to pay for Mobile Bay discharges," October 4, 1982, p. 46. Mobil confirmed that 17, in fact, were fired. Mobil Public Affairs telcon April 29, 1997.

regulators that they fully intended to operate within the "no discharge" and all other restrictions.[24]

The one black mark on the exploration effort had an inoculation effect on the industry. The natural gas industry has coexisted peacefully with the other resource-based industries in Coastal Alabama, including the booming tourism industry. Experiences among the other Coastal Alabama resource industries are described in Foster Associates "Case Studies" within "Social and Economic Consequences of Onshore OCS-Related Activities in Coastal Alabama, Economic Baseline of the Alabama Coastal Region," Draft March 1998.

[24]Telcon with Mike Kimmitt, Mobil Public Affairs, April 29, 1997.

2.0 Norphlet Geology & Vintage 1980 Price Forecasts

At perhaps the apex of the Carter Administration's *Energy Crisis*, MOEPSI had discovered a giant gas field in 14 feet of water in America's back yard—not in some remote, politically unstable country, harsh environment, or 2,000+ feet deep water. Both the prospect of $9.00 per MCF gas and the Norphlet geology that MOEPSI's 1979 discovery in Mobile Bay confirmed were extraordinarily exciting to petroleum industry professionals. Even with 2D seismic technology, explorationists other than MOEPSI's recognized immediately the potential for discovery of other very large natural gas reservoirs.

The bidding and bonuses seen in the 1981 State of Alabama and 1982 federal OCS Lease Sales make sense with an understanding of industry confidence about the hydrocarbon potential and the price outlook. Section 2.1 discusses the regional geologic setting that MOEPSI had discovered. Section 2.2 discusses gas price and gas market outlooks vintage 1980 - 1984.

2.1 Norphlet Geology and Reserve/Resource Estimates

The discovery of the Flomaton Field at 15,500 feet in Escambia County in 1968 marked Alabama's first discovered hydrocarbons from the Jurassic age Norphlet Formation, and extended the eastern limit of Jurassic production about 75 miles southeast of prior discoveries in Choctaw and Clarke Counties, Alabama. This discovery led to a period of intense leasing and drilling that resulted in the discovery of the Jay and Little Escambia Creek Fields onshore the Florida Panhandle.[25] Deep oil and gas exploration gained momentum in late 1974 when the large Hatter's Pond and Chunchula Smackover-Norphlet Fields were discovered at 18,120 feet in Mobile County, about 40 miles north of MOEPSI's ultimate discovery.

MOEPSI's 1979 deep Norphlet discovery, which is similar to the Flomaton reservoir in that the gas is trapped in a faulted salt-pillow structure overlain by tight, nonproductive Smackover,[26] confirmed what geologists had believed. Tom Joiner, Chief Geologist of the State of Alabama, wrote in 1980 that the "flank of the Wiggins-Conecuh trend and updip Smackover grainstones associated with salt structures are excellent areas for petroleum exploration in Southwest Alabama." The Wiggins arch sits between the Hatter's Pond Field and the Lower Mobile Bay Field. Joiner summed it up in 1980 with these words: "Discovery of the Lower Mobile Bay Field opened up a potentially very large hydrocarbon province."[27]

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[25]OGJ, "Leasing, drilling state and federal Alabama waters," April 22, 1985, p. 134 - 135.

[26]Marzano, Michael S., Glenn M. Pense and Peter Andronaco, "A look at the Norphlet in Mary Ann field," OGJ, March 6, 1989, p. 55.

[27]Joiner, Thomas, Markel Wyatt and John H. Massingill, "A Discussion of Oil and Gas Development in Southwest Alabama," State Oil and Gas Board, Report 6, 1980.

2.1.1 Coastal Alabama Petroleum Geology

More than 135 million years ago, during Jurassic times, Mobile Bay and Southwest Alabama was a desert adjacent to a shallow sea. The Appalachians, a very old range, were much higher than today. This mountain range was heavily eroded in Jurassic times and became distributed in the present day Coastal Alabama area as an extensive sand body--the Norphlet. Streams and rivers from the Appalachian mountains carried sediments from the eroding Appalachians far out into this desert. Prevailing winds from the north reworked and redeposited these sands forming the sand dunes and different sorts of sandstones found in the Norphlet. In addition to the eolian dunes, Norphlet deposits include fluvial, interdune (wadi) and marine sediments in the areas offshore Mississippi, Alabama, and Florida. Dramatically thicker Norphlet deposits occur in the Mobile Bay area and offshore the Florida Panhandle.[28] Chevron Senior (Norphlet) Geologist Gary Jacobs described "the ancient Norphlet desert [as] similar to today's Namibia along the west coast of Africa [with] towering sand dunes two- to four-hundred feed high, with much sand between the individual dunes. It was an entire eolian depositional system or "sand sea," not individual dunes accumulating regionally."[29]

These sand dune deposits have been discovered four miles deep as the Norphlet Formation. The eolian Norphlet Formation is found in a narrow band along the Mississippi, Alabama and Florida Panhandle coast. Norphlet reservoirs are characterized as wind-deposited dunes and interdune sandstones, which vary in thickness to more than 1000 feet. Productive Norphlet gas reservoirs can be extensive and thick. Gas pays can exceed 280 feet in thickness.

State of Alabama Geologist Ernest Mancini, with colleagues Robert Mink, Bennett Bearden and Richard Wilkerson wrote the first definitive article on the Norphlet geology.[30] They called the hydrocarbon potential of the Coastal Alabama area "excellent, with structural traps primarily involving salt anticlines, faulted salt anticlines and extensional fault traps associated with salt movement. Reservoir rocks consist primarily of quartz-rich eolian, wadi, and marine sandstones having principally secondary . . . porosity with some intergranular porosity."[31] The desert plain extends west to Mississippi but the area with perhaps the maximum dune development is Coastal Alabama.[32] In 1988, they described the Norphlet as "part of a deep Jurassic natural gas trend that extends across southern Mississippi and Alabama into the Gulf of Mexico. . . .

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[28]Nat Turner and Gordon Fiedler, "Geophysical Interpretation of Jurassic Structures and Norphlet Deposition, Alabama State and Federal Waters," Seismic 4, 1985, p. 355 - 357.

[29]Gary Jacobs letter to Wade, July 23, 1997.

[30]Mancini, Ernest, Robert M. Mink, Bennett Bearden and Richard Wilkerson, "Norphlet Formation (Upper Jurassic) of Southwestern and Offshore Alabama: Environments of Deposition and Petroleum Geology," AAPG Bulletin, 69, 6, June, 1985, 881-898.

[31]Mancini, Mink, et al, 1985, p. 896.

[32]Mancini, Mink et al, 1985, p. 891.

The trend should continue from Alabama coastal waters . . . into the Pensacola and Destin Dome areas."[33]

The offshore Norphlet fields mostly produce from the eolian dune facies. The porosity of the sands tends to be higher in the federal fields, which average 14 percent, than in the state fields, which average 12 percent.[34] Another important facies in the offshore Norphlet is the presence of marine reworked sands at the top of the formation. This very low porosity zone is not considered productive and constitutes a waste zone, which where present, greatly improves recoverable reserve estimates. This zone ranges in thickness from zero to over 100 feet and is relatively unpredictable. Capping the Norphlet is a thin tight pyrite rich sandstone.

The natural gas in Norphlet reservoirs is found in generally northwest-southeast trending sand dunes. The primary trapping structural style is broad, low-relief, faulted, salt anticlines associated with small-scale growth faults. The seal for natural gas is generally a tight upper section of the Norphlet overlain by nonpermeable Smackover carbonates. The primary source of the natural gas is Smackover algal carbonate mudstones. Thermogenic dry methane gas produced as a result of thermal degradation of crude oil commonly is associated with hydrogen sulfide and carbon dioxide, which are present in all of the Norphlet discoveries.[35]

Subsequent to the Mancini, Mink et al papers, Mobil made available information developed by its research geology staff. The 1988 paper by Michael Marzano, Glenn Pense and Peter Andronaco added to the geologic knowledge of the Norphlet.[36] A subsequent paper by Tew, Mink et al summarized Norphlet regional geologic patterns that commonly accompany the presence of natural gas.[37]

Productive Norphlet natural gas reservoirs are found in anticlinal traps where there is a fortuitous combination of source rock. The mechanism of structure formation appears to be basinward salt flowage that formed large, broad and subtle anticlines, most of which are faulted. The seal for natural gas in the Norphlet is a generally tight section of the Norphlet in the upper part of the formation, overlain by lower Smackover carbonates which are also nonpermeable.

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[33]Mancini, Mink, Bearden and Hamilton, "A look at recoverable gas reserves in the Jurassic Norphlet formation off Alabama," OGJ, January 18, 1988, p. 62 - 64.

[34]U.S. DOI, Minerals Management Service, "Atlas of Northern Gulf of Mexico Gas and Oil Reservoirs," Volume I, Table 4.

[35]Mancini, Mink, et al, 1988, p. 64.

[36]Marzano, Michael S., Glenn M. Pense, and Peter Andronaco, "A Comparison of the Jurassic Norphlet Formation in Mary Ann Field, Mobile Bay, Alabama, to Onshore Regional Norphlet Trends," Transactions—Gulf Coast Association of Geological Societies, XXXVIII, 1988, p. 85 - 100.

[37]Tew, Berry H., Robert M. Mink, Steven D. Mann, Bennett L. Bearde, and Ernest A. Mancini, "Geologic Framework of Norphlet and Pre-Norphlet Strata of the Onshore and Offshore Eastern Gulf of Mexico Area," AOGB Reprint Series 83, 1991, p. 596.

The majority of the Norphlet fields in the Mississippi, Alabama, Florida (MAFLA) region are found in the following geologic settings.

- Major basement highs affected sedimentation in the eastern Gulf—the Wiggins Arch complex, which includes the Baldwin High, the Conecuh Ridge, and Pensacola-Decatur Ridge in northwestern Florida.

- The best Norphlet facies are eolian sandstones that accumulated as thick dune, interdune, and marine sandstones.

- The key factor controlling hydrocarbon potential are areas that have thick accumulations of Louann Salt, characterized by salt-produced peripheral faults, salt-produced anticlines, and low relief domes.

Though unproductive at this time, potential undiscovered traps may be found where the Norphlet either thins or terminates over or against the basement highs, notably the Wiggins arch and the Pensacola-Decatur ridge complex. Regional stratigraphic and production data show that optimal reservoir sands and structures abound in the MAFLA region. AOGB Bulletin 140 concluded in 1991 that "the probability is high for numerous additional Norphlet fields" to be established in these areas.[38] Especially in federal waters, many low relief faulted salt cored anticlines remain to be tested to the east of discoveries offshore Coastal Alabama.

2.1.2 Alabama Waters Norphlet Reserve Estimates-1987

Mink, Hamilton, et al estimated recoverable reserves for sales gas (net of impurities, notably H_2S and CO_2) in Alabama state waters to range between 5.7 and 6.5 TCF in 1987.[39] The proved estimates shown on Table 2.1 represent reserves in reservoirs that had been penetrated by wells which provided significant geologic and engineering data by 1987. The potential reserves included natural gas that may be found in state waters in prospective reservoirs and in reservoirs that required further delineation. The 70 - 80 percent range shown on the table represents the amount of reserves in place assumed recoverable with existing technology and economic conditions.

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[38]Mink, Robert M., Berry Tew, Steven Mann, Bennett Bearden and Ernest Mancini, "Norphlet and Pre-Norphlet Geologic Framework of Alabama and Panhandle Florida Coastal Waters Area and Adjacent Federal Waters Area," AOGB Bulletin 140, 1990, p. 52.

[39]Mink, Robert M., Richard P. Hamilton, Bennett L. Bearden and Ernest A. Mancini, "Determination of Recoverable Natural Gas Reserves for the Alabama Coastal Waters Area," Oil and Gas Report 13, AOGB, 1987.

Table 2.1
Recoverable Sales Gas Reserves for Alabama Coastal Waters
(1987) TCF

Recovery Factors	70%	80%
Proven	3.65	4.17
Potential	2.06	2.35
Total	5.71	6.52

Source: AOGB, 1987.

2.1.3 Alabama and Federal Mobile OCS Reserve/Resource Estimates-1997

MMS and AOGB officials provided proved recoverable reserve estimates to Foster Associates for Norphlet fields. These are shown on Table 2.2. Assuming a 75 percent recovery factor, nearly 9.0 TCF of recoverable, marketable Norphlet gas has been discovered in state and federal leased areas. These reserves are tied to volumetric estimates of specific reservoirs. The estimates do not include more speculative notions of undiscovered reserves or potential resource estimates. The most uncertain aspect of these reserve estimates is the recovery factor. No one has any experience with ultimate recovery from Norphlet reservoirs. Judging by some of the problems operators have encountered with scaling and water intrusion, maintaining production in Norphlet wells is a risk beyond the usual geologic risks anticipated in recoverable reserve estimates. (Mechanical and water problems are discussed in Section 6.0.)

Achievement of the 75 percent recovery factor is clearly not certain. If the ultimate recovery is only 55 percent of gas in place, the discovered recoverable reserves drops to about 7 TCF and remaining reserves is about 4.8 TCF. At the 1997 average production rate of 1.0 BCFD, the reserve to production ratio (R/P) is between 13 - 19 years of remaining Norphlet production at 55-75 percent recovery.

Another speculative element of the reserve estimate is the OCS Destin Dome >1 TCF estimate. This only reflects Chevron's discovery. The Norphlet potential beyond that is not addressed in Table 2.2.

Table 2.2
Recoverable Sales Gas Reserves for Alabama Coastal Waters
(1997) TCF

	State	Mobile Bay OCS	Destin Dome OCS	Total
Recovery Factor	75%	75%	75%	75%
Proven	5.0	2.9	>1	>8.9
Cumulative Production, Year end, 1997	1.1	.6	0	1.7
Remaining Recoverable	3.9	2.3	>1	>7.2

Source: AOGB, 1997; USDI, MMS, 1997.

The Norphlet may yet become "another Prudhoe Bay," as Exxon Exploration V.P. Stephen M., Cassiani announced after the 1984 State Lease Sale. Norphlet reserve estimates by the Gas Research Institute in their 1996 projections, predict that discovered reserves in the Norphlet trend will reach 13 - 15 TCF between 2000 - 2005.[40] This estimate includes the entire Norphlet that extends east from Louisiana across Mississippi, Alabama and eastward beyond the OCS Destin Dome. While there will be continued drilling of known but unprobed Norphlet structures in Coastal Alabama and Mississippi between now and 2000, there is no other Norphlet leased acreage to drill to yield GRI's reserve estimate of twice that of Table 2.2 by 2005. Offshore Panhandle Florida may yet prove to fulfill GRI's prediction.

2.2 Gas Price Outlooks—Early 1980s—and Subsequent Market Developments

Since the 1954 Phillips case,[41] the U.S. natural gas market has exhibited substantial price variations primarily caused by changes in macroeconomic growth, interfuel competition (primarily from fuel oil), and federal price regulations. One of the high price outlook periods stemmed from the passage of the Natural Gas Policy Act (NGPA) of 1978 and lasted until about 1982. During this brief period the State of Alabama was fortunate enough to conduct its first offshore lease sale in March 1981, and MMS conducted Lease Sale 67 in February 1982.

Figure 2.1 provides an overview in the forces affecting U.S. natural gas market conditions during five epochs from the mid-1970s to 1996. MOEPSI's regulatory struggle with the State

[40]Paul Holtberg, Thomas J. Woods, Marie L. Lihn and Kathy D. Nice, "Baseline Projection Data Book," GRI, 1996, p. 517.

[41]Phillips Petroleum Co. v. Wisconsin, 347 U.S. 672 (1954), 53, 128, 624.

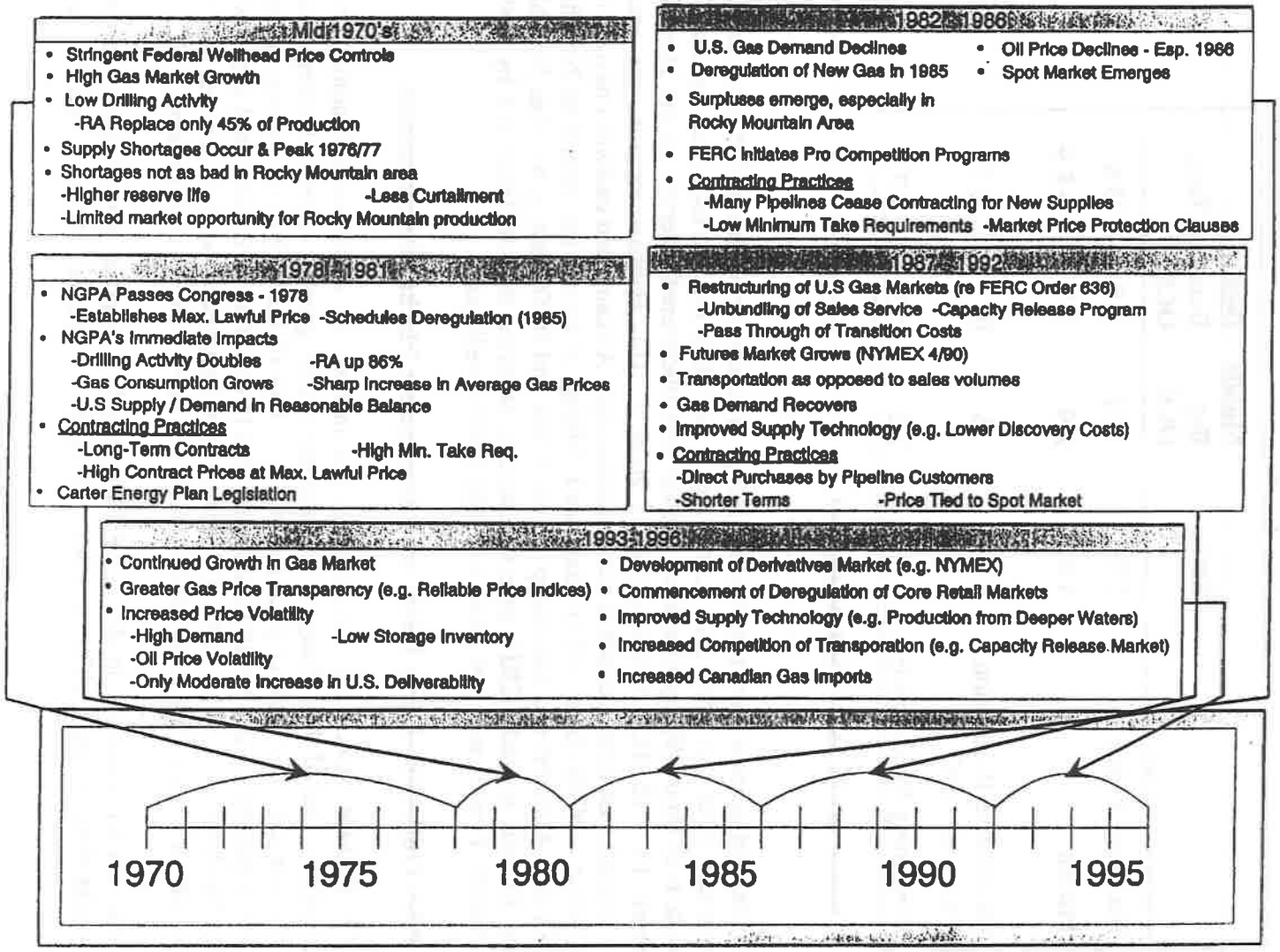


Figure 2.1. Epochs of U.S. Natural Gas Market Conditions.

Source: Foster Associates, 1997.

of Alabama fortunately occurred during the 1970s, the period of wellhead price controls. When MOEPSI filed for a permit in 1970, gas was selling for about $0.25 per MCF. The world crude oil price was about $3.00 per barrel. International crude oil price shocks related to the 1973 oil embargo and Middle East political instability in 1979 increased the price of world crude oil more than ten-fold, as can be seen on Figure 2.2., while domestic crude oil and gas prices remained controlled at lower levels throughout the 1970s.

High gas demand growth matched by low reserve replacement caused interstate gas shortages beginning in the early 1970s that worsened during the severe 1976/77 winter. Something had to be done. President Carter's Project Energy Independence was born.

2.2.1 NGPA: 1978 - 1982

The NGPA was passed by Congress in late 1978 in response to gas shortages that resulted from stringent federal price regulatory policy by the Federal Power Commission (succeeded by the Federal Energy Regulatory Commission in late 1977). The NGPA represented a series of compromises to mollify both consumer and producer interests. Among the provisions protecting consumers, the existing field price ceilings generally were retained (e.g., vintage pricing) for gas dedicated to interstate commerce at the enactment of the NGPA. New and higher price ceilings were created for gas discovered after 1978. In total, about 25 different pricing categories were created. Producers' interests were satisfied by immediately removing the price ceilings for certain new gas categories, beginning with "deep gas" (gas produced below 15,000 feet), and finally, by scheduling removal of price regulations for most post-NGPA gas in 1985.

The federal regulatory policy also included the determination of pipelines' resale rates based on the weighted average price of gas purchased by regulated companies (e.g., interstate pipelines). Because of this pricing mechanism that averaged all gas costs, new deregulated gas prices could increase substantially and yet the resale rate would remain competitive with fuel oil, at least for a while. Eventually, as producers concentrated their drilling efforts on the higher price categories and production from lower price vintage gas sources declined, average gas prices increased and gas became less competitive with alternatives. To illustrate, the U.S. wellhead average price increased from about $0.91 per MCF in 1978 to about $2.50 per MCF in the early 1980s.

Immediately after the NGPA was passed through about 1981, the price of unregulated new gas shot up. During this period, prices for NGPA Section 107 deep gas, which included Norphlet production, ranged between $7 and $9 per MCF. MOEPSI's discovered Norphlet gas reserves were now a treasure beyond anyone's expectation years earlier when they applied for the exploration permit.

A typical pipeline/producer contract executed during this period reflected these high prices, a "favored nation" provision, a minimum take provision, a take-or-pay provision and no mechanism for reducing the contract price even if subsequent market conditions warranted.

Forecasts of U.S. gas prices by authoritative sources (e.g., the U.S. Dept. of Energy) during this period show the expectation of continuously high and rising prices. One reason for the

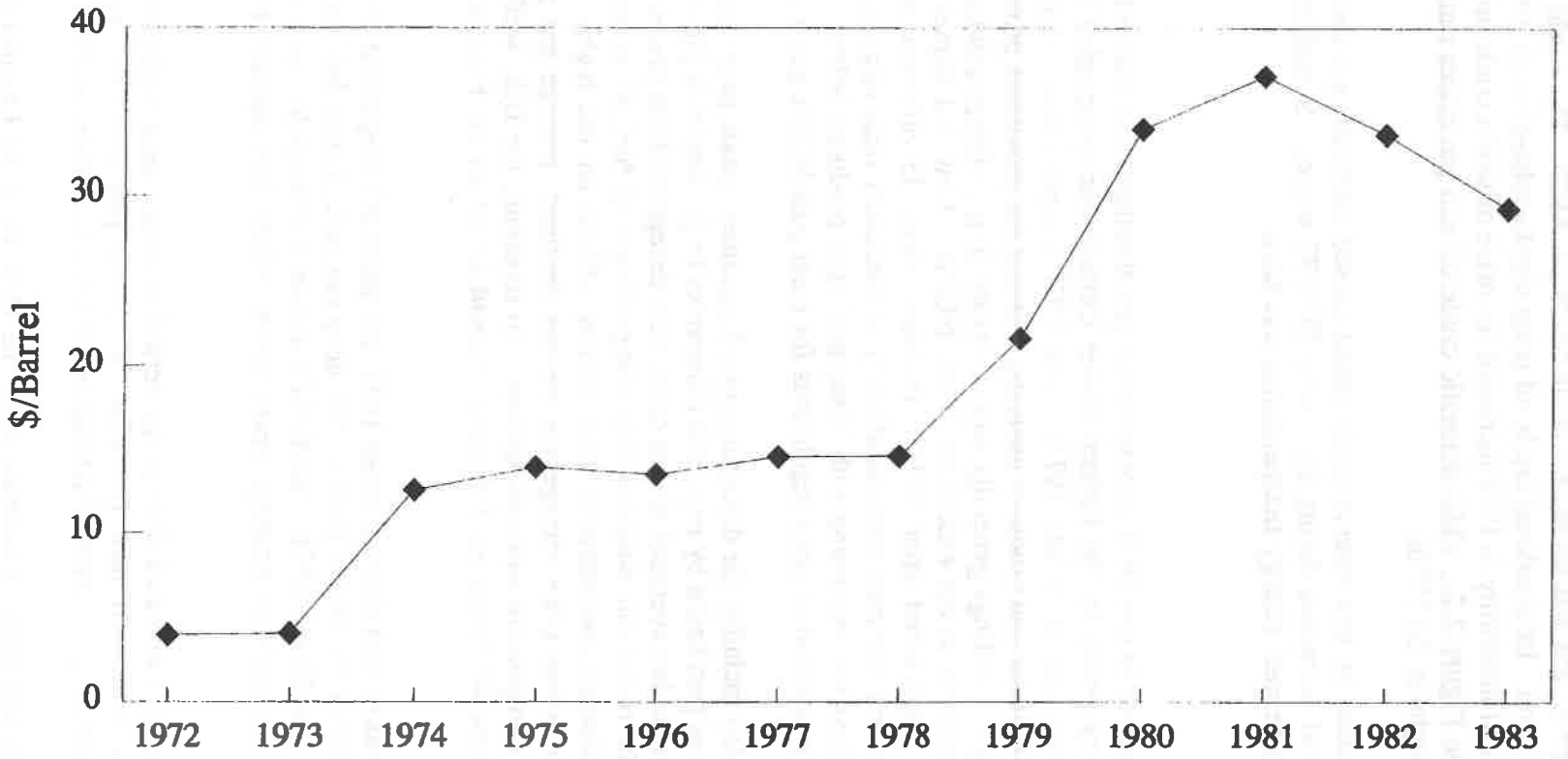


Figure 2.2. World Oil Prices, 1972-1983.

Source: USDOE, EIA, Annual Energy Reveiw, 1983; Annual Energy Outlook, 1983.

forecast of high gas prices was the fact that experts were forecasting high oil prices. Table 2.3 summarizes DOE's oil and gas price forecasts made in 1981, 1983 and 1985, compared with the actual prices that ensued. Prices shown for natural gas are the average of all categories of regulated and unregulated gas.

Table 2.3
DOE Oil and Gas Price Forecasts

		Projected (mid range)			
	Actual 1980	1985	1990	1995	2000
Forecasted in 1981 (1980 dollars)					
Oil ($/Barrel)	$34	$33	$49	$67	$75
Gas ($/MCF)	$1.59	$3.33	$6.02	$7.63	$8.28
Forecasted in 1983 (1983 dollars)					
Oil ($/Barrel)	$34	$27	$37	$50	NA
Gas ($/MCF)	$1.59	$2.68	$3.62	$6.33	NA
Forecasted in 1985 (1985 dollars)					
Oil ($/Barrel)	$34	$27	$34	$50	NA
Gas ($/MCF)	$1.59	$2.60	$2.68	$4.03	NA
Actual (nominal dollars)					
Oil ($/Barrel)	$34	$27	$22	$22	$15[1]
Gas ($/MCF)	$1.59	$2.51	$1.71	$1.75	$2.24[1]

Sources: USDOE(EIA) Annual Energy Outlook, 1981, 1982, and 1983.
USDOE(EIA), Monthly Energy Review, (11/96)
[1]USDOE(EIA), Short-Term Energy Outlook, (4/98), 1998 data.

EIA's 1980 Annual Report to Congress[42] reported that "the world is—and has been for some time—running out of relatively cheap sources of energy." The 1981 DOE forecast called for oil prices of $67 by 1995—in 1980 dollars. The 1981 DOE Annual Report to Congress projected oil prices in nominal dollars to reach $246 per barrel by 2000 on the first page of the report. Keep in mind that the Iranian revolution and Iran-Iraq conflicts reduced OPEC exports in 1979, while demand for OPEC oil had grown over the prosperous 1970s. Couple this with the March, 1979, Three Mile Island incident, which eliminated America's nuclear panacea—virtually overnight—and the Energy Crisis was born. Oil prices shot up to more than $40 per barrel in late 1979 from ~$11.00 in 1978. This is why price forecasts for more than $100 per barrel were common. Those were turbulent times.

In 1983 and 1985 DOE was still forecasting $50 oil and $4 - $6 average wellhead gas prices, even though it had dropped its novel "fly-up" assumption; i. e., that regulated gas prices would fly up to the $7 - $9 prices seen for deregulated prices in 1981 when all gas prices were

[42]USDOE, EIA, Annual Report to Congress, May 27, 1981, Executive Summary.

decontrolled in 1985. Remarkably, the 1983 Annual Energy Outlook discovered supply elasticity and noted that the significant supply response since 1981 caused it to reduce its 1990 gas price forecast.

These DOE forecasts of high gas prices were not unique, as illustrated by a comparison of oil and gas price forecasts prepared by others during the 1980-82 period. Table 2.4 shows the 1981 world oil price as $37 per barrel and forecasts to 1990 ranging between $41 and $64 in real dollars. U.S. average wellhead gas prices were forecast to range upward to $6.50 per MMBtu. Exxon called for a "50 percent increase in the purchase prices of Middle East crude oil in real terms between 1980 and 2000" in its 1980 World Energy Outlook.[43] Exxon was pessimistic about the outlook for U.S. gas supplies, projecting the decline in lower 48 production between 1973 and 1980 into the future and calling for completion of a pipeline from Alaska to the lower 48 to bring-in Alaska's huge gas reserves. Exxon projected that syngas would provide nearly 10 percent of U.S. gas supply by 2000. New gas discoveries were anticipated to account for 44 percent of the 2000 gas supply mix[44]—no doubt induced by the $5 - $6 gas price forecast.

2.2.2 Price Stabilization: 1982 - 1986

Forecasters began to reduce their price outlooks in the mid-1980s. Beginning in about 1982, energy market conditions changed dramatically. Oil prices declined for the first time since the sharp run-ups that began in 1973. An economic recession occurred in 1982 and excesses of natural gas supplies began to emerge. The "gas bubble" set in. So much new gas had been discovered within a few years that supplies overhung demand. By 1986, as MOEPSI was to discover, finding markets for new gas became difficult.

Gas prices began to decline. Gas contracting practices changed. In particular, purchasers began to negotiate market-sensitive pricing provisions into their contracts (e.g., market-out provisions). Because of the high-cost gas contracts that remained in effect, new gas prices had to be kept low in order for the average prices to be competitive. A typical market price during 1982-1984 for the new deep gas was in the range of $2.50 per MCF, compared with the $7 to $9 per MCF price of high cost gas under contracts with 1979-81 execution dates.

FERC initiated a pro-competitive policy. In October 1985, FERC issued a keystone rule, Order No. 436, that required interstate pipelines to become open-access carriers. As a result of these events, forecasters revised their subsequent price outlooks sharply downward. Table 2.3 shows that DOE's gas price forecast for 1990 dropped from $6.02 per MCF (1981 dollars) forecast in 1981, to $3.62 per MCF (1983 dollars) forecast in 1983, to $2.68 per MCF (1985 dollars), forecast in 1985.

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[43]Exxon, World Energy Outlook, December, 1980, p. 3.

[44]Exxon Company U.S.A.'s Energy Outlook: 1980 - 2000, p. 12.

Table 2.4
Comparison of Forecasts of 1990 Oil and Gas Prices
1980-1982
$ (1981)

Product and Forecaster		Actual 1981	Projected 1990
World Crude Oil (per barrel)			
DOE —	EIA (2/82)	37	54
	NEPP (7/81)	37	52
	OPPA (8/82)	37	42
DRI		37	41
A.G.A		37	46
Exxon		37	46
Sherman Clark Associates		37	64
U.S. GAS (wellhead per MMBtu)			
DOE —	EIA (2/82)	1.98	6.54
	NEPP (7/81)	1.98	6.61
	OPPA (8/82)	1.98	5.67

Sources:
American Gas Association, TERA Analysis, November 21, 1980.
U.S. Department of Energy, Office of Policy, Planning and Analysis, Energy Projections to the Year 2000, A Supplement to the National Energy Policy Plan, July 1981.
U.S. Department of Energy, Office of Policy, Planning and Analysis, Energy Projections to the Year 2000, A Supplement to the National Energy Policy Plan, August 1982.
U.S. Department of Energy, Energy Information Administration, 1981 Annual Report to Congress, February 1982.
Data Resources, Inc. Energy Review, Summer 1982.
Exxon Corporation, World Energy Outlook, December 1980.
Sherman Clark Associates, Evaluation of World Energy Developments and Their Economic Significance, March 1981.

2.2.3 Restructuring and Emergent Commodity Pricing: 1986 - 1992

The petroleum industry experienced a "reverse price shock" in 1986, when price-induced reductions in demand for OPEC oil supplies resulted in excess OPEC producibility that the cartel was unable to manage. Saudi Arabia, in particular, concluded that it was no longer in its self-interest to continue to withhold production from markets. Saudi Arabia moved to netback pricing, thereby guaranteeing the competitiveness of its oil in world markets. As a consequence,

it increased its production at substantially lower prices than had prevailed in late 1985/early 1986.

Oil prices plunged to less than $10 per barrel, before stabilizing generally in the $15 - $20 per barrel range since 1987 as shown on Figure 2.3. The resultant competitiveness of fuel oil in fuel-switchable markets further dampened natural gas demand growth, and the supply overhang continued to suppress natural gas wellhead prices. Average gas prices shown on Figure 2.4 stabilized under $2.00 per MCF. MOEPSI's discovered Norphlet gas had gone from less than a dollar per MCF to $9.00 per MCF and back to about $2.00 while permitting, exploration and development ensued. Quite a wild ride.

Confronted with the "gas bubble," natural gas producers in particular sought to increase the market for natural gas. The advent of non-discriminatory open-access transportation service on FERC-regulated natural gas pipelines under Order 436 held out the promise for market penetration and sales growth for producers, or marketers representing them. However, the dual-role of interstate pipelines as both transporter of gas owned by others, and merchant of gas sold to pipeline customers was an obvious conflict. Producers raised concerns at FERC that the institutional setting was impeding the market growth for a clean-burning essentially 100% domestic energy source. For example, the pipelines still had gas purchase contracts that made it logical for them to promote their bundled gas-plus-transportation service at the expense of limited progress on opening up markets for gas producers.

This tension led to FERC issuing Order 636 in April 1992. Order 636 effectively eliminated the interstate pipelines' gas sales role, streamlined the mechanisms for gas shippers to obtain pipeline transportation rights, and substantially advanced the FERC's objective of attaining robust competition in natural gas supply and acquisition. The resultant competitive gas supply markets have been further enhanced by the growth of short-term market price discovery, both in the cash and futures markets, through electronic communication systems. Pipeline usage planning centers around monthly forecasts, and therefore much gas is sold and priced just prior to the calendar month. Monthly natural gas pricing information is widely-disseminated by reliable trade publications, and longer-term contracts commonly have their prices set monthly based on such prices. Figure 2.5 shows the monthly average contract price series governing offshore Louisiana production. Month price volatility is apparent as seasonal demands, gas storage adequacy and colder winters significantly affect prices. Eastern U. S. had two successive cold winters—1995/96 and 96/97. Market conditions drove monthly contract prices above $3.00 per MCF for the first time since regulatory interference had pushed them that high 15 years earlier.

2.2.4 Commodity Pricing and Growth of Efficient Markets: Post 1993

Active and price-responsive markets for most of the natural gas sold in the U.S. have resulted from FERC initiatives and institutional changes. These institutional changes—away from regulatory rigidities and inefficient markets—combined with relatively low and fairly stable crude oil prices, and with technological advances in natural gas supply discovery and development, have kept natural gas wellhead prices at fairly stable and low levels. At the same time, dependence upon monthly pricing regime and the emergence of active day-by-day short term

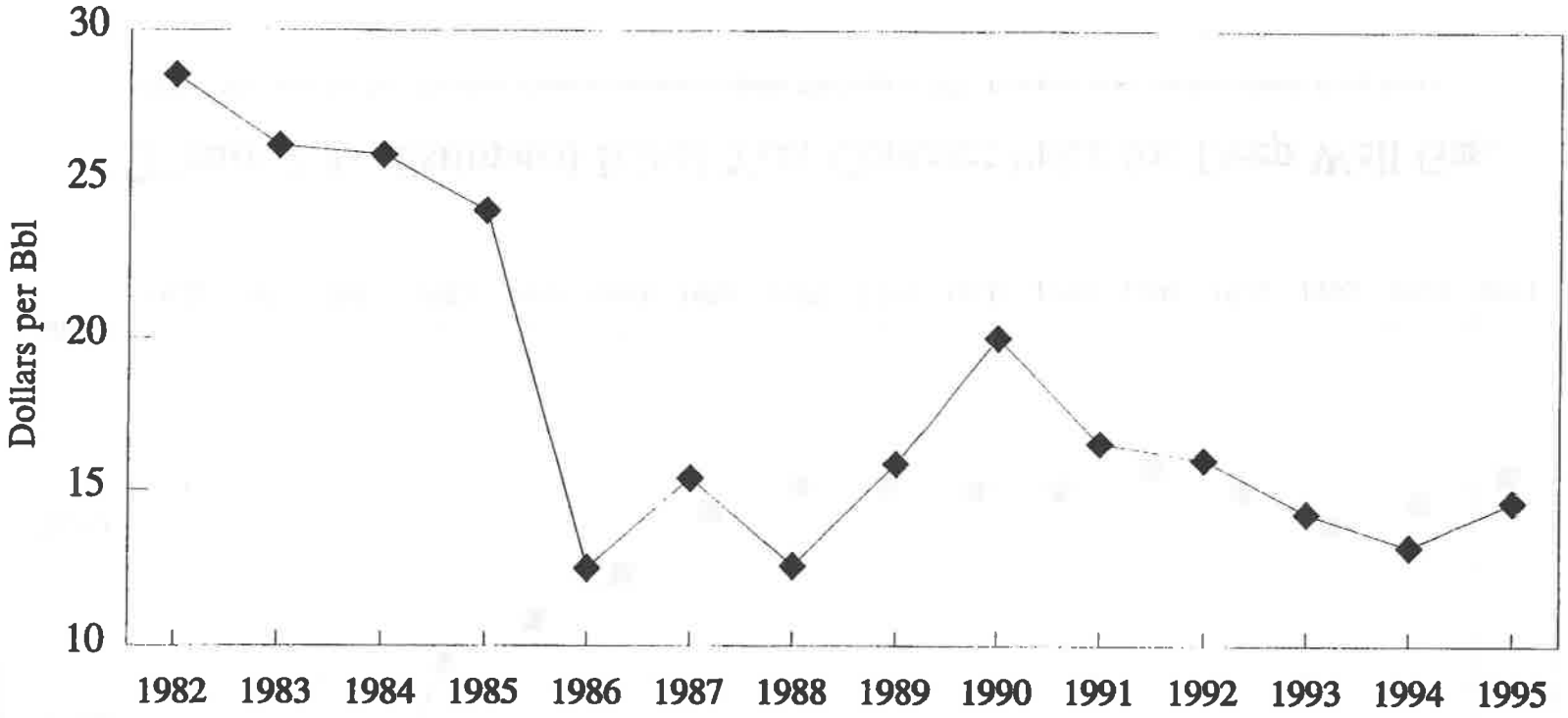


Figure 2.3. Average Crude Oil Prices, 1982-1995.

Source: USDOE, EIA, Annual Energy Review, various years.

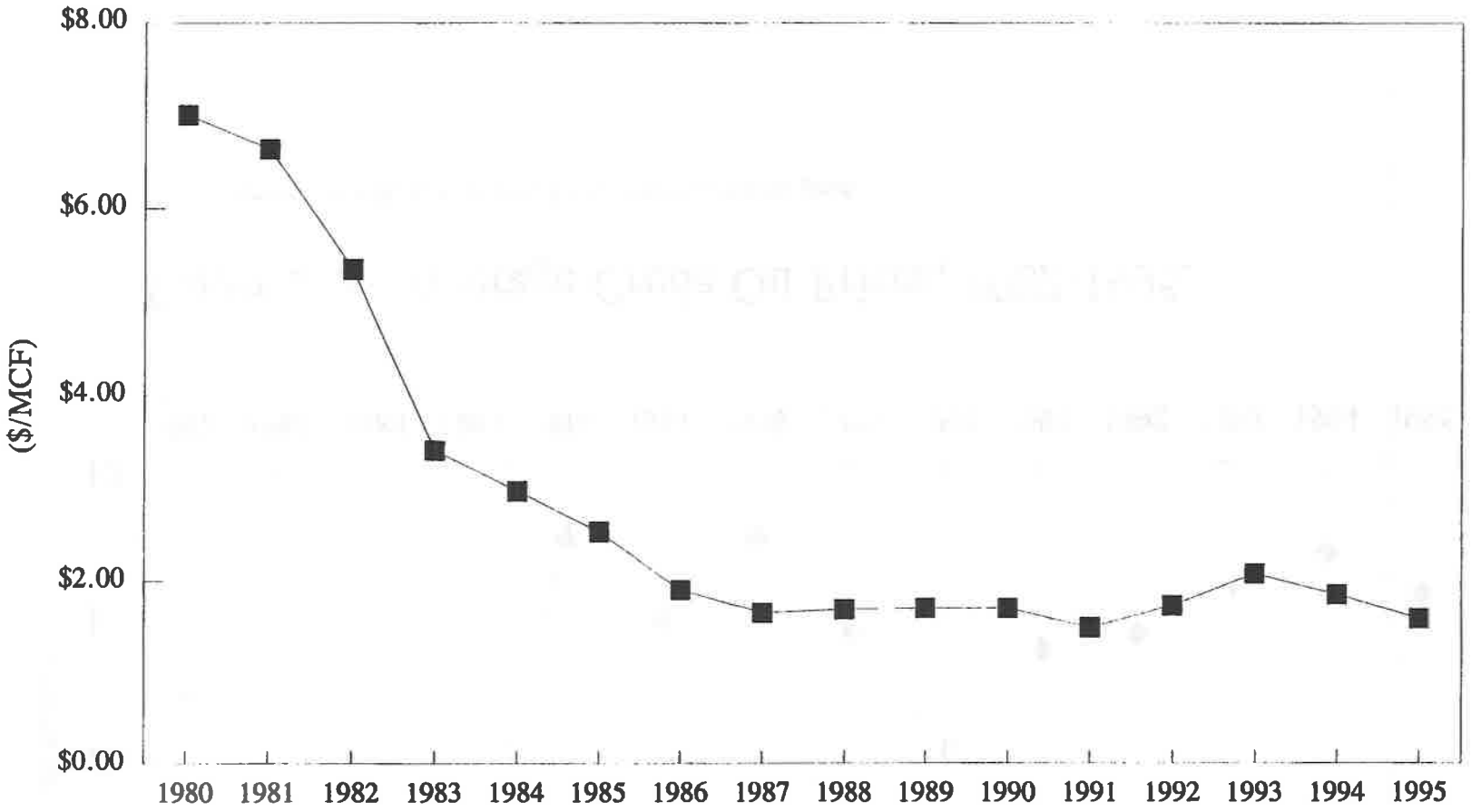


Figure 2.4. Estimated Initial Year Contract Price for Deep Well Gas.

Source: Foster Associates, Inc. 1996 estimates based on interstate gas pipeline PGA filings w/ FERC, trade press articles and EIA's Monthly Energy Review.

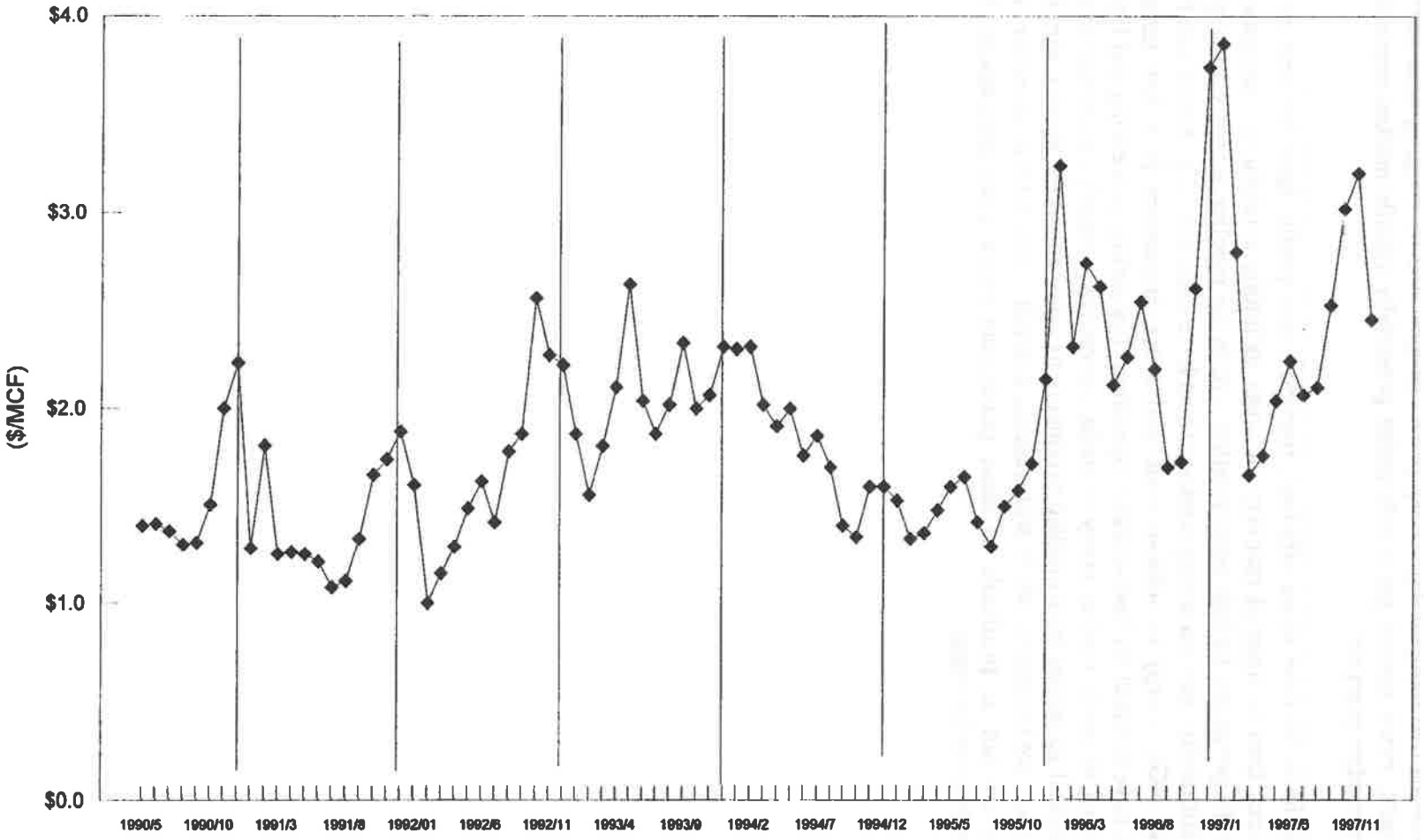


Figure 2.5. So. (Off) LA Spot Prices.

Source: USDOE, Federal Energy Regulatory Commission, 1997.

markets, have resulted in some price volatility. While some of this can be managed through contract pricing provisions that dampen day-to-day price changes, and by hedging with futures and derivatives contracts, much natural gas is sold under potentially volatile market-responsive pricing typical of commodity markets.

As U.S. gas markets have become more efficient, transportation profits have become more subject to market forces than to assured recovery of costs including a return on investment. Responses to such profit pressures include consolidation within the pipeline sector via mergers and acquisitions. Additionally, gas marketing combinations have occurred (e.g. Mobil and Pan Energy, Chevron and NGC Corp) to achieve scale and scope economies in a low margin business. Some firms have focused on "mid-stream" operations (gathering, processing and liquid extraction and marketing to apply market savvy to niche operations. Finally, exploration and development technological advances have enabled producers to bring economic energy supplies to market in a low price environment, while still making a profit. Norphlet exploration and development projects are not as profitable as lease purchasers might have anticipated, but Norphlet supplies continue to increase.

3.0 Mobile Bay Leasing History

During the period of peak outlooks for energy prices—between 1981 and 1984—Alabama leased tracts in state waters for bids totalling $800 million. MMS leased tracts in federal Mobile Bay OCS waters between 1982 and 1985 for bids totalling $562 million—$1.36 billion total. Seventeen Norphlet wells were spudded between 1981 and 1984, 13 of which became discovered gas wells—an amazing accomplishment. While changes in gas prices after 1982 and after 1986 no longer justify the extremely large bids seen in the 1981 and 1982 lease sales, nonetheless three new state Norphlet discoveries and one federal Norphlet discovery became development projects based on discoveries before year end 1984.

3.1 State Sale #1 - 1981

One important result of MOEPSI's discovery well 76-1 was the bidding interest in the state's March 1981 lease sale. Although Mobil had drilled only the single discovery well, with over 15 months to assess the implications of the discovery, industry bidders exposed $1.16 billion and the State of Alabama accepted bids on 13 tracts totalling $449.3 million plus royalty payments between 25 and 28 percent. Exxon submitted high bids of $255.9 million for seven of the 13 tracts awarded. Figure 3.1 shows the 13 tracts leased in the 1981 sale plus MOEPSI's four tracts.

Table 3.1 shows that bids were submitted on 35 tracts, but Commissioner John M. McMillan, Jr., Department of Conservation and Natural Resources and Edward Reynolds, Director of State Lands, rejected bids for 22 tracts. Asked why they accepted only a third of the bids, Mr. McMillan stated that "with nearly $450 million in the bank—more than we ever imagined—we simply rejected all the bids below about $2,000 an acre."[45] Figure 3.2 shows that the gain to Alabama from the 22 rejected tracts would have added $55 million to state coffers, about 12 percent more, bringing the total to $505 million. The largest bid rejected was Exxon's $8.6 million for tract 114; the largest bid per acre rejected was Getty's $2,222 for tract 110. (The tract was small and only would have added $2.9 million to Alabama's bonus receipts.) The sale tripled Louisiana's previous high cash bonus payday of $157.7 million.[46]

"We've struck oil," a jubilant Governor Fob James quipped after the cash bonuses were counted. Commissioner McMillan was shocked by the amounts bid. Industry observers stated before the bids were opened that maybe $250 million at risk might have been expected.[47] The $1.16 billion amount was nearly five times higher. Current Lands Division manager James Griggs described the industry's bids as "gold fever."[48] Exxon clearly bet serious money on their 1980 World Energy Outlook projections.

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[45]Personal communication, Montgomery, Alabama, February 11, 1997.

[46]OGJ, "Mobil strike helps spark Alabama tract bidding," April 13, 1981, p. 36-37.

[47]"Oil bonanza couldn't have come at better time for state," Cullman Times, April 21, 1981.

[48]Personal communication, Montgomery, Alabama, February 11, 1997.

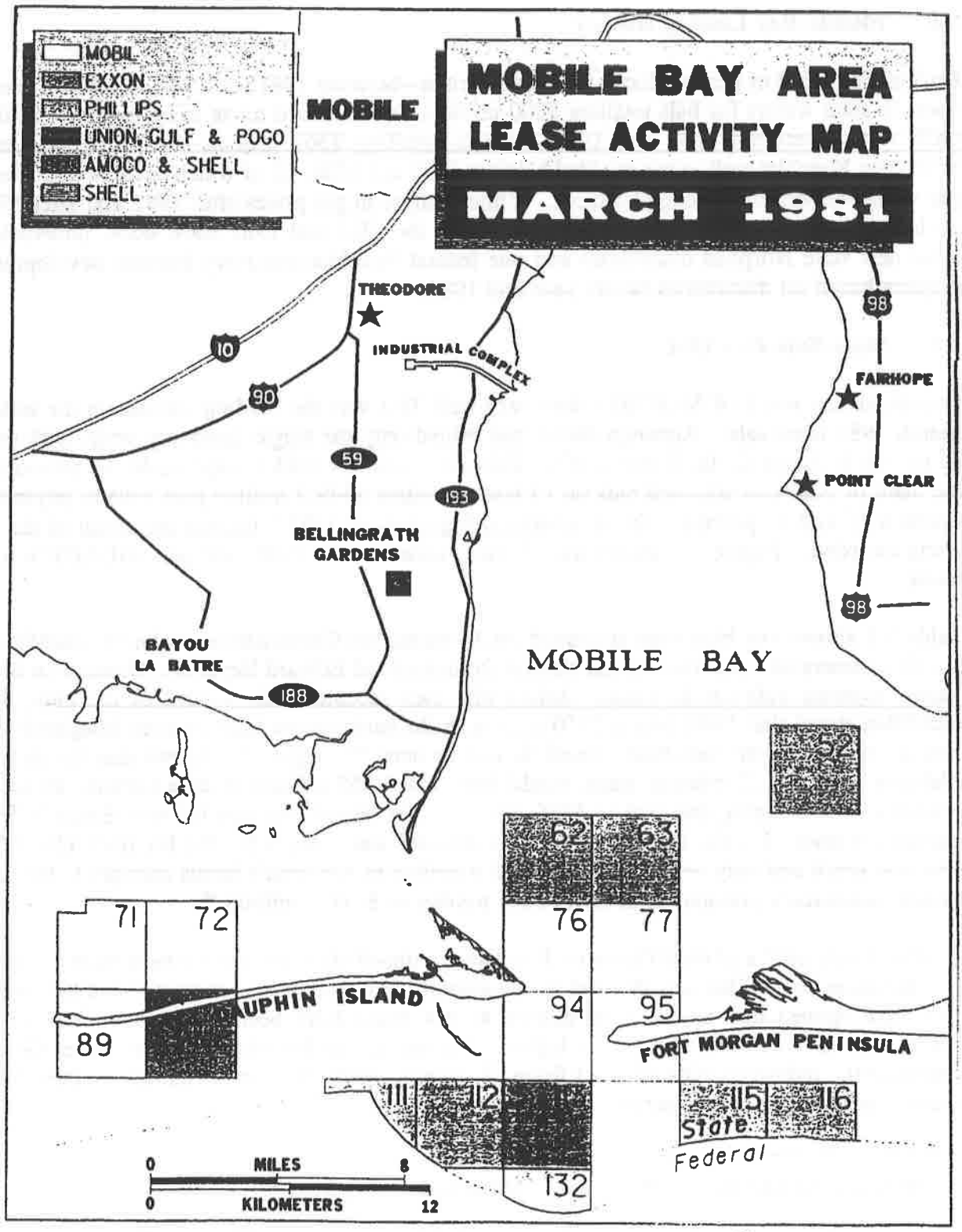


Figure 3.1. Mobile Bay Area Lease Activity Map, March 1981.

Source: MOEPSI, 1997.

Table 3.1
Bids Received for the March 1981 State Lease Sale

State Block No.	Acreage	Bidder	Total Bonus $	Bonus Per Acre $	Royalty %	Result[1]
49	5,164	Conoco, et al.	1,780,000	344.69	28.7	R
50	5,164	Conoco, et al.	780,000	151.05	28.7	R
52	5,164	Exxon	9,112,000	1,764.52	25	A
		Shell	533,000	103.22	25	R
59	4,720	Getty, Conoco, et al.	722,160	153.00	25	R
60	4,711	Getty, Conoco, et al.	720,783	153.00	25	R
62	5,164	Exxon	10,522,000	2,037.57	27	A
		Getty, Conoco, et al.	3,940,132	763.00	28.7	R
		Sunlite International, Inc.	581,040	112.52	26.1	R
63	5,164	Exxon	15,226,000	2,948.49	27	A
		First Energy Corp.	4,389,400	850.00	25	R
		Getty, Conoco, et al.	2,752,412	533.00	28.7	R
		Shell	533,000	103.21	25	R
64	5,164	Sunlite International, Inc.	581,040	112.52	26.1	R
71	4,196	MOEPSI	40,425,000	9,634.17	25	A
		SOHIO and Hunt	37,510,000	8,939.47	25	R
		SOHIO and Hunt	32,200,000	7,673.97	30.4	R
		SOHIO and Hunt	17,300,000	4,122.97	51	R
		Getty, Conoco, et al.	15,537,788	3,703.00	28.7	R
		Shell and Amoco	9,270,000	2,209.25	25	R
		Union, Gulf, Pennzoil & Total Pet.	7,381,000	1,759.06	25	R
		Chevron	2,142,000	510.49	26.2	R
		Louisiana Land & Exploration	839,200	200.00	37.5	R
72	5,164	MOEPSI	31,535,000	6,106.70	25	A
		SOHIO and Hunt	23,700,000	4,589.46	25	R
		SOHIO and Hunt	21,200,000	4,105.34	30.4	R
		Getty, Conoco, et al.	17,573,092	3,403.00	26.7	R
		Union, Gulf, Pennzoil & Total Pet.	14,676,000	2,841.98	25	R
		Shell and Amoco	9,130,000	1,768.01	25	R
		SOHIO and Hunt	7,300,000	1,413.63	51	R
		Exxon	5,104,000	988.38	25	R
		Chevron	2,142,000	414.79	26.2	R
		Louisiana Land & Exploration	1,032,800	200.00	37.5	R
73	3,690	Shell	5,674,000	1,537.67	25	R
		Union, Natomas & Pennzoil	5,130,000	1,390.24	30	R
		Exxon	5,106,000	1,383.74	25	R
		Louisiana Land & Exploration	959,400	260.00	37.5	R
88	5,112	Getty, Conoco, et al.	7,427,736	1,453.00	26.7	R
		Hunt and SOHIO	1,538,712	301.00	34	R
		Chevron	555,000	108.57	26.2	R

Table 3.1 (continued)
Bids Received for the March 1981 State Lease Sale

State Block No.	Acreage	Bidder	Total Bonus $	Bonus Per Acre $	Royalty %	Result1
89	4,811	Phillips, Hunt and SOHIO	42,712,059	8,878.00	25	A
		Phillips, Hunt and SOHIO	35,666,022	7,413.43	30.4	R
		Phillips, Hunt and SOHIO	20,277,024	4,214.72	51	R
		Union, Gulf, Pogo, Natomas, Pennzoil and Total Pet.	9,632,000	2,002.08	25	R
		Getty, Conoco, et al.	6,749,833	1,403.00	26.7	R
		MOEPSI	5,145,000	1,069.42	25	R
		Shell and Amoco	1,180,000	245.27	25	R
90	4,612	Union, Gulf, Pogo, Natomas, Pennzoil and Total Pet.	21,879,000	4,743.93	25	A
		SOHIO and Hunt	13,353,000	2,895.27	25	R
		SOHIO and Hunt	11,317,848	2,454.00	30.4	R
		Getty, Conoco, et al.	9,652,916	2,093.00	26.7	R
		MOEPSI	5,235,000	1,135.08	25	R
		SOHIO and Hunt	3,613,734	783.55	51	R
		Shell and Amoco	570,000	123.59	25	R
91	5,010	Pennzoil and Natomas	5,105,000	1,018.96	30	R
92	5,164	Natomas	3,000,000	580.94	35	R
		Hunt and SOHIO	2,210,192	428.00	34	R
		Conoco, et al.	1,337,000	258.91	28.7	R
		Shell	887,000	171.77	25	R
93	4,823	Conoco, et al.	3,713,000	769.85	28.7	R
		MOEPSI	1,010,000	209.41	25	R
96	3,834	First Energy Corp.	5,751,000	1,500.00	25	R
		Getty, Conoco, et al.	3,768,000	982.78	25	R
		Getty, Conoco, et al.	975,400	254.41	33.7	R
		Hunt and SOHIO	475,416	124.00	34	R
97	3,217	Hunt and SOHIO	2,100,701	653.00	34	R
98	3,697	Hunt and SOHIO	2,101,745	568.50	34	R
		Natomas	897,271	242.70	25	R
99	2,806	Natomas	684,355	243.89	25	R
		Hunt and SOHIO	352,153	125.50	34	R
100	3,479	Natomas	357,711	102.82	25	R
101	4,438	Natomas	456,315	102.82	25	R
103	5,062	Conoco, et al.	837,000	165.35	28.7	R
104	3,846	Conoco, et al.	647,000	168.23	28.7	R
110	1,295	Getty, Conoco, et al.	2,878,000	2,222.39	25	R
		Chevron	2,620,000	2,023.17	26.2	R
		Hunt and SOHIO	450,660	348.00	34	R

Table 3.1 (continued)
Bids Received for the March 1981 State Lease Sale

State Block No.	Acreage	Bidder	Total Bonus $	Bonus Per Acre $	Royalty %	Result1
111	1,687	Exxon	53,168,000	31,516.30	28	A
		MOEPSI	22,225,000	13,174.27	25	R
		Shell and Amoco	21,340,000	12,649.67	25	R
		Getty, Conoco, et al.	12,078,000	7,159.45	28.7	R
		Pennzoil and Natomas	10,133,000	6,006.52	25	R
		Chevron	8,560,000	5,074.10	26.2	R
		Chevron	3,725,000	2,208.06	35	R
		Hunt and SOHIO	655,400	388.50	34	R
112	4,932	Exxon	137,254,000	27,829.28	28	A
		Getty, Conoco, et al.	37,067,000	7,515.61	26.7	R
		Getty, Conoco, et al.	25,137,000	5,096.71	33.7	R
		Shell and Amoco	10,580,000	2,145.17	25	R
		MOEPSI	5,815,000	1,179.03	25	R
		Pennzoil and Natomas	5,077,000	1,029.40	25	R
		Chevron	2,112,000	428.22	26.2	R
		Hunt and SOHIO	759,528	154.00	34	R
113	5,123	Shell and Amoco	34,370,000	6,708.96	25	A
		Exxon	26,154,000	5,105.21	27	R
		Getty, Conoco, et al.	12,157,000	2,373.02	25	R
		Getty, Conoco, et al.	9,243,000	1,804.22	33.7	R
		Union, Natomas & Pennzoil	9,177,000	1,791.33	25	R
		Hunt and SOHIO	1,308,927	255.50	34	R
114	4,782	Exxon	8,608,000	1,800.08	25	R
		Getty, Conoco, et al.	7,273,000	1,520.91	28.7	R
		Union, Pennzoil & Total Pet.	4,171,000	872.23	25	R
		Hunt and SOHIO	755,556	158.00	34	R
115	3,416	Exxon	12,308,000	3,603.04	27	A
		Conoco, et al.	7,129,000	2,086.94	28.7	R
		Union	1,817,000	531.91	25	R
		First Energy Corp.	1,708,000	500.00	25	R
		Hunt and SOHIO	1,310,036	383.50	34	R
116	3,254	Exxon	18,323,000	5,602.95	27	A
		Conoco, et al.	12,840,000	3,945.91	28.7	R
		Hunt and SOHIO	1,630,254	501.00	34	R
117	3,479	Hunt and SOHIO	1,612,518	463.50	34	R
		Exxon	1,104,000	317.33	25	R
118	3,429	Exxon	1,102,000	321.38	25	R
		Hunt and SOHIO	353,188	103.00	34	R
132	2,367	Shell	22,435,000	9,478.24	25	A
Total Industry Exposure			1,156,735,457			
Total Accepted			449,269,059			

1 R - rejected; A - accepted

Source: Alabama Dept. of Conservation and Natural Resources, 1997;
Alabama Oil and Gas Board, 1986.

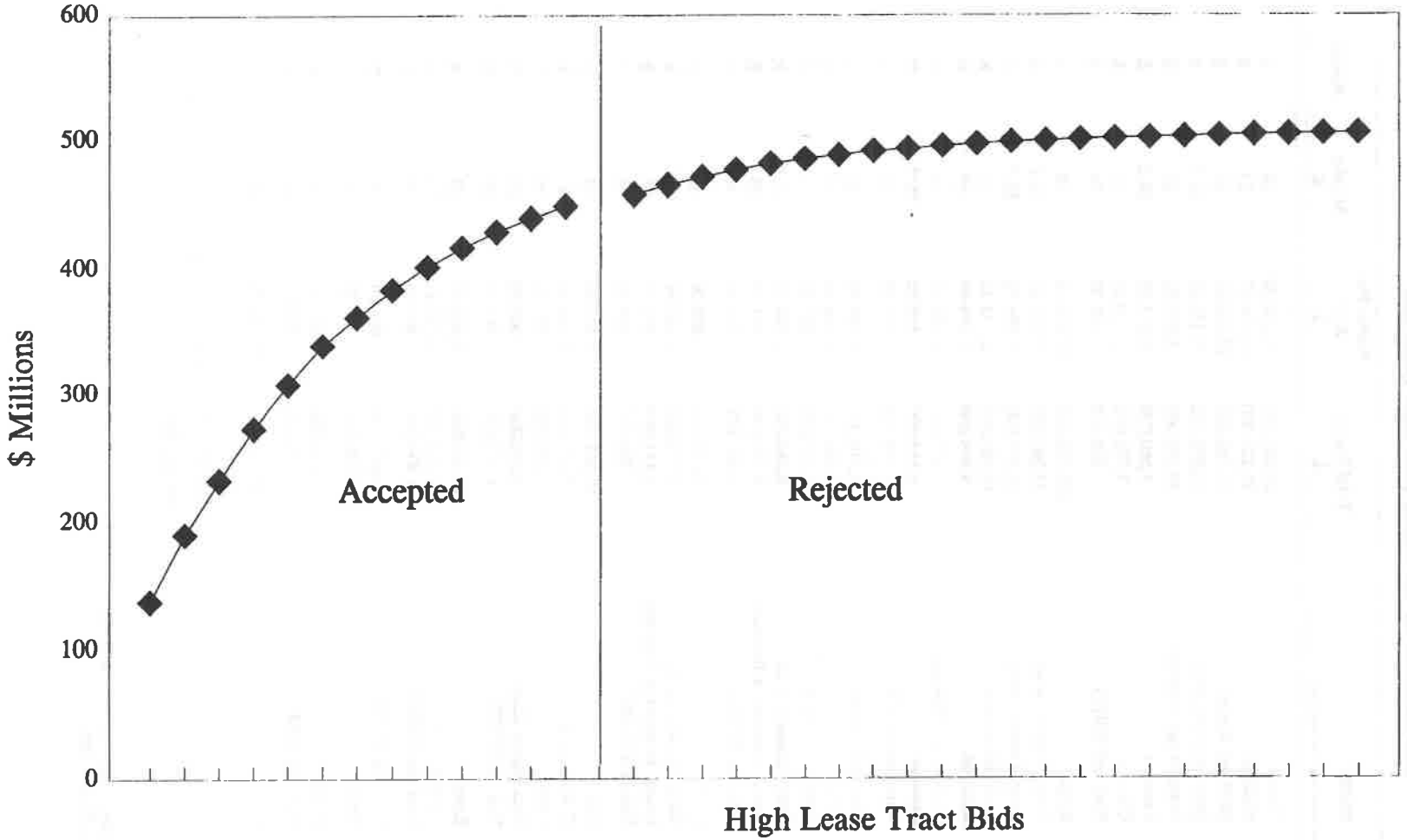


Figure 3.2. State of Alabama Cumulative Lease Bids, 1981.

Source: Table 3.1.

The bonanza couldn't have come at a better time because interest rates were at record highs. The money was invested in 90-day time deposits earning 13.9 to 14.4 percent while the governor and state legislators decided what to do with the bonanza.

Exxon, which exposed $303 million in 13 bids, paid the highest two bonuses to lease tracts 111 and 112 for $53.2 million and $137.3 million, leaving a total of $131.2 million "on the table" for tracts 111 and 112. Exxon described their exuberance as simply "reflecting their interest in the area" and wouldn't discuss their high bids with the Oil and Gas Journal's reporter.[49] MOEPSI, holding the discovery well just northeast of these two tracts, offered only $28 million for them, bidding only $5.8 million for tract 112 compared to Exxon's $137.3 million. Exxon substantially overbid to win tracts 62 and 63 as well, leaving $17.4 million "on the table" for those tracts. MOEPSI, which held the leases for tracts 76 and 77 immediately south of tracts 62 and 63, didn't even bid on them. MOEPSI's interest lay to the west; they bid their highest amounts, $71.9 million, to win tracts 71 and 72. Tract 72 attracted the highest number of bidders—eight—in the sale.

Exxon acquired leases for tracts 115 and 116 for $30.5 million. These winning bids were in line with the losers' bids. Shell was the other big winner in the sale, acquiring leases on tracts 113 and 132 for $57.1 million—overbidding Exxon by 35 percent on tract 113, and submitting the only bid on 132.

To jump ahead of the story: Exxon and Shell successfully bought their way into the Norphlet game. Exxon's tracts subsequently became three Norphlet fields—Bon Secour Bay, North Central Gulf and Northwest Gulf. Shell's acreage, between Exxon's Gulf of Mexico fields, became the Fairway field.

3.2 OCS Lease Sale 67 - 1982

The following February 1982 MMS leased its first acreage contiguous to state waters of Coastal Alabama as part of OCS Sale 67, which also included tracts off Texas and Louisiana in deep water. MOEPSI, bidding with Conoco and Getty (now Texaco), was the biggest winner in Coastal Alabama OCS, leasing tracts 778, 779, 822, 823, and 824 for $100.2 million to beat Exxon which bid $76.5 million for the tracts. The tracts adjoin Exxon's previous high bid state tracts 111 and 112. Exxon, having overbid $131 million for tracts 111 and 112 in the 1981 state sale, now was $24 million short of controlling the highest priced leases acquired in the OCS sale—and all the acreage in the neighborhood of their high bid state tracts 111 and 112.

A group comprised of Chevron, Gulf, Pennzoil, and Union acquired tracts 861 and 862 for $41.2 million. Groups led by Shell and ARCO were the other major winning bidders picking up tracts 908 and 909 for $52.5 million. MMS accepted a total of $218.7 winning bids for 17 Alabama OCS tracts, shown on Table 3.2. The 1981 state sale and 1982 federal sale introduced all the subsequent Norphlet operators to Coastal Alabama—MOEPSI, Exxon, Shell, Chevron, BP and Unocal.

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[49]OGJ, "Mobil strike helps spark Alabama tract bidding," April 13, 1981, p. 36-37.

Table 3.2
Leased Blocks in the Federal OCS Water Near Alabama's State Coastal Waters through 1985

Offshore Block no.1	Acres	Original Lessee	OCS Lease Sale no.	Total Bonus $	Bonus per acre $
M 779, 823, 824	5,585	MOEPSI, Conoco and Getty	67	55,119,000	9,856
M 778, 822	5,324	MOEPSI, Conoco and Getty	67	45,117,000	8,471
M 909	5,760	Shell, Florida Exploration, Fluor Oil & Gas and Crown Central	67	28,277,000	4,909
M 908	5,760	ARCO, Texas Gulf, Murphy, and ODECO	67	24,197,760	4,201
M 861	5,198	Gulf, Union, Pennzoil and Chevron	67	23,616,000	4,543
M 862	5,618	Chevron, Gulf, Pennzoil and Union	67	17,616,000	3,135
M 867	5,760	Exxon	67	6,747,000	1,171
M 870	5,618	Placid	67	5,084,643	905
M 864	5,760	Tenneco	67	4,880,000	847
M 821	4,028	SOHIO	67	3,000,000	745
M 906	5,760	Chevron	67	2,110,000	366
M 866	5,760	Exxon	67	1,211,000	210
M 868	5,687	Exxon	67	1,014,000	178
M 827	3,174	Exxon	67	718,000	226
	Subtotal 1982			***218,707,403***	
M 905	5,760	Union	69 (Part II)	881,900	153
	Subtotal			***881,900***	
M 863	5,760	Tenneco, ARCO, Murphy, ODECO and Elf Aquitaine	72	7,930,000	1,377
M 952	5,760	ODECO, Koch and Santa Fe Energy	72	5,667,000	984
M 959	5,760	ARCO and Elf Aquitaine	72	5,553,000	964
M 955	5,760	ODECO, Koch and Santa Fe Energy	72	4,778,000	830
M 953	5,760	ODECO, Koch and Santa Fe Energy	72	3,642,000	632
M 826	1,430	Placid	72	3,563,560	2,492
M 961	5,760	Chevron and Union	72	2,572,000	447
M 915	5,760	Chevron and Union	72	1,300,000	226
M 958	5,760	Chevron and Union	72	1,300,000	226
M 916	5,760	Chevron and Union	72	1,300,000	226
M 917	5,760	Chevron and Union	72	1,227,000	213
M 960	5,760	ARCO and Elf Aquitaine	72	1,053,000	183
M 904	5,760	Union	72	900,000	156
	Subtotal 1983			***40,785,560***	
P 881	5,760	Conoco	79	957,000	166
P 970	5,760	Conoco and Getty	79	1,214,000	211
P 969	5,760	Conoco and Getty	79	1,515,000	263
	Subtotal			***3,686,000***	
M 869	4,503	Getty, Conoco and Pennzoil	81	32,078,000	7,123
M 913	5,760	Exxon	81	18,887,000	3,279
M 828	3,090	Exxon	81	10,302,000	3,334
M 912	5,760	Exxon	81	9,090,000	1,578
M 962	5,760	Getty, Conoco and Pennzoil	81	6,818,000	1,184
M 872	5,760	Getty, Conoco and Pennzoil	81	3,518,000	611
M 1005	5,760	Getty, Conoco and Pennzoil	81	3,518,000	611
M 1006	5,760	Getty, Conoco and Pennzoil	81	3,037,000	527
M 873	5,760	Getty, Conoco and Pennzoil	81	2,518,000	437
M 829	2,775	Exxon	81	2,424,000	873
M 918	5,760	Getty	81	1,616,600	281
M 865	5,760	Union	81	1,567,000	272
M 830	2,909	Getty, Conoco and Pennzoil	81	1,518,000	522

Table 3.2 (continued)
Leased Blocks in the Federal OCS Water Near Alabama's State Coastal Waters through 1985

Offshore Block no.1	Acres	Original Lessee	OCS Lease Sale no.	Total Bonus $	Bonus per acre ¢
M 860	5,760	Union, Chevron, Gulf and Pennzoil	81	1,351,000	235
M 996	5,760	Conoco and Getty	81	1,108,000	192
M 1002	5,760	Union	81	989,000	172
M 1003	5,760	Union	81	989,000	172
M 1004	5,760	ARCO and elf Aquitaine	81	920,000	160
M 995	5,760	Conoco and Getty	81	918,000	159
M 911	5,760	Exxon	81	909,000	158
	Subtotal 1984			*104,075,600*	
P 971	5,760	ODECO, Murphy, Petrofina, Felmont and Minatome	94	1,020,000	177
P 925	5,760	ODECO, Murphy, Petrofina, Felmont and Minatome	94	1,020,000	177
P 837G	2,828	Union	94	454,000	161
	Subtotal			*2,494,000*	
M991	5,740	Conoco, Pennzoil and Amoco	98	51,096,000	8,188
M 999	5,760	SOHIO, Petrofina and Monsanto	98	27,137,000	4,711
M 992	5,760	Conoco, Pennzoil and Amoco	98	20,325,000	3,529
M 1000	5,760	SOHIO, Petrofina and Monsanto	98	12,625,000	2,192
M 956	5,760	Conoco and Amoco	98	11,767,800	2,043
M 950	5,760	Union	98	11,260,000	1,955
M 874	5,760	Union	98	9,750,000	1,693
M 871	5,760	Conoco, Union, Pennzoil and Amoco	98	7,657,000	1,329
M 948	5,760	Union	98	5,137,000	892
M 1001	5,760	SOHIO, Petrofina and Monsanto	98	5,127,000	890
M 914	5,760	Santa Fe and HNG	98	5,076,000	881
M 994	5,760	SOHIO, Petrofina and Monsanto	98	4,256,000	739
M 998	5,760	SOHIO, Petrofina and Monsanto	98	3,712,000	644
M 951	5,760	Union and Chevron	98	3,660,000	635
M 993	5,760	SOHIO, Petrofina and Monsanto	98	3,471,000	603
M 949	5,760	Union	98	2,875,000	499
M 910	5,760	Exxon	98	2,220,000	385
M 997	5,760	Exxon	98	1,614,000	280
M 957	5,760	Exxon	98	1,510,000	262
M 907	5,760	Tenneco, ARCO, Elf Aquitaine, Murphy and ODECO	98	1,459,000	253
	Subtotal 1985			*191,734,800*	
TOTAL OF ALL LEASES				*562,365,263*	

1 M - Mobile Area, P - Pensacola Area (western area only).

All Federal blocks have a primary lease term of 5 years, an annual rental of $3.00 per acre, and a royalty payment of 16.67 percent.

Source: U.S. Department of the Interior, Minerals Management Service, 1998;
Alabama Oil and Gas Board, 1986.

3.3 State Lease Sale #2 - 1982 and OCS Sale 72 - 1983

The state had a second lease sale in September 1982. Table 3.3 shows that nine bids were received for six tracts; only $12.5 million was exposed and only one tract, 110, north of federal tract 822, was leased to MOEPSI's group for $3.1 million with a 25 percent royalty. Shell bid $1.7 million for tract 114, well under Exxon's rejected bid in 1981, and the state rejected the offer for the second time. MOEPSI's winning bid for tract 110 was the only bid over $2,000 per acre.

MMS had a second small sale in May 1983 at which the highest bid tract was $7.9 million for tract 863. Tenneco and a group comprised of ARCO, Murphy, ODECO and Elf leased this tract adjoining Tenneco's tract 864 that was leased the year before. Union and Chevron acquired tracts 904, 916 and 961 for bids near $1.0 million that subsequently became Norphlet discoveries. The highest bid per acre, $2,492, came for tract 826, adjoining Exxon's tracts 114 and 115, west of Exxon's 827. Total accepted bids amounted to $40.8 million as shown on Table 3.2.

A number of tracts were bought for their Miocene prospects. Bids in the range of $5.0 million were received for tracts 952, 955, and 959, which became producing Miocene properties.

3.4 State Lease Sale #3 and OCS Sale 81 - 1984

Two important lease sales in 1984 added to the Alabama acreage available for exploration: OCS Lease Sale 81, April 1984; and state Lease Sale #3, August 1984. Table 3.2 shows that Sale 81 leased 20 federal tracts in Coastal Alabama for $104.1 million. The highest bid, $32.1 million, was paid for tract 869, just south of Shell's state tract 132. Getty (now Texaco), Conoco and Pennzoil acquired this tract. Getty, bidding alone and with this group, acquired ten leases to become the most active participant. Exxon was the second most active, winning the second highest bid tract, 913, for $18.9 million, and adding to its acreage south of state tracts 115 and 116 by acquiring tracts 828 and 829 for $12.7 million. Exxon acquired a total of five tracts. MOEPSI acquired none.

State Lease Sale #3 exposed $493.2 million and awarded 19 state tracts for $347.5 million plus royalties of between 16.67 and 20 percent, as shown on Table 3.4. Exxon dominated the sale, with high bids of $289.8 million accepted by the state for 14 tracts. Exxon's highest two bids were $53 million for tract 114 and $46 million for tract 78. Exxon acquired all the state acreage surrounding their 1981 leases. The state, which had rejected an $8.4 million bid from Exxon in 1981 for tract 114, clearly benefitted by its strategy as tract 114 received the highest bid in the 1984 sale. In fact, the state bettered its financial position by $247.6 million on the bids for tracts it rejected in 1981 and 1982, as shown on Table 3.5. Exxon contributed $238.8 million of the increase in bids.

Mobil acquired no new acreage in the sale, bidding on only five tracts and bidding an average of 6.4 percent of Exxon's winning bids for tracts 78, 91, 92, 93, and 96 as shown on Table 3.6.

Table 3.3
Bids Received for the September 1982 State Lease Sale

State Block No.	Acreage	Bidder	Total Bonus $	Bonus Per Acre $	Royalty %	Result[1]
91	4,991	Pennzoil	1,500,000	300.54	25	R
92	5,164	Shell	1,033,000	200.04	25	R
93	4,723	Exxon	1,408,000	298.12	25	R
		Shell	1,047,000	221.68	25	R
109	2,329	SOHIO	852,577	366.07	25	R
110	1,295	MOEPSI, Getty & Concoco	3,117,000	2,406.95	25	A
		Exxon	1,206,000	931.27	25	R
		Chevron	611,000	471.81	25	R
114	4,782	Shell	1,713,000	358.22	25	R
Total Industry Exposure			12,487,577			

[1] R - rejected; A - accepted

Source: Alabama Dept. of Conservation and Natural Resources, 1997;
Alabama Oil and Gas Board, 1986

Table 3.4
Bids Received for the August 1984 State Lease Sale

State Block No.	Acreage	Bidder	Total Bonus $	Bonus Per Acre $	Royalty[1] %	Result[2]
13	4,650	Exxon	1,412,000	303.66	16.67	R
14	5,165	Exxon	2,723,000	527.20	16.67	A
40	5,040	Exxon	1,212,000	240.48	16.67	R
50	5,165	Exxon	1,518,000	293.90	16.67	R
51	5,165	Exxon	1,413,000	273.57	16.67	R
59	4,665	Exxon	4,244,000	909.75	20	A
		Conoco and Getty	1,212,000	259.80	20	R
64	5,165	Exxon	32,828,000	6,355.86	20	A
		Conoco and Getty	1,414,000	273.77	20	R
73	4,795	Exxon	12,624,000	2,632.74	20	A
		Pennzoil & Total Pet.	12,000,014	2,502.61	20	R
		ARCO	6,095,000	1,271.16	20	R
		Tenneco	2,496,000	520.54	20	R
		Conoco and Getty	1,111,000	231.70	20	R
78	4,980	Exxon	45,972,000	9,231.33	20	A
		Conoco and Getty	3,416,000	685.94	20	R
		Shell	1,674,000	336.14	20	R
		Amoco	1,215,120	244.00	20	R
		MOEPSI	1,027,500	206.33	20	R
79	4,438	Exxon	1,313,000	295.85	16.67	R
		Amoco	1,127,252	254.00	16.67	R
88	5,131	SOHIO	7,610,000	1,483.14	16.67	A
		Conoco and Getty	3,213,000	626.19	16.67	R
91	5,012	Exxon	16,540,000	3,300.08	20	A
		Union and Pennzoil	7,360,000	1,468.48	20	R
		MOEPSI, Conoco, Getty and AGIP	2,127,000	424.38	20	R
92	5,165	Exxon	39,672,000	424.38	20	A
		Union, Pennzoil & Pogo	15,350,000	7,680.93	20	R
		MOEPSI, Conoco, Getty and AGIP	5,203,300	2,971.93	20	R
93	4,831	Exxon	39,364,000	8,148.21	20	A
		Union, Pennzoil & Pogo	8,350,000	1,728.41	20	R
		MOEPSI, Conoco, Getty and AGIP	2,027,000	419.58	20	R
					20	R
		SOHIO	1,259,000	260.61	20	R
		Shell	989,000	204.72	20	R
96	4,093	Exxon	43,738,000	10,686.05	20	A
		Union	5,889,000	1,438.80	20	R
		Conoco and Getty	2,317,000	566.08	20	R
		Shell	1,674,000	408.99	20	R
		MOEPSI	1,527,500	373.20	20	R

Table 3.4 (Continued)
Bids Received for the August 1984 State Lease Sale

State Block No.	Acreage	Bidder	Total Bonus $	Bonus Per Acre $	Royalty[1] %	Result[2]
97	3,395	Exxon	14,634,000	4,310.46	16.67	A
98	3,652	Exxon	6,664,000	1,824.75	16.67	A
99	2,770	Exxon	608,000	219.49	16.67	R
109	2,511	SOHIO	1,100,000	438.07	16.67	A
		Getty	555,200	221.11	16.67	R
114	4,807	Exxon and Louisiana Hunt	52,984,000	11,022.26	16.67	A
		Union, Pennzoil & Pogo	15,370,000	3,197.42	16.67	R
		Shell and Amoco	11,326,000	2,356.15	16.67	R
		Conoco and Getty	5,419,000	1,127.31	16.67	R
117	3,541	Exxon	14,428,000	4,074.56	16.67	A
		Union	3,367,000	950.86	16.67	R
		Amoco	1,157,907	327.00	16.67	R
		Conoco and Getty	1,121,000	316.58	16.67	R
118	3,669	Union and Pogo	9,310,000	2,537.48	16.67	A
		Exxon	7,572,000	2,063.78	16.67	R
		Amoco	1,185,087	323.00	16.67	R
		Conoco, Getty and Pennzoil	1,127,000	307.17	16.67	R
119	2,945	Exxon	1,820,000	618.00	16.67	A
131/133	1,535	Exxon and Louisiana Hunt	1,228,000	800.00	16.67	A
Total Accepted Bids			347,483,000			
Total Industry Exposure			493,232,880			

[1]Escalates to 25 percent on payout.
[2]R - rejected; A - accepted

Source: Alabama Dept. of Conservation and Natural Resources, 1997;
Alabama Oil and Gas Board, 1986

Table 3.5
1981 & 1982 Rejected State of Alabama Bids Compared to 1984 Bids

State Block No.	1981-1982 Acreage	1981-1982 Bidder	1981-1982 Total Bonus	1981-1982 Bonus per Acre	1981-1982 Royalty %	1981-1982 Result	1984 Acreage	1984 Bidder	1984 Total Bonus	1984 Bonus per Acre	1984 Royalty %	1984 Result	Gain to State
114	4,782	Exxon	8,608,000	1,800	25	R	4,807	Exxon and Louisiana Hunt	52,984,000	11,022	16.67	A	44,376,000
92	5,164	Natomas	3,000,000	581	25	R	5,164	Exxon	39,672,000	7,680	16.67	A	36,572,000
93	4,823	Conoco, et al.	3,713,000	770	28.7	R	4,831	Exxon	39,364,000	8,148	20	A	35,551,000
64	5,164	Sunlite International, Inc.	581,040	113	26.1	R	5,165	Exxon	32,828,000	6,356	20	A	32,246,960
91	5,010	Pennzoil and Natomas	5,105,000	1,019	30	R	5,012	Exxon	16,540,000	3,300	20	A	11,435,000
97	3,217	Hunt and SOHIO	2,100,701	653	34	R	3,395	Exxon	14,634,000	4,310	16.67	A	12,533,299
117	3,479	Hunt and SOHIO	1,612,518	464	34	R	3,541	Exxon	14,428,000	4,075	16.67	A	12,815,482
73	3,690	Shell	5,674,000	1,538	25	R	4,795	Exxon	12,624,000	2,633	20	A	6,950,000
118	3,429	Exxon	1,102,000	321	25	R	3,669	Union and Pogo	9,310,000	2,537	16.67	A	8,208,000
88	5,112	Getty, Conoco, et al.	7,427,736	1,453	26.7	R	5,131	SOHIO	7,610,000	1,483	16.67	A	182,264
98	3,697	Hunt and SOHIO	2,101,745	569	34	R	3,652	Exxon	6,664,000	1,825	16.67	A	4,562,255
59	4,720	Getty, Conoco, et al.	722,160	153	25	R	4,665	Exxon	4,244,000	910	20	A	3,521,840
110	1,295	Getty, Conoco, et al.	2,878,000	2,222	25	R	1,295	MOEPSI, Getty & Conoco[1]	3,117,000	2,407	25	A	239,000
109	2,329	Sohio	852,577	366	25	R	2,511	Sohio	1,100,000	438	16.67	A	247,423
96	4,093	First Energy Corp.	5,751,000	1,500	25	R	4,093	Exxon	43,738,000	10,606	20	A	37,987,000
								Exxon Subtotal	*277,720,000*				*238,750,836*
		Total	51,229,477						298,857,000				247,627,523

Source: Alabama Dept. of Conservation and Natural Resources, 1997;
Alabama Oil and Gas Board, 1986

Exxon Exploration VP W. J. Wood was quoted in OGJ, "[Exxon] bid aggressively . . . because of its belief that the gas market will improve."[50] Seemingly, Mobil and Exxon had different views of the gas market, if not the geology. Tract 78 became part of Bon Secour Bay Field. The 1986 re-ordering of world energy prices cancelled any beliefs about improved market conditions.

Table 3.6
Comparison of 1984 Bids in State Sale #3
($ Million)

Tract	Exxon	Mobil
78	46.0	1.0
91	16.5	2.1
92	39.7	5.2
93	39.4	2.0
96	43.7	1.5
Total	185.3	11.8
Mobil % of Exxon		6.4%

Source: Table 3.4

3.5 OCS Lease Sale 98 - 1985

Disappointing March and April 1985 exploration results in federal tracts 826, 909, and 864 did not dampen enthusiasm for MMS Lease Sale 98, May 22, 1985. Table 3.2 shows that 20 tracts were acquired for $191.7 million in the Mobile OCS during this area wide sale in the Central Planning Region of the Gulf. The winning bids totalled nearly 90 percent more than the industry paid for 20 Mobile OCS tracts in the 1984 federal sale. The Conoco group acquired the highest bid tract of the entire sale, 991, which is in the Norphlet play, south of Mississippi. The highest bid three tracts of the entire sale, 991, 999, and 992 were Norphlet tracts. OGJ reported that Shell was the top bidder in the area wide sale, but Shell positioned itself in the deep water tracts of the Gulf and the Main Pass at the mouth of the Mississippi. Shell bid low on nine Mobile tracts and acquired none. Shell's only holdings in the Mobile area remained tracts 113 and 132. From an early position in Mobile Bay gas exploration, Shell shifted its focus to the deep water Gulf.[51]

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[50]OGJ, "Exxon leads spending in Mobile Bay lease sale," August 27, 1984, p. 30.

[51]Shell's deepwater discoveries to-date—Auger, Brutus, Bullwinkle, Cognac, Mars, Mensa, Popeye, Ram-Powell, Rocky, Tahoe, Tahoe II, and Ursa—confirm that Shell shifted its attention from the Norphlet to another frontier play that required exploitation of specialized, but different, technology from

Table 3.2 shows that Conoco, Amoco, and Sohio were the largest players in Norphlet tracts of Sale 98. Although Exxon only acquired three tracts, Exxon remained the largest lessee in Coastal Alabama. MOEPSI did not bid for new acreage in the sale. Chevron and Unocal added to their holdings on the eastern and western edges of the Alabama OCS Norphlet play.

3.6 State and Federal Coastal Alabama Sales: After 1985

Several small to moderate Coastal Alabama state and federal sales have occurred since 1985. Results are shown on Tables 3.7A and 3.7B. The state captured $61.0 million more, mostly from MOEPSI for the lease of tract 75, which was subsequently drilled and unitized as the Aloe Bay Field. This brought the state's bonuses for lease sales to $861 million.

A substantial amount of federal real estate in the Mobile Bay OCS changed hands after 1985 for only $13.3 million, with Chevron and Union acquiring the bulk of it. This brought federal bonus collections to $576 million from Coastal Alabama tracts.

Chevron leased federal tracts 819 and 820 for very low bids in 1988 when the "gas bubble" and low prices plagued the gas industry. Norphlet gas has been discovered under both 819 and 820; production ramped up in 1997. Conoco's $51 million tract 991 from Lease Sale 98 was explored by Conoco, as will be discussed in the next section, and turned back to MMS. Chevron acquired it in Lease Sale 152 for $2.6 million.

3.7 Industry Leases: 1997

By the end of 1997, industry had invested a total of $1.4 billion in Coastal Alabama as shown on Table 3.8 by company. Exxon led the industry with $573 million for 147,616 acres, including the highest price tract of all sales, tract 112 at $137.3 million. Union and Chevron were the next largest individual lessees, holding between them more acreage than Exxon. Conoco and Sohio appear on the table as the fourth and fifth largest lessees, but their leases have mostly expired or otherwise changed hands.

Union and Chevron lead the Norphlet players in the lowest average price per acre under lease—$757 and $774. Getting a later start, they began leasing Norphlet tracts after gas prices had declined, spending at most $23.6 million for tract 861, which proved to be a large Norphlet discovery. Union and Chevron spent twenty cents per acre for each dollar Exxon spent.

Figure 3.3 shows the leased positions as of 1995.

3.8 Alabama's Stake in the Bonus and Royalty Payments

The bonus payments collected in conjunction with offshore lease sales are a significant source of revenue to the State of Alabama. Bonus payments from the mid-1950s to 1979 came to just

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the Norphlet. See USDOI, MMS (1997), "Deepwater in the Gulf of Mexico: America's New Frontier," OCS Report MMS 97-0004, New Orleans, February 1997.

Table 3.7A
Leased Blocks in State of Alabama Waters, 1988 - 1997

Offshore Block no.	Lease Date	Original Lessee	Total Bonus $	Bonus per acre $	Rental per acre	Royalty
57	02/23/88	OGI[1]	646,000	500.29	2.50	20%
71	02/23/88	OGI[1]	646,000	500.29	2.50	20%
72	02/23/88	Callon[1]	225,000	174.25	2.50	20%
73	02/23/88	Callon[1]	1,536,000	1,251.20	2.50	20%
73	02/23/88	Callon[1]	265,000	205.23	2.50	20%
73	02/23/88	Callon[1]	988,000	1,003.22	2.50	20%
90	02/23/88	OEDC[1]	134,000	127.74	2.50	20%
90	02/23/88	Northern Michigan Expl. Co.	134,290	104.00	2.50	20%
91	02/23/88	ARCO	356,000	312.42	2.50	20%
91	02/23/88	OEDC[1]	165,000	127.91	2.50	20%
73	07/19/88	Shell/Amoco	3,873,000	807.72	5.00	16.67%
74	07/19/88	Shell/Amoco	4,373,000	1,138.21	5.00	20%
75	07/19/88	MOEPSI	25,178,000	10,189.40	5.00	25%
91	07/19/88	Shell/Amoco	843,000	168.20	5.00	16.67%
92	07/19/88	Shell/Amoco	8,377,000	1,621.88	5.00	16.67%
93	07/19/88	Shell/Amoco	10,388,000	2,150.28	5.00	16.67%
	Subtotal 1988		***58,127,290***			
60	12/29/93	MOEPSI	1,322,208	535.09		
61	12/29/93	MOEPSI	1,564,086	632.98		
110	12/29/93	BSFI Western E&P Inc.	12,950	5.24		
	Subtotal 1993		***2,900,417***			
71	12/10/97	MOEPSI	1,317,075	255.00		
88	12/10/97	MOEPSI	1,949,780	380.00		
89	12/10/97	MOEPSI	1,902,285	405.00		
90	12/10/97	MOEPSI	1,512,875	325.00		
	Subtotal 1997		***6,682,015***			
Total of State Leases			**67,709,722**			

[1] Formerly Arco

Source: Alabama Dept. of Conservation and Natural Resources, 1988; 1997.

Table 3.7B
Leased Blocks in the Alabama OCS, 1988-1997

Offshore Block no.	Original Lessee	OCS Lease Sale no.	Total Bonus $	Bonus per acre $
MO 819	Chevron	118	65,000	27.90
MO 820	Chevron	118	1,207,000	359.22
MO 910	Union	118	288,600	50.10
MO 954	Union	118	151,300	26.26
MO 859	Chevron/Union	123	146,000	25.34
MO 873	Murphy/ODECO	123	622,222	108.02
MO 909	Murphy/ODECO	123	994,444	172.65
MO 911	Union	123	73,440	25.50
MO 912	Murphy/ODECO	123	338,888	58.83
MO 913	Murphy/ODECO	123	458,888	79.67
MO 918	Chevron/Offshore Bechtel	123	175,800	30.52
MO 962	Union/Chevron/Offshore Bechtel	123	149,000	25.86
MO 826	Unocal/Offshore Bechtel	131	27,786	26.25
MO 871	Unocal/Chevron/Offshore Bechtel	131	201,600	35.00
MO 957	Unocal/Chevron/Offshore Bechtel	131	155,520	27.00
MO 866	OEDC	142	152,640	26.50
MO 874	Murphy	142	589,900	102.41
MO 956	Chevron/Offshore Bechtel	142	236,909	41.13
MO 902	MOEPSI	147	276,800	48.06
MO 944	Chevron	152	181,843	31.57
MO 987	Chevron	152	114,302	27.57
MO 988	Chevron	152	187,603	32.64
MO 991	Chevron	152	2,598,854	451.19
MO 992	Chevron	152	418,579	72.67
MO 993	Chevron	152	187,603	32.57
MO 1004	Union/Chevron/Offshore Bechtel	152	161,914	28.11
MO 1005	Union/Chevron/Offshore Bechtel	152	194,169	33.71
MO 1006	Union/Chevron/Offshore Bechtel	152	198,144	34.40
MO 873	Huntington Beach	157	329,875	57.27
MO 913	Chiefton	157	612,864	106.40
MO 1002	Vastar/Elf/Bechtel	157	227,900	39.57
MO 1003	Vastar/Elf/Bechtel	157	227,800	39.55
MO 946	Chevron	166	208,851	36.26
MO 951	Shell	166	178,000	30.90
MO 989	Zilkha	166	191,520	33.25
MO 997	Callon/Murphy/Santos	166	565,500	98.18
MO 998	Callon/Murphy/Santos	166	209,900	36.44
Total of Federal Leases 1988 - 1997			**13,306,958**	

Source: U.S. Dept. of the Interior, Minerals Management Service, 1998.

Table 3.8
Coastal Alabama Leases: 1997

Bidder	Lease Sale no.	Block No.	Acreage	Total Bonus Payments ($1000)	Bonus per Acre
Exxon					
	1	112	4,932	137,254	27,829
	1	111	1,687	53,168	31,516
	3	114	4,807	52,984	11,022
	3	78	4,980	45,972	9,231
	3	93	4,831	39,364	8,148
	3	64	5,165	32,828	6,356
	81	M 913	5,760	18,887	3,279
	3	116	3,254	18,323	5,603
	3	91	5,012	16,540	3,300
	1	63	5,164	15,226	2,948
	3	97	3,395	14,634	4,310
	3	117	3,541	14,428	4,075
	3	117	3,541	14,428	4,075
	3	73	4,795	12,624	2,633
	1	115	3,416	12,308	3,603
	1	62	5,164	10,522	2,038
	81	M 828	3,090	10,302	3,334
	1	52	5,164	9,112	1,765
	81	M 912	5,760	9,090	1,578
	67	M 867	5,760	6,747	1,171
	3	98	3,652	6,664	1,825
	3	59	4,665	4,244	910
	3	14	5,165	2,723	527
	81	M 829	2,775	2,424	873
	98	M 910	5,760	2,220	385
	3	119	2,945	1,820	618
	98	M 997	5,760	1,614	280
	98	M 957	5,760	1,510	262
	3	131/133	1,535	1,228	800
	67	M 866	5,760	1,211	210
	67	M 868	5,687	1,014	178
	81	M 911	5,760	909	158
	67	M 827	3,174	718	226
		Subtotal	147,616	573,040	3,882
Union, et al					
	1	90	4,612	21,879	4,744
	98	M 950	5,760	11,260	1,955
	98	M 874	5,760	9,750	1,693
	3	118	3,669	9,310	2,537
	98	M 948	5,760	5,137	892
	98	M 951	5,760	3,660	635
	98	M 949	5,760	2,875	499
	81	M 865	5,760	1,567	272
	81	M 860	5,760	1,351	235
	81	M 1003	5,760	989	172
	81	M 1002	5,760	989	172

Table 3.8 (continued)
Coastal Alabama Leases: 1997

Bidder	Lease Sale no.	Block No.	Acreage	Total Bonus Payments ($1000)	Bonus per Acre
Union, Cont'd	72	M 904	5,760	900	156
	69	M 905	5,760	882	153
	94	P 837G	2,828	454	161
	118	M 910	5,760	289	50
	118	M 954	5,762	151	26
	123	M 962	5,762	149	26
	123	M 911	2,880	73	26
	152	M 1004	5,760	162	28
	152	M 1005	5,760	194	34
	152	M 1006	5,760	198	34
		Subtotal	111,913	72,219	645
Chevron, Union and Pennzoil					
	67	M 861	5,198	23,616	4,543
	67	M 862	5,618	17,616	3,135
	72	M 961	5,760	2,572	447
	67	M 906	5,760	2,110	366
	72	M 916	5,760	1,300	226
	72	M 958	5,760	1,300	226
	72	M 915	5,760	1,300	226
	72	M 917	5,760	1,227	213
	118	M 820	3,360	1,207	359
	142	M 956	5,760	237	41
	123	M 918	5,760	176	31
	123	M 859	5,762	146	25
	118	M 819	2,330	65	28
	152	M 944	5,760	182	32
	152	M 987	4,146	114	28
	152	M 988	5,748	188	33
	152	M 991	5,760	2,599	451
	152	M 992	5,760	419	73
	152	M 993	5,760	188	33
	166	M 946	5,760	209	36
		Subtotal	107,041	56,769	530
Conoco, Amoco, Getty & Pennzoil					
	98	M 991	5,740	51,096	8,902
	98	M 992	5,760	20,325	3,529
	98	M 956	5,760	11,768	2,043
	98	M 871	5,760	7,657	1,329
	79	P 969	5,760	1,515	263
	79	P 970	5,760	1,214	211
	81	M 996	5,760	1,108	192
	79	P 881	5,760	957	166
	81	M 995	5,760	918	159
		Subtotal	51,820	96,558	1,863

Table 3.8 (continued)
Coastal Alabama Leases: 1997

Bidder	Lease Sale no.	Block No.	Acreage	Total Bonus Payments ($1000)	Bonus per Acre
SOHIO, et al					
	3	89	4,811	42,712	8,878
	98	M 999	5,760	27,137	4,711
	98	M 1000	5,760	12,625	2,192
	3	88	5,131	7,610	1,483
	98	M 1001	5,760	5,127	890
	98	M 994	5,760	4,256	739
	98	M 998	5,760	3,712	644
	98	M 993	5,760	3,471	603
	67	M 821	4,028	3,000	745
	3	109	2,511	1,100	438
		Subtotal	51,041	110,750	2,170
MOEPSI, et al					
	67	M 779, 823, 824	5,585	55,119	9,856
	67	M 778, 822	5,324	45,117	8,471
	1	71	4,196	40,425	9,634
	1	72	5,164	31,535	6,107
	4	75	2,471	25,178	10,189
	2	110	1,295	3,117	2,407
	1993	61	2,471	1,564	633
	1993	60	2,471	1,322	535
	1969	77	5,165	26	5
	1969	76	5,053	21	4
	1969	95	4,322	20	5
	1969	94	5,155	12	2
	1997	71	5,165	1,317	255
	1997	88	5,131	1,950	380
	1997	89	4,697	1,902	405
	1997	90	4,655	1,513	325
	147	M 902	5,759	277	48
		Subtotal	74,079	210,415	2,840
Texaco (Getty), et al					
	81	M 869	4,503	32,078	7,123
	81	M 962	5,760	6,818	1,184
	81	M 1005	5,760	3,518	611
	81	M 872	5,760	3,518	611
	81	M 1006	5,760	3,037	527
	81	M 873	5,760	2,518	437
	81	M 918	5,760	1,617	281
	81	M 830	2,909	1,518	522
		Subtotal	41,973	54,622	1,301
Shell					
	1	113	5,123	34,370	6,709

Table 3.8 (continued)
Coastal Alabama Leases: 1997

Bidder	Lease Sale no.	Block No.	Acreage	Total Bonus Payments ($1000)	Bonus per Acre
Shell, Cont'd	67	M 909	5,760	28,277	4,909
	1	132	2,367	22,435	9,478
	4	93	4,831	10,388	2,150
	4	92	5,165	8,377	1,622
	4	74	3,842	4,373	1,138
	4	73	4,795	3,873	808
	4	91	5,012	843	168
	166	M 951	5,761	178	31
		Subtotal	42,656	113,114	2,652
ODECO, et al					
	72	M 952	5,760	5,667	984
	72	M 955	5,760	4,778	830
	72	M 953	5,760	3,642	632
	94	P 971	5,760	1,020	177
	94	P 925	5,760	1,020	177
		Subtotal	28,800	16,127	560
Murphy/ODECO					
	123	M 909	5,760	994	173
	123	M 873	5,760	622	108
	142	M 874	5,760	590	102
	123	M 913	5,760	459	80
	123	M 912	5,760	339	59
		Subtotal	28,801	3,004	104
ARCO, et al					
	67	M 908	5,760	24,198	4,201
	72	M 959	5,760	5,553	964
	72	M 960	5,760	1,053	183
	81	M 1004	5,760	920	160
	4	91	1,139	356	312
		Subtotal	24,179	32,080	1,327
Unocal/Offshore Bechtel					
	131	M 826	1,059	28	26
	142	M 866	5,760	153	27
	131	M 957	5,760	156	27
	131	M 871	5,760	202	35
		Subtotal	18,339	538	29
Tenneco, et al					
	72	M 863	5,760	7,930	1,377
	67	M 864	5,760	4,880	847
	98	M 907	5,760	1,459	253
		Subtotal	17,280	14,269	826

Table 3.8 (continued)
Coastal Alabama Leases: 1997

Bidder	Lease Sale no.	Block No.	Acreage	Total Bonus Payments ($1000)	Bonus per Acre
Placid					
	67	M 870	5,618	5,085	905
	72	M 826	1,430	3,564	2,492
		Subtotal	7,048	8,648	1,227
Santa Fe and HNG					
	98	M 914	5,760	5,076	881
Callon					
	4	73	1,228	1,536	1,251
	4	73	985	988	1,003
	4	73	1,291	265	205
	4	72	1,291	225	174
	166	M 997	5,760	566	98
	166	M 998	5,760	210	36
		Subtotal	16,315	3,789	232
OGI					
	4	57	1,291	646	500
	4	71	1,291	646	500
		Subtotal	2,583	1,292	500
OEDC					
	4	90	1,049	134	128
	4	91	1,290	165	128
	142	M866	5,760	153	27
		Subtotal	8,099	452	56
Northern Michigan Exp. Company					
	4	90	1,291	134	104
BSFI Western E&P Inc.					
	1993	61	2,471	13	5
Miscellaneous Operators					
	157	M 873	5,760	330	57
	157	M 913	5,760	613	106
	157	M 1002	5,759	228	40
	157	M 1003	5,760	228	40
	166	M 989	5,760	192	33
		Subtotal	28,799	1,590	55
Total			817,903	1,374,499	1,681

Source: Foster Associates, Inc. 1997; Alabama Dept. of Conservation and Natural Resources, 1997; Alabama Oil and Gas Board, 1986

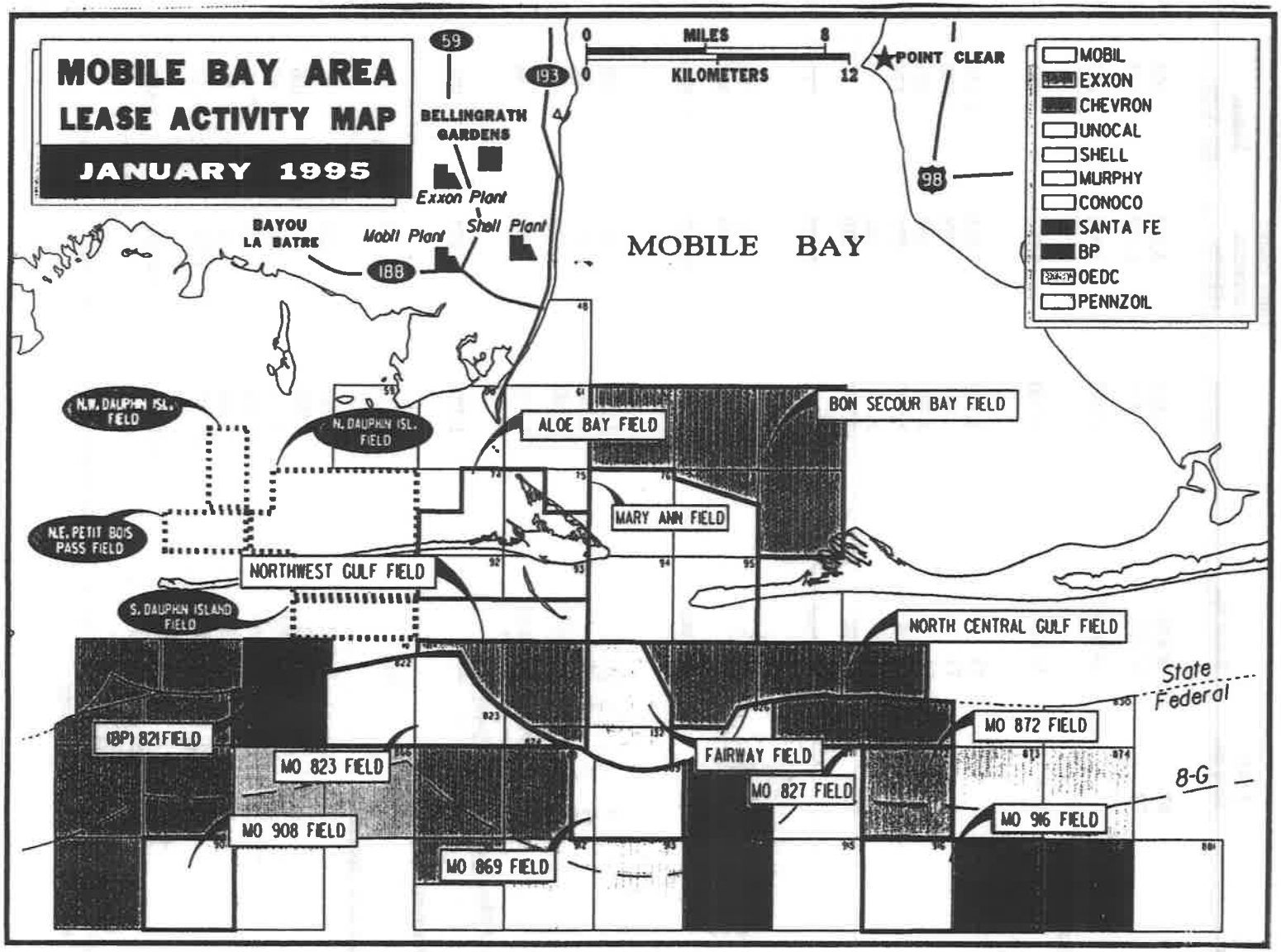


Figure 3.3. Mobile Bay Area Lease Activity Map, January 1995.

Source: MOEPSI, 1997.

over $500,000; bonus payments since 1979 total $868 million from four lease sales since gas was discovered in Mobile Bay in 1979: 1981, 1982, 1984, and 1988. By far the largest bonus collections, almost $450 million, occurred in 1981. Only one bid was accepted in the 1982 lease sale, garnering almost $3.2 million. The 1984 sale collected bonus payments of almost $350 million. In 1988, Alabama received about $58 million; three tracts were leased in 1993 for $3.0 million; four tracts were leased in 1997 for $6.7 million.

After the 1981 lease sale, Alabama politicians were bedazzled by the bonus bonanza, which they viewed as a "one-time thing. . . . a once in a lifetime opportunity to solve the majority of problems facing the State of Alabama, Governor [Fob James] said" in April 1981. Governor James articulated a list of capital projects from prisons to bridges and a controversy emerged as to how to spend the money.[52] The Senate approved a resolution by Senator H. L. "Sonny" Callahan of Mobile "to set the money aside in an invested trust fund and spend only the . . . interest. . . . [leaving] a legacy for the future. . . . Governor James expressed 'serious reservations' about the Callahan proposal at a later press conference."[53] Governor James subsequently proposed to the state legislature that a perpetual trust fund be established to ensure that the State of Alabama would continue to benefit from the bonus proceeds.

3.8.1 Trust Funds Preserve Money for the Future

The Heritage Trust Fund was established after the 1981 lease sale (March 17, 1982). Provisions of the trust fund require that only the interest be distributed for statewide use. A second fund, the Alabama Trust Fund, was ratified December 10, 1984 following the 1984 lease sale. At that time all future royalty payments were directed to the Alabama Trust Fund, with provisions similar to the earlier fund—that only the annual interest accrued could be spent. In 2001 the Heritage Trust Fund will be rolled into the Alabama Trust Fund so that only one fund is maintained.

In FY 1996, the corpus balance of the Heritage Trust Fund was almost $467 million. Table 3.9 shows that the Alabama Trust Fund capital balance stood at about $874 million, having grown with the receipt of state royalty payments and the state's 27 percent share of 8(g) federal royalty payments from producing federal leases within 8 miles of Alabama land. Since 1986, the annual interest from both funds averaged near $100 million.[54] The majority of annual interest earned is transferred into the state's General Fund, where it has amounted to between 11 - 12 percent of the state's General Fund budget in recent years.

Beginning with fiscal year 1992-1993, a percentage of interest earned from the Alabama Trust Fund is transferred to the Forever Wild Trust Fund, a fund established as part of the Forever Wild Program for the acquisition of lands for public use. In FY 1993 payments to the fund

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[52]"Storm brewing over fate of lease funds," Birmingham *Post Herald*, April 3, 1981.

[53]"Storm brewing over fate of lease funds," Birmingham *Post Herald*, April 3, 1981.

[54]Alabama Dept. of Conservation and Natural Resources, 1997.

Table 3.9
State of Alabama Oil and Gas Trust Fund Balances and Interest Earned
(Millons $)

Fiscal Year	Alabama Trust Fund Corpus Balance	Heritage Trust Fund Corpus Balance	Total Corpus Balance of Trust Funds	Alabama Trust Fund Interest to GF	Heritage Trust Fund Interest to GF	Total Trust Fund Interest to GF	Forever Wild Trust Fund Payments
1984-1985	$334.0	$479.8	$813.8	$7.8	$66.7	$74.5	--
1985-1986	$399.9	$479.8	$879.7	$39.8	$61.0	$100.8	--
1986-1987	$400.6	$479.8	$880.4	$39.2	$59.9	$99.1	--
1987-1988	$455.2	$479.8	$935.0	$39.0	$58.8	$97.8	--
1988-1989	$460.2	$467.3	$927.5	$45.3	$60.8	$106.1	--
1989-1990	$465.9	$466.8	$932.7	$44.9	$54.4	$99.3	--
1990-1991	$472.1	$466.8	$938.9	$44.7	$60.8	$105.5	--
1991-1992	$501.2	$466.8	$968.0	$42.7	$50.9	$93.6	--
1992-1993	$571.5	$466.8	$1,038.3	$41.8	$55.7	$97.6	$1.8
1993-1994	$677.7	$466.8	$1,144.5	$40.6	$51.8	$92.4	$2.1
1994-1995	$757.4	$466.8	$1,224.2	$47.5	$51.9	$99.4	$3.0
1995-1996	$873.6	$466.8	$1,340.4	$50.6	$51.8	$102.4	$3.8

Source: Alabama Dept. of Conservation and Natural Resources, 1997.

totalled $1.8 million; payments increased to $3.8 million in FY 1996. After FY 1998, 10 percent of the annual earnings from the Alabama Trust Fund will be directed to Forever Wild, not to exceed $15 million in any fiscal year.

3.8.2 Royalty Payments Have Added to Alabama Trust Fund

Royalty payments to the state totalled $354 million through year end 1996 as shown on Table 3.10. Norphlet production accounted for $301 million, with Exxon providing the most, $147 million, and Shell second at $113 million. Miocene royalty payments amounted to only $17 million. Federal 8(g) payments amounted to $36 million by year end 1996. These payments include production from the federal share of BP's 821 Field, MOEPSI's 823 Field, and Exxon's 827 Field. These will increase in 1997 to reflect MOEPSI's production from the 869 Field and Chevron's production from tracts 819, 820, 863 and 864.

Table 3.10
Annual Royalty Payments to Alabama
($1000)

Calender Year	Exxon/Hunt	MOEPSI	BP	Shell/ Shell Amoco	Norphlet Subtotal	Fiscal Year	Miocene Subtotal	8g Federal Waters	Total
1988		1,540			1,540	87-88		250	**1,790**
1989		3,350			3,350	88-89		710	**4,060**
1990		1,020			1,020	89-90		n/a	**1,020**
1991		4,193		487	4,680	90-91		300	**4,980**
1992		2,741	62	2,070	4,874	91-92	1.35	1,560	**6,435**
1993	469	8,010	288	36,789	45,555	92-93	31	6,560	**52,146**
1994	53,119	6,160	318	31,741	91,337	93-94	5,268	8,330	**104,936**
1995	40,504	5,355	135	20,948	66,942	94-95	7,700	7,370	**82,012**
1996	53,081	7,462	198	21,391	82,132	95-96	4,072	10,945	**97,150**
Total	**147,173**	**39,831**	**1,000**	**113,426**	**301,430**		**17,074**	**36,025**	**354,529**

Source: Alabama Dept. of Conservation and Natural Resources, 1997.

4.0 Exploration Expands Beyond Mary Ann Field

Following the 1979 Mary Ann discovery well, 76-1, MOEPSI and Exxon drilled 11 more successful gas wells in a row. By year end 1984, MOEPSI and Exxon, having discovered five Norphlet reservoirs plus Lower Mobile Bay, had proved that Mobile Bay would become one of the most significant gas producing provinces in the U.S. Exxon and Chevron added two other discoveries in 1985. Table 4.1 catalogs wells as exploration or delineation and shows the fields discovered through 1985. Seventeen Norphlet wells were spudded and tested by year end 1985 taking between six and twelve months each to drill 21,000+ feet wells.

Table 4.1
Norphlet Exploration and Delineation Wells: 1979 - 1985

Operator	Delineation	Exploration	Discovered Fields	Discovery Date
MOEPSI	94-2, 95-1,	76-1	Mary Ann	
	77-1, 76-2, 77-2	823-1	Field	11/28/79
		72-1	823 Field	9/4/83
			West Dauphin	
			Island Field	2/24/84
Exxon	63-1	62-1	Bon Secour	
		913-1	Bay Field	9/23/83*
		867-1	867 Field	7/26/84
		112-1	Northwest	
			Gulf Field	12/25/84
		115-1	North Central	
			Gulf Field	4/12/85
Chevron		861-1	861 Field	8/12/85
Placid		826-1		
Shell		909-1		

*Officially discovered with 63-1 8/29/84.
Source: Table 4.2

Rick Hagar, Gulf Coast Editor of OGJ, who covered the news about Mobile Bay in the 1980s, wrote a long status report in the January 14, 1985 issue. Hagar speculated that reserves discovered to date amounted to about 2.5 TCF, with the federal 823 Field being the largest—at least 1 TCF recoverable. Hagar described the 823 structure as possibly reaching from tract 867 to tract 112. Exxon Exploration V.P. Stephen M. Cassiani, called their success "phenomenal," having hit three gas wells on four plays. He described Exxon's development plans in the "infant

stages" and Cassiani speculated that "the offshore Norphlet trend may someday surpass Prudhoe Bay's 26 TCF."[55]

4.1 MOEPSI Mary Ann Delineation: 1981 & 1982

MOEPSI, having initiated its lower Mobile Bay appraisal program in January 1981, jointly applied to the Corps of Engineers in August with four other winners in Alabama's March lease sale for permission to drill up to 28 deep wells to explore their leased acreage.[56] The program was described as a five year effort in documents submitted to the Corps in August 1981. State officials—other than Mr. Baxley, who ran for governor in 1978 with environmental backing and lost—happy with the $449 million in the bank earning nearly $160,000 a day in interest, strongly endorsed the proposed drilling plan.

MOEPSI's four appraisal wells, 94-2, 95-1, 77-1 and 76-2 were the only wells spudded in 1981 and 1982 as the regulatory agencies reviewed the submitted program. Mrs. Myrt Jones resumed her public stance against drilling in Mobile Bay, keying her remarks at a public hearing in July 1981 against Exxon. She sought evidence that the industry had prepared "a 'fast response' plan to handle oil spills and hydrogen sulfide leaks, using equipment locally available."[57] Both of these are part of the standard response measures.

4.2 Exploration and Delineation Drilling: 1983 - 1985

Exxon was the first of the new group to initiate drilling—but not until January 1983. Four Norphlet wells were spudded in 1983 and seven were spudded in 1984. Six of these 11 were drilled by Exxon. Wells spudded before year end 1984 are shown on Table 4.2.

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[55]OGJ, "Mobile Bay shaping up as major gas producing area," January 14, 1985, p. 25.

[56]OGJ, "Mobile Bay wildcat drilling programs outlined," August 17, 1981, p. 80-81.

[57]"Coastal drilling plans shape up," Mobile *Press*, June 23, 1981.

Table 4.2
Mobile Bay Norphlet Wells Drilled 1979 - 1985

Tract	Operator	Well	Permit Date	Test Date	Status 1/85	Status 12/97
76	MOEPSI	76-1	6/21/78	11/28/79	gas well	Producing
94	MOEPSI	94-2	2/2/81	5/22/82	gas well	Producing
95	MOEPSI	95-1	1/28/81	8/22/82	gas well	P&A
77	MOEPSI	77-1	7/6/82	3/27/83	gas well	Producing
823	MOEPSI	823-A1	4/14/83	9/4/83	gas well	Producing
62	Exxon	62-1	11/30/82	9/23/83 TA not tested until 6/2/85	gas well	Producing
72	MOEPSI	72-1	7/13/83	2/24/84	gas well	P&A
867	Exxon	867-1	3/14/84	7/26/84	gas well	TA; complete in 98
76	MOEPSI	76-2	10/22/82	not tested until 6/29/88	gas well	P&A
77	MOEPSI	77-2	8/26/83	not tested until 6/13/87	gas well	Producing
63	Exxon	63-1	3/14/84	8/29/84	gas well	Producing
112	Exxon	112-1	5/30/84	12/25/84	gas well	Producing
826	Placid	826-1/826-2ST	12/16/83	3/5/85	drilling	P&A (water)
909	Shell	909-1	11/3/84	3/12/85	drilling	P&A
115	Exxon	115-1	9/11/84	4/12/85	drilling	Producing
913	Exxon	913-1	11/13/84	7/13/85	drilling	P&A
861	Chevron	861-1	11/4/84	capped 7/85	drilling	Gas well; blew out, 4/85 -P&A

Source: Alabama Oil and Gas Board, 1997; U.S. Dept. of the Interior, MMS, 1998.

4.2.1 Exxon Steps Out in State Water: 1983 and 1984

Exxon was permitted to drill its first well seeking Norphlet gas on November 30, 1982 and spudded a well on state tract 62 in January 1983 in 14 feet of water targeted to 21,000 feet. The well was three miles north-northeast of Mobil's discovery well. Well 62-1 was drilled to target depth on September 6, 1983, but not tested until June 1985. The well tested 20.5 MMCFD at 20,822 feet as the confirmation of the Bon Secour Bay field. Exxon well 63-1, spudded March 14, 1984 and tested 28.1 MMCFD at 20,792 feet on August 29, 1984 is the official discovery well.

Tract 112, for which Exxon paid $137 million, was not permitted until May 30, 1984. The well tested 21.1 MMCFD on December 25, 1984. Well 112-1 discovered the Northwest Gulf Field at a depth of 21,500 feet. Exxon's aggressive bids in the August 1984 state Lease Sale reflected the information they acquired from their drilling program.

Exxon hit another winner—115-1—in April 1985 giving Exxon four successful state gas wells. Well 115-1 discovered the North Central Gulf Field at a depth of nearly 21,400 feet. The well tested 9.0 MMCFD.

4.2.2 MOEPSI Finds the First Federal Field

MOEPSI's drilling during 1983 and 1984 included two exploration wells (823-A1 and 72-1) and two more delineation wells in the Mary Ann field (76-2 & 77-2). MOEPSI completed its 77-1 well in April 1983 and moved the drilling rig, a Global Marine jack up, to federal tract 823—the first federal acreage to be probed and the first discovery in federal water. The well tested 26 MMCFD April 14, 1983, encountering gross sand thickness of 300 to 700 feet at a depth of up to 1,100 feet deeper than Mary Ann. Federal tract 823 adjoins Exxon's tract 111.

Exxon followed this with a discovery March 14, 1984 in tract 867, adjoining the southern edge of Mobil's tract 823. The well, drilled to 22,422 feet, tested 33 MMCFD, the highest flow rate recorded to date in the Norphlet. Exxon described the discovery as a possible extension of the reservoir underlaying 823. Exxon subsequently drilled a well in adjoining tract 868 that was tested on February 21, 1986, then plugged and abandoned (P&A'd). No development has occurred on 867 although the lease is still active. Exxon maintains that they will produce the 867 gas in 1998.[58]

MOEPSI's third discovery was on state tract 72, north of Dauphin Island and 10 miles west of their first discovery well on tract 76. This well tested 21.2 MMCFD from 21,102 feet on February 24-25, 1984 from the uppermost perforation, having tested water at lower depths. The West Dauphin Island Field was established in September 1985 consisting of tracts 71, 72, 89 and 90. The south half of 89 and 90 subsequently were deleted from the field because Union's well

[58]Telcon with Exxon executive, May 5, 1997.

90-1 was P&A'd as non-productive in July 1986. Union "twisted off leaving 50 feet of bottom hole assembly fish in the hole."[59]

MOEPSI appeared before the AOGB in December 1987 seeking another reduction of field limits to match extensive new 3D seismic evidence that showed that the West Dauphin Island Field was smaller than originally believed. Ultimately, MOEPSI turned the leases back to the state in 1994. The tight zone found in all Norphlet producing reservoirs varies greatly in thickness but is perhaps the thickest in the Alabama Well 72-1 where it reaches a thickness of 141 feet. Average pay thickness is 67 feet. MOEPSI found that the Well 72-1 tight zone is too thick, the structure is too small, and the net pay is too thin to sustain development.

4.2.3 Chevron Pioneers the Western Norphlet Trend

Chevron's first Norphlet well was drilled in tract 861 and tested 11.2 MMCFD at 21,645 feet. The well was 18 miles west of Exxon's discovery in tract 867, and 14 miles south of Pascagoula. The well encountered bottomhole pressure greater than 18,000 psi, well above previous Norphlet discoveries in the 10 - 13,000 psi range. The well blew out underground in April 1985 and was subsequently capped in July, plugged and abandoned. Chevron subsequently drilled a number of Miocene wells and one well to 11,500 feet in tract 861. They finally drilled a second Norphlet well in tract 861 to 22,103 feet seven years later, testing 52 MMCFD on April 9, 1991.

4.2.4 First Disappointments: 1984 & 1985

After hitting 12 gas wells in row, Placid's 826-1 well was the first Norphlet disappointment. The well was P&A'd March 5, 1985 after two sidetracks. This proved that Exxon's tract 115 discovery was sealed on the south by a fault between the state and federal tracts. Placid drilled a well and two sidetracks into this small tract beginning in December 1983 before finally giving up in April 1985. Exxon, a partner in the well, subsequently testified to the AOGB that the well encountered 100 percent water from an interval in the Norphlet that was hoped to contain gas.[60]

Four of the five wells drilling January 1, 1985 were disappointments. These included Shell's first Norphlet well, drilled in tract 909, tested March 12, 1985 and Exxon's well 913-1, tested July 13, 1985. Shell drilled its tract for which it paid $28.2 million in Sale 67 before it drilled its state tracts 113 and 132, which it acquired in 1981. Shell's and Exxon's wells were below 22,000 feet, following the downward dip of the sands. Shell's and Exxon's leases were subsequently terminated, the wells plugged and abandoned. These well results suggest that the productive Norphlet does not extend very far directly south of the entrance to Mobile Bay.

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[59]AOGB Docket 12-17-879A, p. 74.

[60]AOGB Docket 9-6-86, p. 79.

4.2.5 Summary: Exploration Successes: 1983 - 1985

Through 1985, Mobile Bay operators had discovered eight Norphlet fields. Exxon's four discoveries led to the establishment of three producing state fields and one federal field—Bon Secour Bay, North Central Gulf, 827 Field, and Northwest Gulf—which produced between about 320-408 MMCFD in 1997. So far, Exxon has produced no gas from tract 867. MOEPSI's exploration found the 823 Field, which produced as much as 200 MMCFD in 1996, and the West Dauphin Island Field, which was abandoned in 1994. Chevron's discovery led to substantial exploration by Chevron and Union in the vicinity of the 861 discovery, after technical problems were solved to deal with the extremely high reservoir pressures. Production is building up in 1998 from Chevron's 861 tract and wells in adjoining tracts.

4.3 Exploration and Delineation Wells: 1985 - 1989

Twenty-two Norphlet wells were spudded and tested between 1985 - 1989. Most were spudded before gas prices skidded below $2.00 in 1986. Oil prices collapsed at that time, bringing the value of liquid btus in line with natural gas btus, and confirming that the incentives for spudding $20 million exploration wells needed to be reconsidered. The activity in 1985 and 1986 was both planned earlier and needed to be undertaken to comply with five year lease terms from the first state and federal lease sales. Nine wells were spudded after the oil price drop. Exploration slowed considerably during 1988 and 1989.

Twelve of the 22 wells were delineation wells, seven of which drilled by Exxon; ten were exploration wildcats drilled by MOEPSI and the new participants. Table 4.3 shows the wells characterized as delineation or exploration and fields discovered. Seven new fields were discovered bringing the total number of discovered Norphlet fields to 15 by the end of 1989. Table 4.4 shows the wells in date order of their testing.

Table 4.3
Norphlet Exploration and Delineation Wells Drilled: 1985 - 1989

Operator	Delineation Wells	Exploration Wells	Discovered Fields	Discovery Date
Exxon	64-1, 78-1, 114-1, 868-1, 827-1, 97-1, 91-1		827 Field	4/21/86
MOEPSI	823-A2, 822-1, 822-2			
BP		821-1, 999-1	821 Field	4/10/86
Shell	132-1	113-1	Fairway Field	5/2/86
Chevron	862-1	DD56-1	Destin Dome	1/7/88
Texaco		1006-1, 872-1, 869-1	872 Field 869 Field	7/24/88 8/22/89
Union		90-1, 904-1	904 Field	5/18/88
Conoco		991-1		

Source: Table 4.4.

Table 4.4
Mobile Bay Norphlet Wells Spudded and Tested: 1985 - 1989

Tract	Operator	Well	Permit Date	Test Date	Status 1/89	Status 12/97
822	MOEPSI	822-1	1/10/85	9/24/85	P&A	P&A
64	Exxon	64-1	5/24/85	11/8/85	gas/TA	P&A March, 1997
114	Exxon	114-1	1/14/85	12/14/85	gas/TA	P&A
1006	Texaco	1006-1	2/27/85	1/8/86	P&A	P&A
868	Exxon	868-1	8/1/85	2/21/86	P&A	P&A
821	BP	821-1	9/25/85	4/10/86	gas/TA	Producing
113	Shell	113-1	2/15/85	5/2/86	gas/TA	Producing
97	Exxon	97-1	6/13/85	7/16/86	P&A (water)	P&A
90	Union	90-1	12/4/85	7/21/86	P&A (water)	P&A
827	Exxon	827-1	4/1/86	7/29/86	gas/TA	Producing
862	Chevron	862-1	11/9/86	5/21/87	gas/TA	TA;ST, 1998
991	Conoco	991-1	10/16/86	10/28/87	P&A	P&A
91	Exxon	91-1	4/30/85	12/27/87	P&A (water)	P&A
DD56	Chevron	DD56-1	6/12/87	1/7/88	gas/TA	P&A
999	BP	999-1	4/22/87	2/17/88	P&A	P&A
822/ 110	MOEPSI	822-2/ 110-1	8/7/87	5/10/88	P&A	P&A
904	Union	904-1	9/21/87	5/18/88 (bottomhole)	gas/TA; Test 97.6 MMCFD 2/92	start up 12/93; lost the well 8/94
872	Texaco	872-1	11/16/87	7/24/88	gas/test at 25 MMCFD	Producing
132	Shell	132-1	9/17/87	11/27/88	gas	Producing
823	MOEPSI	823-A2	7/23/88	4/7/89	gas/TA	Producing
869	Texaco	869-1	10/7/88	8/22/89	drilling	Gas;P&A
78	Exxon	78-1	12/1/88	12/13/89 (bottomhole)	drilling	Producing

Source: Alabama Oil and Gas Board, 1997; U.S. Dept. of the Interior, MMS, 1998.

4.3.1 Exxon Delineates Discoveries

Four of Exxon's wells extended their discoveries—64-1 and 78-1 extended the Bon Secour Bay Field; 114-1 and 827-1 extended the North Central Gulf reservoir limits. The 827 gas well resulted in the formation of federal 827 Field. The wells in state tracts 91 and 97 hit water to the north of their 111 and 115 discoveries, and the well in 868 must have confirmed that the 823 reservoir did not trend southeast quite as far as originally anticipated. Unlike the 867 discovery, 868-1 was P&A'd. Well 114-1 found gas, but tested only 1.2 MMCFD due to poor quality (low permeability) reservoir rock. Exxon later decided with 3D seismic that 114-1 penetrated a thin section of interdune reservoir. Well 114-2 subsequently penetrated the thick center of the dune containing good quality reservoir rock in 1991, after which 114-1 was P&A'd in 1992.[61] Well 114-2 typically produces about 35 MMCFD.

4.3.2 Texaco Finds Federal 869 and 872 Reservoirs

Texaco's well 872-1 tested 25 MMCFD gas at 22,803 feet in July 1988. Confirming the typical northwest-southeast orientation of Norphlet sands, the well is southeast of the Exxon discovery wells on tracts 115 and 827. Chevron subsequently purchased the 872 discovery from Texaco. Chevron's infrastructure plans for the eastern area of the Mobile OCS supported the purchase. Well 872-1 initiated production March 1996, producing to Union's 916 platform.

Texaco drilled well 869-1 and discovered reserves south of Shell's Fairway Field in August 1989 at 22,635 feet. The well tested only 5.1 MMCFD, suggesting that it wasn't in a very good location in the reservoir. Texaco, which acquired the lease when it merged Getty, subsequently sold the discovery to Mobil because Texaco had no infrastructure and insufficient discoveries to justify development pipelines and processing. Mobil's well later hit a more productive part of the reservoir and the field started production February 1997 from well 869-3 at 80 MMCFD transported to the 823 plant.

Texaco's two discoveries are producing nearly 75 MMCFD in 1997.

4.3.3 MOEPSI's 823 Delineation Efforts

MOEPSI drilled a confirming gas well on its 823 discovery and two wells—822-1, 822-2—looking for the western extension of the 823 reservoir. Well 822-1 was a straight hole, but 822-2 reached a bottom hole in tract 110. Neither of the two found commercially productive Norphlet gas.

4.3.4 BP Finds Federal Field 821

BP's successful well in 821 discovered a new reservoir, rather than a westward trend of the 823

[61]AOGB Docket 11-9-937, p. 287.

reservoir. BP's well subsequently began production in January 1992, producing over 20 MMCFD, processed on the platform. BP had only the single discovery and sold the producing property to Shell August 1, 1996. Shell may drill another well on the tract sometime in 1998.

4.3.5 Shell Finds Fairway Field

Shell's well 113-1 discovered the Fairway Field May 2, 1986 at 21,200 feet. The well tested 13.7 MMCFD. Well 132-1 confirmed the extent of the reservoir November 27, 1988. The Fairway Field was subsequently developed with four wells producing in 113 and one in 132. The 113-1 well was reported by Shell Offshore General Manager of Production, W. W. Dover, as penetrating 500 feet of net pay gas.[62] Porosity averages 13 percent in the reservoir and average pay thickness is 199 feet. Like other Norphlet fields, the Fairway Field has variable H_2S, close to 100 ppm for some of the wells and up to 1.5 percent for others.

4.3.6 Chevron/Union Confirm Western Edge Norphlet Trend

Chevron's well 862-1 found gas, delineating their adjoining 861 discovery, and confirming that the Norphlet trends east-west between the Alabama and the Mississippi OCS. The well remains TA, tentatively scheduled for a sidetrack in 1998. Union's 904-1 discovery southwest of 861 provides evidence of the extent of the productive Norphlet on the western trend of the Norphlet. Union's 904-1 well reached total depth in 1988 but was not tested until February 1992 due to technology limitations on the extremely high pressure gas. The well tested 97.6 MMCFD, the highest rate to date, from 22,290 feet in February 1992. Union's well encountered as much as 20,000 psi—the same problem Chevron encounter with its 861-1. Chevron and Union sought delays from MMS while they developed metallurgy technology to deal with the extremely high pressures.[63] The well was finally brought into production December 1993; but the well was lost in August 1994.

Union's state well 90-1 was water bearing, proving that a fault separated the tract from MOEPSI's discovery on tract 72. This was a major disappointment.

4.3.7 Chevron Hits Destin Dome

The major discovery of the five year period was Chevron's discovery of the Norphlet 22 miles south of Pensacola Beach in the Destin Dome OCS. Well DD56-1 was not tested but "analysis of cores and . . . logs indicated the presence of gas in the Norphlet sandstone"[64] January 7, 1988 at 22,572 feet. After years of unsuccessful exploration of the Eastern Gulf by the industry, Chevron is fulfilling the geologic potential subsequently described by Mink, Tew, et al.[65] The

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[62]OGJ, "Development activity dots Mobile Bay trend," April 6, 1987, p. 27.

[63]OGJ, "Industry slates more exploration, development in the Gulf Norphlet," March 6, 1989, p. 16

[64]OGJ, "Norphlet gas find indicated off Pensacola," February 21, 1989, p. 18.

[65]Mink, Tew, et al, Bulletin 140, 1990, p. 23 - 26.

Norphlet extends east from Mobile Bay. After two subsequent delineation wells, Chevron filed a Development and Production Plan with MMS in December 1996, calling for an expected production of 300 MMCFD on peak, not long after the turn of the century. This discovery put Murphy and Conoco into the game as Chevron's equal partners.

4.3.8 Conoco/BP/Texaco Disappointments

Conoco's and BP's two wells in their expensive federal Sale 98 tracts—991 and 999—provide evidence of their efficiency in planning, permitting and initiating exploration programs; but their disappointments provide further evidence that the productive Norphlet does not run too far directly south of Mobile Bay, even dipped to the greater depths where these wells bottomed: 23,195 and 24,274 feet. Well logs show that Conoco's 991-1 well actually hit extremely good quality gas bearing sand; but the well was in a thin location, penetrating a 30 foot pay zone, possibly interdune. Conoco P&A'd and let the lease expire. Chevron re-acquired tracts 991, 992 and 993 in the 1995 lease sale and made a discovery in 1996 in the Cretaceous, at 15,400 feet. Chevron's plans are not yet announced.

Texaco's January 1986 disappointment in tract 1006 provides further evidence that productive Norphlet with sufficient gas to warrant development is missing in the southern part of the Mobile area OCS, where the Norphlet approaches the shelf edge. The well reached total depth of 23,153.

4.3.9 Major Exploration Achievements/Disappointment: 1985 - 1989

By early 1988, MMS reported discovered reserves at 4 TCF. Operators speculated that discovered reserves at current prices could reach 10 TCF. During 1988 and 1989 four more federal fields were discovered—DD56, 904, 872 and 869—bringing the discovered reserves closer to the 10 TCF estimate.[66] Chevron's Destin Dome discovery and the emerging play on the western trend of the Norphlet stand out as the major exploration achievements of this period. Failure by Conoco, BP, and Texaco to find commercial gas on the southern edge of the Mobile OCS area where Conoco and BP spent over $100 million in Lease Sale 98 stands out as the major disappointment of the five year period. The leases along the southern border of the Mobile OCS have been terminated or allowed to expire.

The March 6, 1989 OGJ contained a graphic of discovered and postulated Norphlet gas structures in the area, which is reproduced as Figure 4.1. While not all of the postulated fields turned out to be commercially productive (e.g., tracts 990/991/999) and not all of the subsequently discovered reservoirs were postulated on the figure (e.g. tracts 904 and 872), Figure 4.1 shows a remarkable number of Norphlet structures with extensive areal coverage.

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[66]OGJ, "Industry slates more exploration development in gulf Norphlet trend," March 6, 1989, p. 15 - 18.

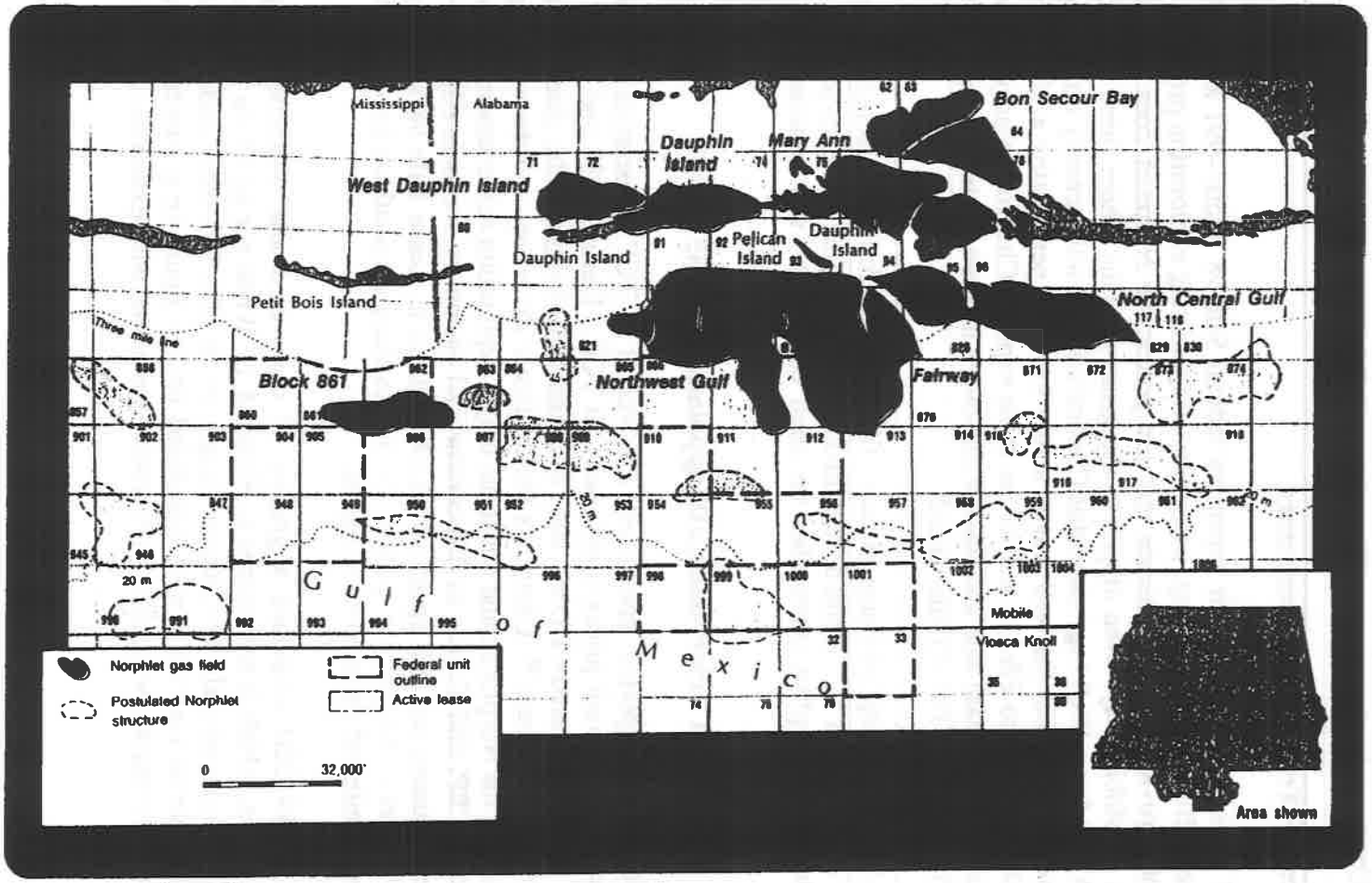


Figure 4.1. Norphlet Structures Off Coastal Alabama.

Source: *Oil and Gas Journal*, March 6, 1989a, p. 15.

Rick Hagar wrote in his summary article that confirmed Norphlet discoveries represented the largest accumulation of U.S. gas found since discovery of Prudhoe Bay.[67]

4.4 Exploration and Development: 1990 to 1993

Eighteen wells were tested between 1990 and June 1993; all but three were development wells. Sixteen of the 18 wells are gas wells, 13 of which are producing in 1997, or are shut-in for workovers. Table 4.5 characterizes the wells as exploration or delineation and shows new field discoveries. Two new fields were discovered during this three and one-half year period: MOEPSI's Aloe Bay Field, north of Dauphin Island, and Union's 916 Field on the eastern edge of the Mobile OCS at the Florida-Alabama line. This brought the total of discovered Norphlet fields to 17. Wells tested in date order are shown on Table 4.6.

Table 4.5
Norphlet Exploration and Delineation Wells Drilled: 1990 - 1993

Operator	Delineation Wells	Exploration Wells	Discovered Fields	Discovery Date
Exxon	114-2, 116-1, 111-1, 112-2, 111-2			
MOEPSI	95-3, 95-4, 823-A3, 823-A4	75-1	Aloe Bay	1/7/92
Shell	113-2,113-3, 113-4			
Chevron	DD56-2, 861-8, 906-2			
Union		950-1, 916-A2	916	12/7/91

Source: Table 4.6.

[67]OGJ, "Industry slates more exploration, development in gulf Norphlet trend," March 6, 1989, p. 15.

Table 4.6
Mobile Bay Norphlet Wells Tested: 1990 - 1993

Tract	Operator	Well	Permit Date	Test Date	Status 12/93	Status 12/97
DD 56	Chevron	DD56-2	10/18/89	11/22/90	Test 22 MMCFD	TA
823	MOEPSI	823-A3	7/7/89	4/25/90	Test 62.3 MMCFD	Producing
823	MOEPSI	823-A4	6/11/90	12/11/90	gas	Producing
95	MOEPSI	95-3	10/16/89	11/15/90	gas	Producing
95	MOEPSI	95-4	11/2/90	5/19/91	gas	TA
950	Union	950-1	2/26/91	8/24/91	P&A	P&A
916	Union	916-A2	3/15/91	12/7/91	Test 42 MMCFD	Producing
861	Chevron	861-8	4/4/91	11/18/91 (TD)	Test 57 MMCFD	Producing
113	Shell	113-2	2/26/90	12/24/91	gas	Producing
113	Shell	113-3	10/19/91	12/25/91	gas	Down for Workover
113	Shell	113-4	10/29/90	1/4/92	gas	Producing
75	MOEPSI	75-1	5/9/91	1/7/92	gas	Producing, Start-up 7/97 at 22 MMCFD
114	Exxon	114-2	1/25/91	2/7/92	gas	Producing
906	Chevron	906-2	11/12/91	5/2/92	P&A	P&A
111	Exxon	111-2	4/4/91	11/24/92	gas	Producing
111	Exxon	111-1	7/6/92	10/29/93	gas	Producing
112	Exxon	112-2	12/13/91	11/4/93	gas	Producing
116	Exxon	116-1	6/26/91	12/1/93	gas	Producing

Source: Alabama Oil and Gas Board, 1997; U.S. Dept. of the Interior, MMS, 1998.

4.4.1 Exxon & Shell Complete Projects and Initiate Production

Exxon and Shell's delineation wells accomplished the following:

- Shell drilled out its Fairway field and started production in December 1991;
- Exxon drilled out its three state fields and started production in October 1993.

The development of these fields is discussed in Section 6.0.

4.4.2 MOEPSI's Development Drilling: Mary Ann and 823

Mobil added two wells to its Mary Ann Field and developed its 823 Field, which started production in November 1991. The development of these fields is discussed in Section 6.0. MOEPSI wells 95-3 and 95-4 completed the drilling program for the original reservoir discovered within its Mary Ann Field. Well 95-3 was tested and brought on production in November 1990. Well 95-3 is the Mary Ann Field's best well, producing an average of 25 MMCFD through September 1996, with lower than field average H_2S, 3.5 percent. Well 95-4 was tested in May 1991, but never produced. After they drilled it, MOEPSI TA'd the well for further evaluation in July 1991. They considered a sidetrack to a better location in 1992. AOGB testimony shows that the well hit "an unusually thick section of tight zone, 163 feet, before penetrating 84 feet of gas."[68] The records show it temporally abandoned.

MOEPSI initiated a program to develop the 823 Field and slated the field for a 1991 start-up. Gas started flowing at 40 MMCFD from a single well in November 1991. Two more wells brought production to 170 MMCFD in March 1992 with less than 200 ppm H_2S.[69] At year end 1993, MOEPSI was producing 140 MMCFD from three wells in 823 to its 250 MMCFD capacity 823 plant. MOEPSI increased its capacity of the Mary Ann Plant to 160 MMCFD to take in the unexpectedly sour gas from 823-A4 well. That well tested 68 MMCFD with 2.8 percent H_2S from 22,570 feet. Production started March 1994.

4.4.3 MOEPSI's Aloe Bay Discovery

Mobil's single exploration well 75-1 discovered its Aloe Bay Field, which covers parts of tracts 74, 75, 92 and 93 on January 7, 1992—underlaying Dauphin Island. Tract 75 was leased from the state in 1988. Gas began flowing to the Mary Ann Plant in July 1997. The plant, which received an average of 144 MMCFD during the first quarter 1997, was debottlenecked to increase capacity to take in the Aloe Bay 8 percent H_2S gas, anticipated to produce between 30 - 50 MMCFD.

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[68]AOGB Docket 7-17-964, p. 130.

[69]OGJ, "Gas flowing from field off Alabama," November 11, 1991, p. 27.

4.4.4 Chevron and Union: Eastern and Western Mobile OCS Successes

Chevron, working with Union, continued to drill to delineate their high pressure reservoir[s] underlaying tracts 860, 861, 862, 904, 905, 906, 948, 949, and 950. Chevron's 861-8 reentered the Norphlet at a better location than the 1985 861-1 well, testing 57 MMCFD from 22,103 feet. The well encountered "more than 360 feet of potential pay, suggesting a large gas reservoir."[70]

Union's 950-1 and Chevron's 906-2 were unsuccessful, apparently confirming that the Norphlet structures under 861, 862 and 904 do not trend southeast in sufficient thickness. Well logs show that the wells encountered gas but not in sufficient volume to be economic. They were P&A'd. (See box.)

Norphlet Drilling Challenges

Chevron reported Well 906-2 to have the "best drilling performance yet experienced in the high pressured Norphlet." Central to the completion of the well 32 days ahead of schedule was the selection of drilling bits. "With well depths in Mobile federal waters averaging [over] 22,000 feet, the key criteria for bit selection is to remain on bottom as long as possible in order to avoid costly trips at those depths. . . . Furthermore, the formations encountered in federal Mobile waters are extremely hard and abrasive, particularly the lower Cotton Valley formation between 18,000 - 21,000 feet. . . . High pressure and hard rock, coupled with bottomhole static temperatures exceeding 425°F, will decimate an improperly selected drill bit." In comparison to Chevron's first Norphlet well, 861-1, which used 19 drill bits, 906-2 used only 9, reducing the round trip costs at $2,000 an hour from $483,567 to $291,098. Eight of the nine bits employed on the 906-2 well were metal sealed roller coned bits in contrast to elastomer O-ring seals used in Chevron's 861 and 862 wells. These proved to be inadequate to contend with the aggressive Norphlet drilling environment. The reliability of the metal seals is as critical to successful Norphlet wells as matching the bit choice and operating rate to the formation rock.

Bomar, B., and J. Callais, Offshore/Oilman, January 1993, p. 31 - 33.

[70]Natural Gas Intelligence, "Chevron, Mobil, Phillips, Apache Announce Large Finds," February 10, 1992, p. 5 - 6.

Chevron achieved confirmation of its discovery on Destin Dome with its DD56-2 well, which tested 22 MMCFD from 22,864 feet November 22, 1990.[71]

Union's 916-A2 well, the first Norphlet discovery in the tract, tested 42 MMCFD December 1991. This was a significant discovery, extending the productive Norphlet trend Chevron discovered with its 872-1 well southeast from Mobile Bay. Union, Chevron and Bechtel's Fremont Energy Corp hold the leases for the tracts that are believed to overlay the discovered reservoir and other productive Norphlet sands—871, 872, 915, 916, 917, 918, 961, and 962.

4.5 Exploration and Development: 1993 - 1997

Drilling in the last five years has been dominated by Chevron and Union developing their eastern and western Mobile Bay Norphlet fields as shown on Table 4.7. Four wells are classified as exploration wells. Murphy's 908-3 well and Chevron's 864-3 well spudded within two months of each other to probe nearby Norphlet targets below 22,000 feet. Well 908-3 was Murphy's first as operator. Chevron hit; Murphy did not. Chevron also drilled a wildcat well in tract 958 that had the same problem found in the 950 and 906 wells: insufficient gas to be economic. Two new fields were discovered in the last four years: Chevron's 864 and 820 fields, bringing the total to 19 Norphlet fields. Eighteen wells tested in date order are shown on Table 4.8, including Exxon's and Chevron's most recent wells spudded, 114-3 and 864-4.

Table 4.7
Norphlet Exploration and Delineation Wells Drilled: 1993 - 1997

Operator	Delineation Wells	Exploration Wells	Discovered Fields	Discovery Date
Chevron	917-2ST, 863-3, 819-1, 820-1, DD57-1, 864-4	958-2 864-3 DD97-1	820 864	12/14/94 6/29/94
Union	904-2, 916-B3, 961-2			
MOEPSI	869-2, 869-3, 95-5ST			
Murphy		908-3,3ST		
Exxon	111-3, 114-3			

Source: Table 4.8.

[71]OGJ, "U.S. Gulf," April 25, 1994, p. 74.

Table 4.8
Mobile Bay Norphlet Wells Spudded and Tested: 1993 - 1997

Tract	Operator	Well	Spud Date	Test Date	Status 12/97
917	Chevron	917-2/A2ST	6/23/93	12/2/93	Producing
916	Union	916-B3	9/24/93	3/15/94	P&A
869	Mobil	868-2	12/18/93	5/18/94	P&A
864	Chevron	864-3	1/28/94	6/29/94	Start up 10/21/96; P&A water problem
DD97	Chevron	DD97-1	3/11/94	7/9/94	P&A
863	Chevron	863-3	12/8/93	9/21/94	Producing; start up 2/19/97 at 18 MMCFD
961	Union	961-2	9/22/94	4/8/95	Producing
908	Murphy	908-3/908-3ST-2	11/23/93	8/27/95	P&A
95	MOEPSI	95-5/95-5ST	4/15/94	10/22/95	Producing; start up 11/96 at 73 MMCFD.
958	Chevron	958-2	11/25/95	2/26/96	P&A
DD57	Chevron	DD57-1	11/7/95	2/7/96	Tested 41 MMCFD; TA
820	Chevron	820-1	9/26/94	12/14/94 (TD);	Producing; 10/31/96 startup at 29 MMCFD
904	Union	904-2	3/15/96	9/18/96	Start-up 12/96 at 32 MMCFD
819	Chevron	819-1	9/17/96	12/15/96 TD	Gas; start-up 1/1/98 at 22 MMCFD
869	MOEPSI	869-3	5/12/96	1/97	Startup at 78 MMCFD
111	Exxon	111-3	3/6/96	3/20/97	Producing; start up at 79 MMCFD
114	Exxon	114-3	3/6/97	10/14/97	gas; start-up Feb, 98 at 65 MMCFD
864	Chevron	864-4	7/13/97	12/97	Producing; start-up at 16 MMCFD

Source: Alabama Oil and Gas Board, 1997; U.S. Dept. of the Interior, MMS, 1998.

4.5.1 Mobil and Exxon Add to Existing Production

Mobil's well, 95-5, came on line during November 1996 producing 66 MMCFD during 20 days of November and 72 MMCFD during December. Well 95-5 is in a reservoir that underlies Exxon's tract 114 tract, the southern portion of Mobil's tracts 94 and 95, and the northwest corner of Exxon's tract 113. (See Box.)

Taking over the lease from Texaco, Mobil drilled well 869-2 which was tested May 18, 1994 at 60 MMCFD. It encountered a liner top problem during completion and was P&A'd. Mobil subsequently spudded 869-3 May 19, 1996, which initiated production in February 1997 at 78 MMCFD; the well produced 85 MMCFD in March, 1997.

Exxon started-up the 111-3 well March 10, 1997 at 79 MMCFD—above expectations—in the Northwest Gulf Field. Exxon's 114-3, an offset to Mobil's 95-5, spudded March 6, 1997 and initiated production in February 1998 at 65 MMCFD.

4.5.2 Murphy's First Norphlet Exploration Venture

Murphy worked for two years trying to find a productive zone as operator of tract 908 which it leased with ARCO and others in 1982. Murphy discovered 400 feet of gas sands but with insufficient permeability, porosity and gas even after several sidetrack attempts over 1994 and 1995. The well was P&A'd August 27, 1995. Murphy's position in the Norphlet remains 33 percent owner of the Destin Dome Unit, plus several yet unexplored Norphlet targets.

4.5.3 Union and Chevron Bring New Fields into Production

Chevron and Union drilled their 916/917 Field with a plan to start production in the first quarter 1995. The 1991 discovery well, 916-A2, was followed by Union's 916-B3 which tested 32.5 MMCFD from 23,026 feet March 1994. The well was reported to penetrate 125 feet of net pay.[72] Chevron's well 917-2ST tested 44 MMCFD in December 1993. Union started production from 916-A2 in April 1995, adding 9 MMCFD from 916-B3 in May.[73] Well 961-A2 initiated production July 31, 1996 at 24 MMCFD. Chevron started-up their 917-2ST well in April 1995 producing 40 MMCFD, 80 ppm H_2S. Well 872-A1 began production February 28, 1996 and averaged 11 MMCFD in mid-year.

Union began production from its 904-1 well on December 22, 1993 at 20 MMCFD. The well reached a peak production rate of 22.3 MMCFD—well below its record test rate—but was lost in August 1994. Chevron started production from 861-8 June 1993 flowing to Union's 904 facility. The well is 120 ppm H_2S. The well initiated production at 30 MMCFD, but developed water problems and was off production from August 1994 until January 1995. It has never produced near the high rates of its initial production, currently maintaining 10 - 12

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[72]Dow Jones News, November 21, 1994.

[73]OGJ, "Unocal steps up gas/condensate production," May 29, 1995, p. 24.

3D and CAEX Improved Norphlet Exploration

New exploration technology 3D seismic and computer-aided exploration workstations (CAEX)—has transformed the way companies explore for hydrocarbons and select bottomhole production locations. Although the largest Norphlet reservoirs were discovered before 3D was widespread, MOEPSI's 1995 well 95-5 and its final bottomhole location with a sidetrack 700 feet to the east of the initial location illustrate how 3D and CAEX are improving Norphlet results.

CAEX and 3D are twin technologies using workstations such as Sun or Silicon Graphics, running interpretation software provided by Geoquest, Landmark and others. The companies use this extremely fast computing power to integrate the 3D seismic data with geologic data to interpret the exploration opportunity. 3D seismic processes lines shot at much smaller interline separation than 2D. 2D captures a few lines per mile; 3D processes lines shot at one to two hundred feet and then assembles the data to map the structure in three dimensions. 2D shows less than 25 percent of the subsurface information that 3D shows because 3D processes the closely-spaced information volumetrically. Digicon, a company that performs 3D seismic shoots, uses an NEC SX4 mainframe to process Terabytes of data (1 Terabyte = 1,000 Gigabytes = 1,000,000 Megabytes). With these data intensive tools, geologic structural features appear that cannot be seen with 2D. Fault locations become more certain. Using contrasting color and amplitude extraction, the view of the target zone can be improved to delineate the pay sands. Reservoir areal extent and thickness can be mapped and well path can be designed to penetrate the target at the optimum point.

MOEPSI's well 95-5 illustrates the effects of 3D seismic data on well placement. MOEPSI spudded the 95-5 well in July of 1994, deviated 7400 feet east from a rig located outside the Mobile Bay shipping fairway in tract 94. The initial well was tested May 1995 and judged capable of producing 50 MMCFD. 3D seismic data were used to clarify the top and base of Norphlet and show the geologic depth cross section on the well 95-5. Conventional 2D seismic could be relied upon only to supply information on structural position. The well was sidetracked (ST) to a location 8100 feet east of the rig to maximize both structural height and stratigraphic thickness, reaching total depth in October 1995. (OGB Docket, 7-19-964, p. 123.) Moving the well 700 feet further east from its original bottomhole location improved the porosity from 11.7% to 12.8% and improved productivity of the well markedly. The ST well tested 77.3 MMCFD on October 23 1995. Production averaged 70 MMCFD during December-January, 1997 following start-up in November, 1996.

The improved productivity dramatically helps the economics. The added 20 MMCFD improves cash flow by $20,000 a day, if the wellhead net back price is $1.00 per MCF. An incremental six million dollars a month will pay for a substantial amount of 3D seismic data and drill rig time.

MMCFD. This was the only production to the 904 facilities after 904-1 was lost until Union brought a new well 904-2 on line December 24, 1996 at 32 MMCFD. The well is planned to reach 50 MMCFD after the well has stabilized.[74] The ultimate production rate from the 904 field is yet unknown.

Chevron's well 864-3 started production at 20 MMCFD October 21, 1996, but encountered a water production problem and was shut in. It was P&A'd April 1997. Well 864-4 spudded in July, 1997, to replace 864-3. The well initiated production in December at 20 MMCFD, 40 ppm H_2S; ultimately, the well is expected to produce 35 MMCFD. Chevron's 863-3 well "cut more than 250 feet of net pay below 21,700 feet" in September 1994.[75] Production started February 19, 1997 at 18 MMCFD, ramping up to 47 MMCFD in April 1997. The well tested at an unexpectedly high H_2S content, 1.7 percent. A pipeline was installed to the Shell Fairway Field and the 863-3 gas is processed in the Yellowhammer plant. The well was shut in for repairs in December but was producing 44 MMCFD by April 1998.

Chevron spudded well 819-1 September 1, 1996 which reached total depth of 22,042 December 16, 1996. The drilling time of well 819-1 shows that Norphlet wells are achieving new levels of productivity. The well took 3.5 months, compared to the previous standard of five - six months. Chevron attributed the drilling record to experience gained in bit selection and casing.[76] MOEPSI's first two Norphlet wells took a year. Chevron's well 819-1 initiated production January 1, 1998 at 22 MMCFD.

4.5.4 Chevron's Destin Dome

Having probed the DD56 structure successfully with two wells, Chevron spudded an exploration well on tract 97 in March 1994. This well was unsuccessful. Chevron subsequently hit another gas well in October 1996 on tract DD57—three successes out of four wells—and filed a development plan in December 1996. A May 1, 1996 press release reported a test of 41 MMCFD with average porosity and permeability significantly exceeding the two earlier DD56 wells.

4.5.5 Drilling and Planned Norphlet Wells: 1998

Planned and likely 1998 wells are shown on Table 4.9. Mobil spudded two wells in December, 1997: 823-A5 and 914-4. The 914 well is a partnership with Enron and Chiefton. The latter two companies are partners in the 913/914 leases producing Miocene gas. Nine additional wells are announced or under consideration for drilling in 1998. All of these wells represent extensions of known geology or wells to maintain production.

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[74]Union press release, January 9, 1997.

[75]OGJ, "Industry Briefs," October 10, 1994, p. 36.

[76]Personal communication from Gary Jacobs, August 6, 1997.

Table 4.9
Mobile Bay Norphlet Wells Drilling/Planned to Spud: 1998

Tract	Operator	Well	Spud Date	Test Date	Status 12/97
823	Mobil	823-A5	12/97	NA	Drilling
914	Mobil	914-4	12/97	NA	Drilling
61	Mobil	61-1	1998	NA	Planning
75	Mobil	75-2	possible	NA	Planning
821	Shell	821-2	possible	NA	Planning
918	Spirit	918-1	April-May, 1998	NA	Planning
904	Spirit	904-3	After 918-1	NA	Planning
871	Spirit	871-1	possible	NA	Planning
819	Chevron	819-2	possible	NA	Planning
862	Chevron	862-1ST	possible	NA	Planning
863	Chevron	863-4	Sept, 1998	NA	Planning

Source: Industry POEs and telcons with industry staff, 1998.

4.5.6 Norphlet Summary: December, 1997

Through December, 1997, 75 Norphlet wells have been drilled in state and federal waters off Coastal Alabama. The operators shown on Table 4.10 discovered 20 gas fields, all but three of which are producing. MOEPSI abandoned the West Dauphin Island Field as uneconomic; Exxon maintains their 867 Field lease, and plans to produce it in 1998. Chevron and its partners, Conoco and Murphy, have filed a DOCD with MMS to develop Destin Dome. Exxon has drilled the most wells, 20; MOEPSI has drilled 19. Twenty-eight wells were exploration wells. Twenty Norphlet discoveries for 28 exploration wells represents a 71 percent success ratio.

Table 4.11 summarizes production, producing wells and planned wells for the near future, including Destin Dome wells. The fields produced 1.1 BCFD in February 1998 from 40 wells. This table includes wells TA plus the wells that are drilling and planned previously shown on Table 4.9. Nineteen wells are currently TA, drilling or planned including Destin Dome's wells, and Shell's well 113-3 undergoing a workover. These wells will keep the local area busy for the next several years. Potential new production to augment and sustain existing production levels over the next several years will come from:

Two wells initiated production in January and February—819-1 and 114-3;
Two wells spudded in December, 1997—914-4 and 823-A5;

Table 4.10
Mobile Bay State and Federal Norphlet Exploration Summary: 12/97

	Exploration Wells	Delineation Wells	Discovered Fields
MOEPSI	4	15	Mary Ann 823 West Dauphin Island Aloe Bay
Exxon	5	15	Bon Secour Bay 867 Northwest Gulf North Central Gulf 827
Chevron	5	10	861 Destin Dome 820 864 872
Union	4	3	904 916
Shell	2	4	Fairway
BP	2		821
Texaco	3		872 869
Conoco	1		
Placid	1		
Murphy	1		
Total	**28**	**47**	**20 Discovered Fields**

Source: Tables 4.1 - 4.9.

Table 4.11
Active Norphlet Fields - February, 1998

Field Name	Operator (Partners)	Tracts	Discovery Announced	Production Start up	Producting Wells - February Total	Producting Wells - February ID	Drilling/Planned/ Workover/TA Wells Total	Drilling/Planned/ Workover/TA Wells ID	4Q 1997 Production Rate - MMCFD	Processing Plant	Processing Plant Capacity MMCFD
State Offshore											
Mary Ann	MOEPSI	76, 77, 94, 95	11/28/79	4/88	6	76-1, 94-2, 77-1, 77-2/ 95-3/95-5ST	1	95-4-TA	105	Mary Ann/Yelham/823	180
Bon Secour Bay	Exxon	62, 63, 64 , 78	03/14/84	11/93	3	62-1, 63-1, 78-1	1	61-1-P	106	Exxon	400
Northwest Gulf	Exxon	111, 112, 131	12/25/84	10/93	5	111-1, 111-2, 111-3, 112-1, 112-2	0		201	Exxon	
North Central Gulf	Exxon	114, 115, 116	04/12/85	11/93	4	115-1, 114-2, 116-1, 114-3	0		125	Exxon	
Fairway	Shell/Amoco	113, 132	05/02/86	12/91	4	113-1, 2, , 4, 132-1	1	113-3-WO	98	Yellowhammer	200
Aloe Bay	MOEPSI	74, 75, 92, 93	01/07/92	7/97	1	75-1	1	75-2-P	23	Mary Ann	
Subtotal	*6*				*23*		*4*		*658*		*780*
Federal OCS											
823 Field	MOEPSI	822, 823, 824	02/24/84	11/91	4	823-A1, 2, 3/A4	1	823-5-D	139	823/Mary Ann	300
867 Field	Exxon	867, 868, 911	07/26/84	1998	0		1	867-1-TA	0	Exxon	
861 Field	Chevron	860, 861, 862	08/12/85	12/93	1	861-8	1	862-1ST	9	904 Platform	80
821 Field/109 state	Shell	821	04/10/86	11/92	1	821-1	1	821-2-P	15	821 Platform	60
827 Field	Exxon	827, 828	04/21/86	11/93	1	827-1	0		29	Exxon	
Destin Dome	Chevron/ Conoco/		01/07/88	2000	0		5		0	Destin Dome	NA
904 Field	Union	904, 905, 948, 949	05/18/88	12/93	1	904-2	1	904-3-P	38	904 Platform	
872 Field	Chevron	872, 873	07/24/88	4/95	1	872-A1	0		12	916 Platform	150
869 Field	MOEPSI/Exxon	868, 869, 914	08/22/89	1/97	1	869-3	1	914-4-D	64	823 Plant	
916 Field	Union/Chevron	871, 915, 916, 917, 918, 961, 962	12/07/91	4/95	3	916-A2, 961-A2, 917-A2ST	2	916-1, 871-1-P	62	916 Platform	
820 Field	Chevron	819, 820	12/18/96	10/96	2	820-1, 819-1	1	819-2-P	55	864 Platform	150
864 Field	Chevron	863, 864	09/21/94	2/97	2	863-3/ 864-4	1	863-4-P	65	Yellowhammer/864	
Subtotal	*13*				*17*		*15*		*488*		*740*
Total	**19**				**40**		**19**		**1148**		**1520**

Source: Foster Associates, Inc. , April, 1998.

notes: Exxon 867-1 has to be put online by 12/31/98 or lose the lease. Mobil has to drill tract 61 by 12/31/98 or lose the lease.

Chevron's 863-3 well was down to repair a safety value during 4Q; production rates shown are April 1998 production plus new well 864-4, which started in December and is producing 16 MMCFD.

Chevron 819-1 started production January 1 at 22 MMCFD.

Exxon 114-3 started production early February at 65 MMCFD.

Three wells TA, pending further evaluations—95-4, 867-1 and 862-1, which will be sidetracked in 1998;
One well down for workover—113-3;
Eight wells under consideration in 1998 for drilling shown on Table 4.9;
Five wells planned for Destin Dome.

Table 4.12 shows the number of Coastal Alabama and Destin Dome Norphlet wells tested by year. Four to six wells have been tested annually in every year of the 1990s, averaging 4.5 wells tested per year. Drilling and planned wells will maintain that average at least until Destin Dome comes into production.

Good thing MOEPSI decided to drill a mile below the Smackover to the Norphlet in their original exploration of Lower Mobile Bay!

Table 4.12
Norphlet Wells Tested by Year

Year	No. of Norphlet Wells	Year	No. of Norphlet Wells
1979	1	1988	6
1980	0	1989	3
1981	0	1990	4
1982	2	1991	6
1983	4	1992	5
1984	5	1993	4
1985	8	1994	6
1986	7	1995	3
1987	3	1996	4
		1997	4

4.6 Miocene Exploration, Development and Transportation in Coastal Alabama State and Federal Waters

MOEPSI tested the first offshore Miocene well in 1982 as part of the Lower Mobile Bay development plan. Well 95-2 tested 4 MMCFD October 9, 1982; the gas was used as fuel gas for the project and the well is now shut-in. While majors have focused mainly on finding and developing Norphlet gas, several independents have pursued smaller, shallow Miocene gas prospects in Coastal Alabama state and federal waters. ODECO President Hugh Kelly called the Alabama Miocene "an independent's play," in a 1989 OGJ article. Miocene wells are drilled

in a few days to a few weeks for little more than $150,000 and discoveries average 10 - 15 BCF[77] versus numbers ranging in the hundreds of BCFs for Norphlet discoveries.

The critical achievement of the Miocene development was the Dauphin Island Gathering System (DIGS) pipeline, constructed to transport the gas to market. This is discussed within this section.

4.6.1 Miocene Geology Overview and Drilling Summary

The Miocene is a much younger geologic age formation found between 1,500 - 3,000 feet in the state offshore region dipping to 4,000 - 7,500 feet in the federal OCS.[78] Miocene gas is typically 99.9 percent methane, probably biogenic in origin, in comparison to Norphlet comprised of substantial H_2S and CO_2 contaminants. Miocene gas is pipeline quality requiring none of the specialized technology processes used with Norphlet gas. Bottomhole pressures for Miocene discoveries range from 550 to 1,200 psi compared to >10,000 psi for Norphlet.

The Miocene sands are categorized as upper, middle and lower, with the strata dipping down to the southwest from Mobile Bay. Gas-bearing Miocene sands have been discovered throughout Southwest Alabama, but discoveries have been generally deeper, larger, more numerous and more productive offshore. Union Exploration vice-president, Graydon H. Laughbaum was quoted as saying "MOEPSI's discovery in the Mary Ann Field led his company to the trend. . . . Everyone knew the Miocene was there; but we didn't map it in detail until we got better [3D] seismic and decided it was worth drilling for on its own."[79]

Table 4.13 shows the Miocene wells drilled in date order in state and federal waters. Following MOEPSI's state Miocene well 95-2, Tenneco tested the next Miocene well on OCS block 864 in January 1983 (now operated by Chevron). A total of 40 Miocene wells were drilled in the Mobile OCS between 1983 and 1989, 76 total in state and federal waters through 1996. Besides the obvious objective of discovering economic gas reservoirs, the wells were drilled to achieve two other purposes:

- Search for sufficient discovered reserves to justify a pipeline system;
- Demonstrate activity on the leases sufficient to meet the five year lease requirement.

The peak drilling years, 1985 and 1987, when 10 and 13 Miocene wells were drilled, are coincident with the second bullet objective. Over two-dozen of these wells tested gas for a success rate of 64 percent. Only two miocene wells were drilled in 1996. Table 4.14 shows

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[77]OGJ, "Smaller Miocene targets draw attention in Norphlet areas," March 6 1989, p. 17.

[78]Petroleum geology draws from Mink, Robert M., Ernest A. Mancini, Bennett L. Bearden and Charles C. Smith, "Middle and Upper Miocene Natural Gas Sands in Onshore and Offshore Alabama," AOGB Reprint Series 71, 1988.

[79]OGJ, "Smaller Miocene targets draw attention in Norphlet areas," March 6 1989, p. 17.

Table 4.13
Mobile Bay Miocene Wells Spudded: 1979 - 1997

Field	Tract	Current Operator	Well Number	Well Depth	Date Tested, TA or Plugged	Well Status	No. of Wells Per Year
N. Dauphin Is	95	MOEPSI	2	3,058	10/09/82	SI	1
864	864 M	Chevron	1	3,050	01/09/83	P&A	1
952	953 M	Murphy	1	3,620	03/20/84	COM	
955	955 M	Murphy	1	4,119	04/14/84	P&A	2
952	952 M	Murphy	1	4,270	03/04/85	COM	
861	908 M	ARCO	1	3,145	04/15/85	P&A	
864	861 M	Chevron	2	4,375	04/18/85	Gas/COM	
864	863 M	Chevron	1	3,050	04/22/85	TA	
861	861 M	Chevron	4	3,650	05/12/85	Gas/COM	
861	861 M	Chevron	5	3,650	05/15/85	Gas/COM	
861	861 M	Chevron	7	3,650	06/16/85	Gas/COM	
861	861 M	Chevron	6	12,333	08/06/85	Gas	
861	861 M	Chevron	3	11,352	08/06/85	Gas/DSI	
864	908 M	Chevron	2	4,094	08/17/85	Gas	10
914	914 M	Enron	A1	2,906	07/12/86	COM	
906	906 M	Chevron	1	3,700	07/31/86	P&A	
991	991 M	Conoco	1	4,960	10/15/86	P&A	3
870	870 M	Santa Fe	1	2,449	02/25/87	COM	
870	870 M	Santa Fe	A1	2,449	03/09/87	COM	
955	945 M	Murphy	2	4,080	07/27/87	COM	
959	959 M	VASTAR	1	3,100	10/09/87	ST	
959	959 M	VASTAR	1	2,078	10/17/87	P&A	
960	960 M	VASTAR	1	3,100	10/25/87	TA	
870	870 M	Santa Fe	2	2,292	11/02/87	COM	
916	916 M	Union	1	3,100	11/15/87	TA	
914	914 M	Enron	A2	2,456	11/15/87	COM	
914	914 M	Enron	3	2,489	11/25/87	COM	
914	958 M	Chevron	1	2,601	11/30/87	P&A	
870	870 M	Santa Fe	3	2,550	12/09/87	P&A	
961	961 M	Union	1	3,191	12/16/87	COM	13
959	915 M	Union	1	2,378	01/07/88	COM	
961	917 M	Union	1	3,068	05/11/88	P&A	
864	864 M	Chevron	A2	3,197	08/06/88	COM	
1003	1003 M	Union	1	2,800	11/22/88	P&A	
1002	1002 M	Union	1	3,500	12/01/88	P&A	5
881	881 P	Apache	1	2,700	01/28/89	TA	
830	830 M	Apache Corp.	1	2,050	02/18/89	TA	
	873 M	Texaco	1	2,410	02/26/89	P&A	
865	865 M	Scana	1	3,800	05/19/89	TA	
	873 M	Gulfstar	2	1,850	06/22/89	P&A	
SE Mobile Bay	77	MOEPSI	4	3,075	08/08/89	P&A	6
947	947 M	Hall-Houston	1	3,200	05/09/90	COM	
990	990 M	Hall-Houston	1	4,033	05/26/90	COM	
945	945 M	Hall-Houston	1	4,400	06/04/90	COM	
N. Dauphin Is	73	Callon	1	2,510	07/09/90	Gas	
NW Dauphin Is	71	OGI	1	2,514	07/21/90	Gas	
N. Dauphin Is	72	Callon	2A	2,252	07/31/90	Gas	
864	863 M	Chevron	2	3,400	08/07/90	COM	
864	907 M	Chevron	A1	2,800	08/07/90	COM	8
N. Dauphin Is	73	Callon	1	3,977	06/09/91	Gas	
N. Dauphin Is	73	Callon	2	3,644	07/02/91	Gas	
N. Dauphin Is	73	Callon	3	3,978	07/27/91	Gas	
WC	71	ARCO	1	4,334	08/23/91	P&A	4
S. Dauphin Is.	91	OEDC	1	3,464	04/09/93	Gas	
823	822 M	OEDC	A1	2,707	05/17/93	COM	
823	822 M	OEDC	A2	3,085	05/24/93	COM	
S. Dauphin Is.	90	OEDC	2	3,842	06/11/93	Gas	
S. Dauphin Is.	90	OEDC	1	2,460	06/11/93	Gas	
NE Petit Bois Pass	71	OGI	1	2,100	10/11/93	Gas	5
NW Dauphin Is	57	OGI	1	1,938	01/16/94	Gas	
S. Dauphin Is.	90	OEDC	1 ST	3,779	04/05/94	Gas	
865	865 M	Scana	A2 ST	1,721	04/22/94	COM	
866	822 M	OEDC	5	1,400	06/12/94	P&A	
866	822 M	OEDC	B1	1,677	07/19/94	COM	
959	959 M	OEDC	A1	2,310	10/16/94	COM	
959	959 M	OEDC	A2	2,610	11/09/94	COM	
960	960 M	OEDC	A1	2,279	11/20/94	ST	8
959	959 M	OEDC	A3	2,567	01/19/95	ST	
865	865 M	Scana	A3	2,502	01/23/95	COM	
E. Miss. Sound	59	Legacy	1	5,100	02/25/95	Gas	
959	959 M	OEDC	A3	2,396	03/25/95	COM	
Goose Bayou	59(SL)	8 Legacy	1–2	5,414	04/10/95	Gas	
960	960 M	OEDC	A2	2,313	04/17/95	COM	
959	959 M	OEDC	A4	2,076	05/28/95	COM	
NE Petit Bois Pass	71	OGI	1	3,204	11/16/95	Gas	
960	960 M	OEDC	A1 ST	2,290	11/25/95	COM	9
NW Dauphin Is	71	OGI	3 2 ST	3,995	02/13/96	Gas	
861	861 M	Chevron	9	3,385	10/23/96	COM	2

Source: Alabama Oil and Gas Board, 1986; U.S. Dept. of the Interior, Minerals Management Service, 1998.

Table 4.14
Mobile Bay Miocene Gas Wells

Field	Tract	Current Operator	Well Number	Well Depth	Date Tested, TA or Plugged	Well Status
E. Miss. Sound	59	Legacy	1	5,100	02/25/95	Gas
Goose Bayou	59(SL)	Legacy	1–2	5,414	04/10/95	Gas
NE Petit Bois Pass	71	OGI	1	2,100	10/11/93	Gas
NE Petit Bois Pass	71	OGI	1	3,204	11/16/95	Gas
NW Dauphin Is	71	OGI	3 2 ST	3,995	02/13/96	Gas
NW Dauphin Is	71	OGI	1	2,514	07/21/90	Gas
NW Dauphin Is	57	OGI	1	1,938	01/16/94	Gas
N. Dauphin Is	73	Callon	1	2,510	07/09/90	Gas
N. Dauphin Is	73	Callon	3	3,978	07/27/91	Gas
N. Dauphin Is	72	Callon	2A	2,252	07/31/90	Gas
N. Dauphin Is	73	Callon	1	3,977	06/09/91	Gas
N. Dauphin Is	73	Callon	2	3,644	07/02/91	Gas
N. Dauphin Is	95	MOEPSI	2	3,058	10/09/82	SI
S. Dauphin Is.	91	OEDC	1	3,464	04/09/93	Gas
S. Dauphin Is.	90	OEDC	2	3,842	06/11/93	Gas
S. Dauphin Is.	90	OEDC	1	2,460	06/11/93	Gas
S. Dauphin Is.	90	OEDC	1 ST	3,779	04/05/94	Gas
823	822 M	OEDC	A1	2,707	05/17/93	COM
823	822 M	OEDC	A2	3,085	05/24/93	COM
830	830 M	Apache Corp.	1	2,050	02/18/89	TA
861	861 M	Chevron	9	3,385	10/23/96	COM
861	861 M	Chevron	3	11,352	08/06/85	Gas/DSI
861	861 M	Chevron	7	3,650	06/16/85	Gas/COM
861	861 M	Chevron	4	3,650	05/12/85	Gas/COM
861	861 M	Chevron	5	3,650	05/15/85	Gas/COM
861	861 M	Chevron	6	12,333	08/06/85	Gas
864	863 M	Chevron	1	3,050	04/22/85	TA
864	907 M	Chevron	A1	2,800	08/07/90	COM
864	908 M	Chevron	2	4,094	08/17/85	Gas
864	863 M	Chevron	2	3,400	08/07/90	COM
864	861 M	Chevron	2	4,375	04/18/85	Gas/COM
864	864 M	Chevron	A2	3,197	08/06/88	COM
865	865 M	Scana	1	3,800	05/19/89	TA
865	865 M	Scana	A3	2,502	01/23/95	COM
865	865 M	Scana	A2 ST	1,721	04/22/94	COM
866	822 M	OEDC	B1	1,677	07/19/94	COM
870	870 M	Santa Fe	2	2,292	11/02/87	COM
870	870 M	Santa Fe	1	2,449	02/25/87	COM
870	870 M	Santa Fe	A1	2,449	03/09/87	COM
881	881 P	Apache	1	2,700	01/28/89	TA
914	914 M	Enron	A2	2,456	11/15/87	COM
914	914 M	Enron	A1	2,906	07/12/86	COM
914	914 M	Enron	3	2,489	11/25/87	COM
916	916 M	Union	1	3,100	11/15/87	TA
945	945 M	Hall-Houston	1	4,400	06/04/90	COM
947	947 M	Hall-Houston	1	3,200	05/09/90	COM
952	952 M	Murphy	1	4,270	03/04/85	COM
952	953 M	Murphy	1	3,620	03/20/84	COM
955	955 M	Murphy	2	4,080	07/27/87	COM
959	915 M	Union	1	2,378	01/07/88	COM
959	959 M	OEDC	A3	2,567	01/19/95	ST
959	959 M	OEDC	A3	2,396	03/25/95	COM
959	959 M	OEDC	A4	2,076	05/28/95	COM
959	959 M	OEDC	A2	2,610	11/09/94	COM
959	959 M	OEDC	A1	2,310	10/16/94	COM
959	959 M	VASTAR	1	3,100	10/09/87	ST
960	960 M	OEDC	A2	2,313	04/17/95	COM
960	960 M	OEDC	A1	2,279	11/20/94	ST
960	960 M	OEDC	A1 ST	2,290	11/25/95	COM
960	960 M	VASTAR	1	3,100	10/25/87	TA
961	961 M	Union	1	3,191	12/16/87	COM
990	990 M	Hall-Houston	1	4,033	05/26/90	COM

Source: Alabama Oil and Gas Board, 1986; U.S. Dept. of the Interior, Minerals Management Service, 1998.

the gas wells re-ordered by subsequently defined fields. A substantial number of small Miocene reservoirs were discovered before a pipeline was built to bring the gas to market.

4.6.2 Dauphin Island Gathering System

Central to Miocene development was Offshore Energy Development Corp (OEDC) development of the Dauphin Island Gathering System (DIGS) to move gas to shore. OEDC drilled its first Miocene gas discovery June 1991 on Alabama tract 90, followed by a subsequent discovery on tract 91. OEDC conceived the need for a pipeline to transport its own and other's gas to shore. OEDC's strategy was to develop a gathering system through Coastal Alabama to pick up both miocene and pipeline quality Norphlet gas (e. g., Norphlet gas from BP and Union/Chevron processed on the platforms).

Rather than skirt Dauphin Island via the ship channel at the mouth of Mobile Bay, OEDC decided DIGS could be routed by boring under Dauphin Island and heading straight to the Interstate connection. Permits and right-of-way were approved in the fall of 1991 and OEDC started looking for partners to pay for the project. BP was planning to start its 821-1 in January 1992 and agreed to dedicate its Block 821 gas to DIGS. OEDC obtained commitments from Miocene producers south and north of Dauphin Island in addition to BP and the first stage of DIGS was completed before the end of 1991.[80]

DIGS begins on Block 822, where a number of gathering pipelines from nearby fields converge at OEDC's central gathering facility. BP's 12-inch pipeline connects to the Block 822 platform, which in turn connects to the DIGS just south of Dauphin Island. OEDC bored an almost mile-long tunnel through Dauphin Island and ran three 12-inch pipes through the island—one for immediate capacity, and two for expansion. Figure 4.2 shows the location of DIGS in relation to other existing pipelines in Mobile Bay.

Gas emerges from the northern shore of Dauphin Island, flowing through the 20-inch DIGP pipeline (a partnership between Enron and OEDC) that travels onshore to OEDC's metering station and the Transco and Koch Interstate pipeline systems. On its way to shore, the 20-inch DIGP pipeline travels through the North Dauphin Island Field, where it connects with gathering lines from platforms in state blocks 71, 72, and 73.

OEDC expanded the pipeline from its 822 platform through federal waters to the east to connect platforms in Mobile Blocks 870, 914, 915, and 916. In January of 1994, OEDC installed 20-inch pipe for a 40-mile extension from BP's Mobile 821 platform south across federal waters to Block 954 in the southern Mobile area and still further south into the Viosca Knoll OCS area. This pipeline began transporting gas to market in late 1994.[81]

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[80]OEDC Prospectus October 9, 1996, p. 40.

[81]OGJ, "Mobile Bay gas flow rising in response to E&D campaigns," January 10, 1994, p. 23.

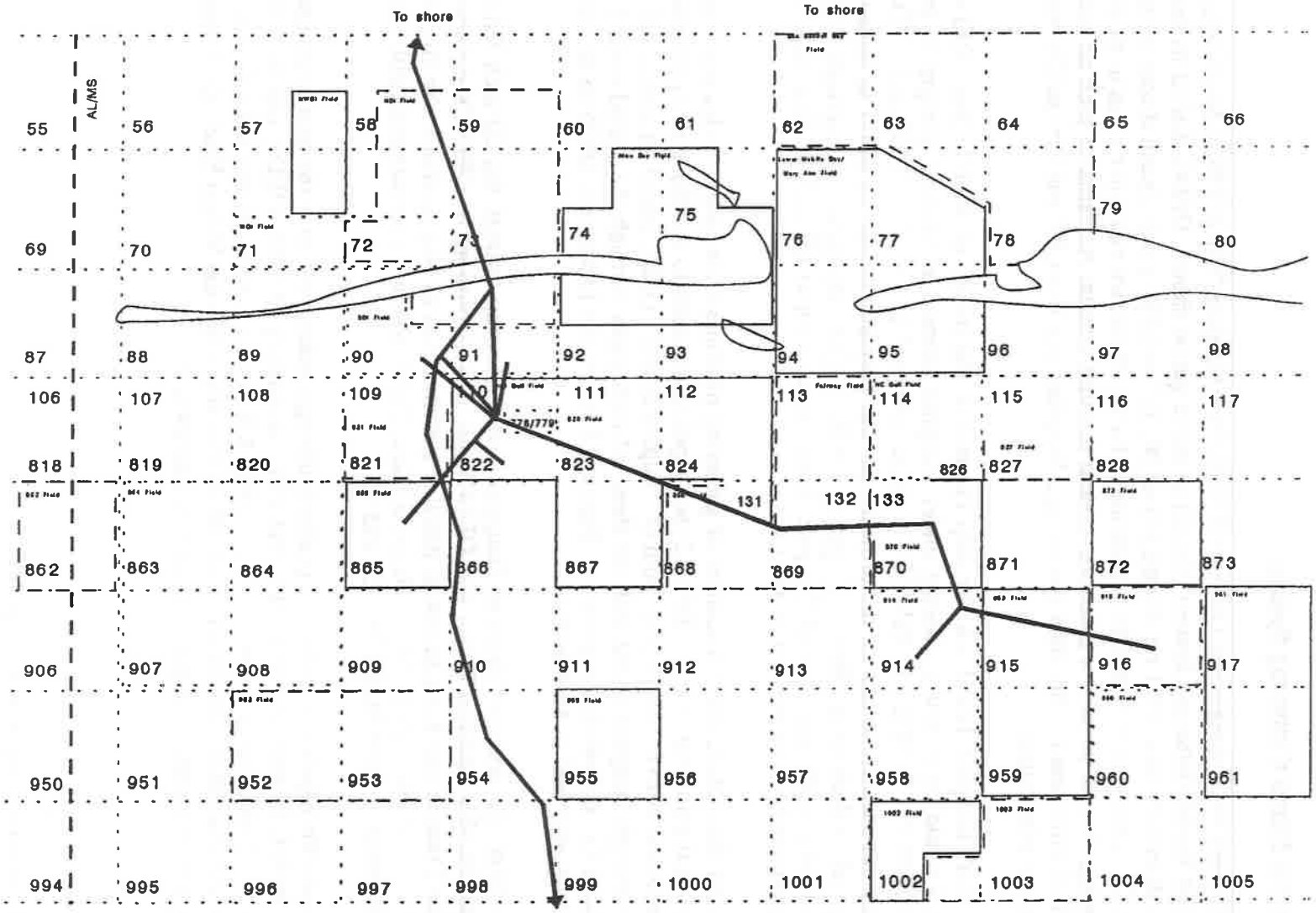


Figure 4.2. Dauphin Island Gathering System.

Source: Foster Associates, 1997.

DIGS current capacity is 400 MMCFD but construction during 1997 increased the DIGP connector capacity from Dauphin Island to the onshore terminus to 450-550 MMCFD, and extend the pipeline south to provide gathering services in Viosca Knoll and Main Pass East Addition areas. The DIGS extension will provide the first northern outlet for gas from the East Central Gulf Area to East Coast Markets. A substantial quantity of gas from the deep water development in the vicinity of Main Pass block 225 will move north over this pipeline by winter 1998. OEDC and partners will operate a NGL plant at the terminus to strip the NGLs from the deep water gas south of Mobile Bay.

4.6.3 Chandeleur Connection

The fields in the western portion of the Mobile OCS are connected to the Mobile Area Gathering System (MAGS), which connects to either the Chandeleur pipeline of Pascagoula, or to Callon's Interstate connector in Mobile County. Chandeleur is a pair of pipelines (one 16-inch and one 12-inch) that extend from the Mississippi shore through the western edge of the Mobile OCS and further south into the Chandeleur OCS. ODECO owns a six-inch gathering system that connects Mobile 955, 954, 953, and 952 to Chevron's "A" platform in Mobile 908. Gathering lines connect Chevron's Mobile 908 "A" platform to wells in Mobile 863 and 908. From Chevron's Mobile 908 "A" platform, gas flows through a 12-inch line to Mobile 861, where it enters a 12-inch spur owned by Chandeleur, travels through Mobile 904, and connects with the Chandeleur pipeline system. Chevron constructed a 12-inch pipeline to connect its Mobil 861 platform with the Chandeleur pipeline system in mid-1995.

4.6.4 Production Start-Up: Miocene

ARCO came on-line with the first Miocene wells producing for the commercial market and became the second producer in Coastal Alabama, following MOEPSI. After drilling three gas wells in 1990 in tracts 71, 72 and 73, ARCO moved to immediately develop their discovery. Like the Norphlet developments, the environmental sensitivity of the Dauphin Island setting was a critical consideration. Ultimately, ARCO applied several innovative technologies to bring the North Dauphin Island and Northwest Dauphin Island Fields into production. Horizontal drilling, not typically used for shallow wells, was used to reduce the number of wells. Pipelines under shorelines were bored to reduce the impacts to wetlands and oyster beds. A special platform design was used to prevent rainwater from coming into contact with the main deck of the platform and then running-off into the Mississippi Sound. Zero discharge was expected of Miocene producers as well as Norphlet producers. Platforms were painted blue and gray to blend into the seascape and lighting was shielded to minimize the visual pollution to near-by onshore vacation homes.[82]

ARCO initiated production in the North Dauphin Island Field (NDI) in December 1991 and in the Northwest Dauphin Island (NWDI) Field in March 1992. ARCO subsequently sold its leases and discovered reserves to Callon and Offshore Group in mid-1993. Table 4.15 summarizes the

[82]R. P. Layfield, K. L. Elser, and R. H. Ostler, "Dauphin Island Natural Gas Project," JPT, January, 1994, p. 63 - 66.

Table 4.15
Summary of Mobile Bay State and Federal Miocene Production
(BCF)

Field	Current Operator	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Cumulative Thru 1997
State												
East Mississippi Sound	Legacy	-	-	-	-	-	-	-	0.1	1.8	0.1	2.0
Goose Bayou	Legacy	-	-	-	-	-	-	-	0.1	1.3	0.1	1.5
North Dauphin Island	Callon	-	-	-	0.2	19.3	15.9	11.1	7.4	3.8	2.1	59.8
Northeast Petit Bois Pass	Offshore Group	-	-	-	-	-	-	0.4	0.1	1.2	0.5	2.1
Northwest Dauphin Islan	Offshore Group	-	-	-	-	0.6	0.9	2.0	1.2	0.9	0.6	6.2
South Dauphin Island	SCANA	-	-	-	-	-	0.6	3.5	2.6	1.5	0.7	8.9
Southeast Mobile Bay	MOEPSI	0.2	0.1	-	-	-	-	-	-	-	-	0.3
Subtotal State		0.2	0.1	-	0.2	19.9	17.4	17.0	11.5	10.5	4.1	**80.9**
Federal												
Mobile 823	Scana	-	-	-	-	-	2.3	6.8	5.2	3.2	2.1	19.5
Mobile 861	Chevron USA	-	-	-	-	-	-	-	-	0.0	2.0	2.0
Mobile 864	Chevron USA	-	-	-	-	18.8	20.5	18.2	13.8	11.5	8.7	91.5
Mobile 865	Scana	-	-	-	-	-	-	2.9	3.4	2.8	1.5	10.6
Mobile 866	Scana	-	-	-	-	-	-	0.9	0.9	1.0	0.6	3.4
Mobile 870	Enron	-	-	-	-	-	-	1.1	4.7	5.3	5.6	16.7
Mobile 914	Enron	-	-	-	-	-	-	1.0	2.5	1.5	0.7	5.6
Mobile 945	Apache	-	-	-	0.1	1.1	0.8	0.6	0.5	0.2	0.1	3.5
Mobile 947	Apache	-	-	-	0.1	1.9	1.6	1.0	1.1	0.9	0.6	7.3
Mobile 952	Murphy	-	-	-	-	0.8	1.1	1.0	1.0	1.3	3.4	8.6
Mobile 955	Murphy	-	-	-	-	1.0	1.4	1.2	1.1	1.0	0.9	6.7
Mobile 959	OEDC/Unocal	-	-	-	-	-	-	-	4.9	3.1	1.4	9.5
Mobile 959	OEDC	-	-	-	-	-	-	-	0.9	0.6	0.4	1.9
Mobile 961	Unocal	-	-	-	-	-	-	-	1.4	1.3	0.8	3.5
Mobile 990	Apache/Enron	-	-	-	0.4	4.3	3.9	2.9	2.5	1.8	1.2	16.9
Subtotal Federal		-	-	-	0.6	27.9	31.7	37.5	44.0	35.4	30.0	**207.1**
Total Miocene Production		**0.2**	**0.1**	-	**0.8**	**47.8**	**49.0**	**54.5**	**55.5**	**45.9**	**34.1**	**288.0**

Source: AL Oil and Gas Board, 1997; Dwights/PI, 1997; US DOI MMS, 1998.

production from fields by current operators. ARCO's production from the North Dauphin Island Field averaged 53 MMCFD in 1992 while the Northwest Dauphin Island Field produced less than 2 MMCFD. The NDI production rate and the amount of gas produced through year end 1996 is uncharacteristically high for a Miocene structure. No other State of Alabama Miocene field has produced such a quantity of gas, or produced at such a high rate.

Inspection of Table 4.15 shows another Miocene field in the OCS with comparably high and sustained production. Miocene 864 Field hit 56 MMCFD in 1993 and has produced 83 BCF at year end 1996. Chevron's tract 864 is immediately contiguous to Murphy's tract 908 which was an unsuccessful Norphlet play. The unusually high and sustained Miocene production rate from tract 864 may be the gas missing from the "very good" Norphlet sands Murphy probed with 908-2 and two sidetracks.[83] If so, not all Coastal Alabama Miocene gas is necessarily biogenic in origin. If the high production from 864 and NDI may be Norphlet in origin, the distinctive H_2S signature present in all other Norphlet gas is missing. Wellstream analysis of the state NDI wells shows that they are 98 - 99 percent methane, with Nitrogen being the second largest component.

Production stepped-up annually through 1995 from Coastal Alabama Miocene fields after DIGS was in place. Figure 4.3 shows the production through 1997 from the state and federal Miocene fields. Production from the producing Miocene reservoirs appears to be in decline. Table 4.15 shows that through year end 1997 Miocene production totalled 288 BCF.

[83]Telcon with Murphy exploration manager, May 16, 1997.

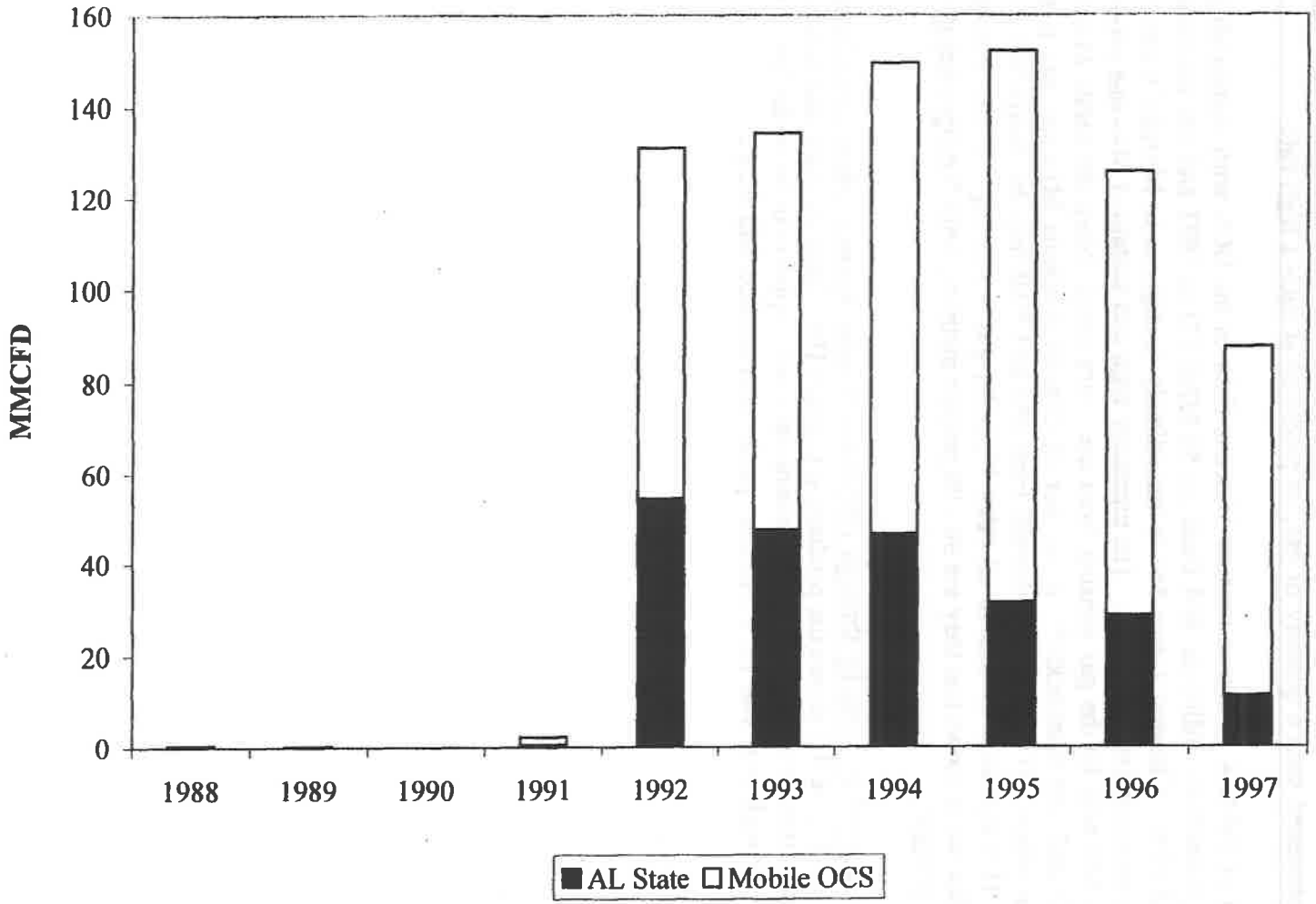


Figure 4.3. Summary of Mobile Bay State and Federal Miocene Production.

Source: AL Oil & Gas Board; Dwights/PI; MMS, 1998

5.0 State Field Definitions from AOGB Dockets[81]

Companies file substantial information with the AOGB as required by State of Alabama regulations. The following subsections report selected information about their reservoirs submitted by Exxon, MOEPSI and Shell. The purpose of the section is to show how the predominantly northwest-southeast trending eolian sandstone Norphlet reservoirs appear and how faults define the areal extent of the reservoirs. Similar information for federal fields is not available.

5.1 Exxon Bon Secour Bay Field

Exxon's Bon Secour Bay was named and defined by AOGB Order 85-345 in Docket 12-19-85. Tracts 62, 63 and 64 were originally included in the field. This was amended to include tract 78 and the northeast corner of tract 77 on April 15, 1992. Mr. Jeff Durrant appeared for Exxon with attorney Tom Watson to revise the field limit as shown on Figure 5.1; i.e., to incorporate the segment of tract 77 northeast of the fault shown on Figure 5.2, 1306 acres in total that do not contain Mobil's Mary Ann reservoir, and do contain the Bon Secour Bay reservoir. Mr. Durrant testified that four wells had been drilled into the reservoir from each of Exxon's tracts. Exxon's well locations can be seen on Figure 5.1. Mobil's eight existing 1992 Mary Ann Field wells are also shown. Figure 5.2 shows that the wells in tracts 63 and 78 are on either side of the top of the reservoir structure, which follows the fault that runs northwest to southeast from tract 63 to 78. The fault, which is also visible on MOEPSI's exhibits, seals the Mary Ann Field and separates it from the Bon Secour Bay Field. Exxon testified that "the most orderly and efficient development of the . . . revised formation will avoid the drilling of unnecessary wells, . . . prevent waste, and . . . protect the coequal and correlative rights of all unit owners."[82]

Two east-west trending faulted salt anticlines, which are the traps for natural gas in the field, can be seen on Figure 5.2. Average net pay in the field is 136 feet. Reservoir sandstones are interpreted as eolian. Porosity averages 12 percent and permeability varies from <0.01 to up to 44.6 md. While truncated on the west border of Exxon's tract, the reservoir can be inferred to extend west to tract 61, which Mobil leased in 1993 for $1.5 million in bonus payment.

5.2 Exxon North Central Gulf Field

Exxon's North Central Gulf Field was named and defined by AOGB Order 86-239 in Docket 9-5-86. Tracts 114, 115, 116, and 117 were included in the field. Witnesses appearing for Exxon with attorney Tom Watson testified that the four tracts are underlain by a continuous geologic structure on the Norphlet Formation with a common gas pool. This is shown on Figure 5.3. Well 115-1 was the discovery well for this reservoir at a measured depth of 21,456 feet.

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[81]These descriptions draw from company sponsored testimony at the AOGB and from Bulletin 140 of the AOGB. Mink, Robert M., Berry Tew, Steven Mann, Bennett Bearder, and Ernest Mancini, "Norphlet and Pre-Norphlet Geologic Framework of Alabama and Panhandle Florida Coastal Waters Area and Adjacent Federal Waters Area," AOGB Bulletin 140, 1990.

[82]AOGB Docket 4-14-929.

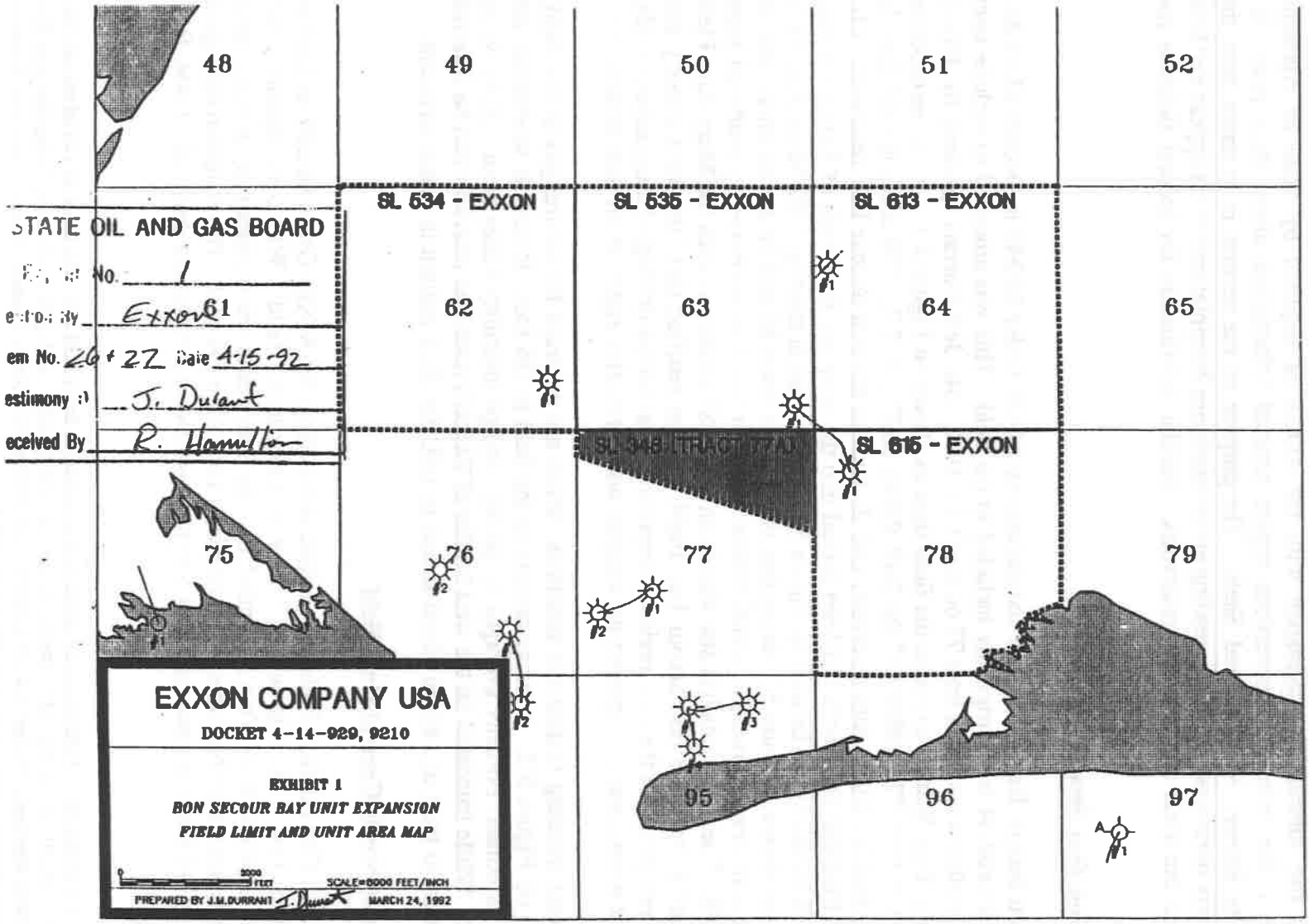


Figure 5.1. Bon Secour Bay Field Limits.

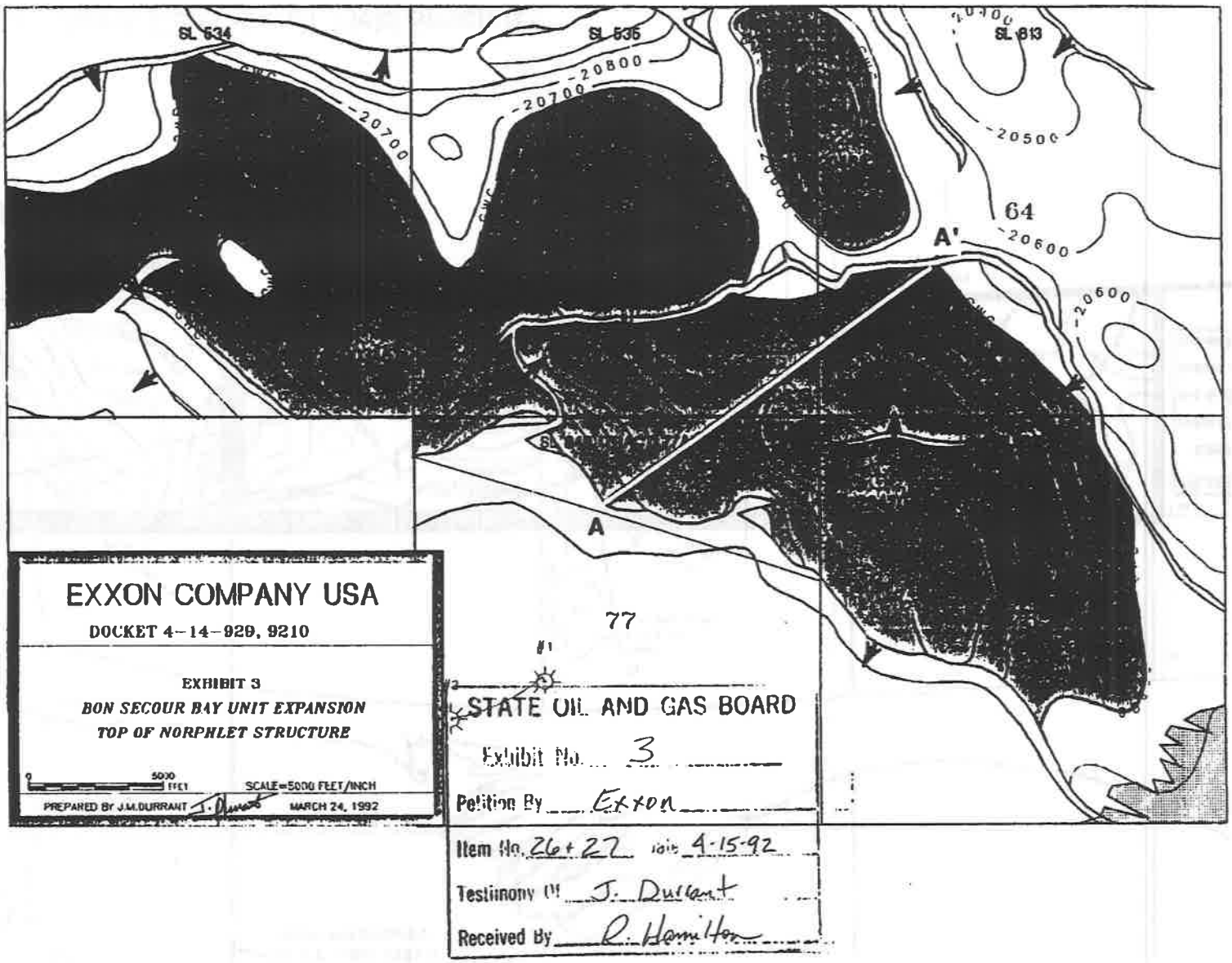


Figure 5.2. Bon Secour Bay: Top of Structure.

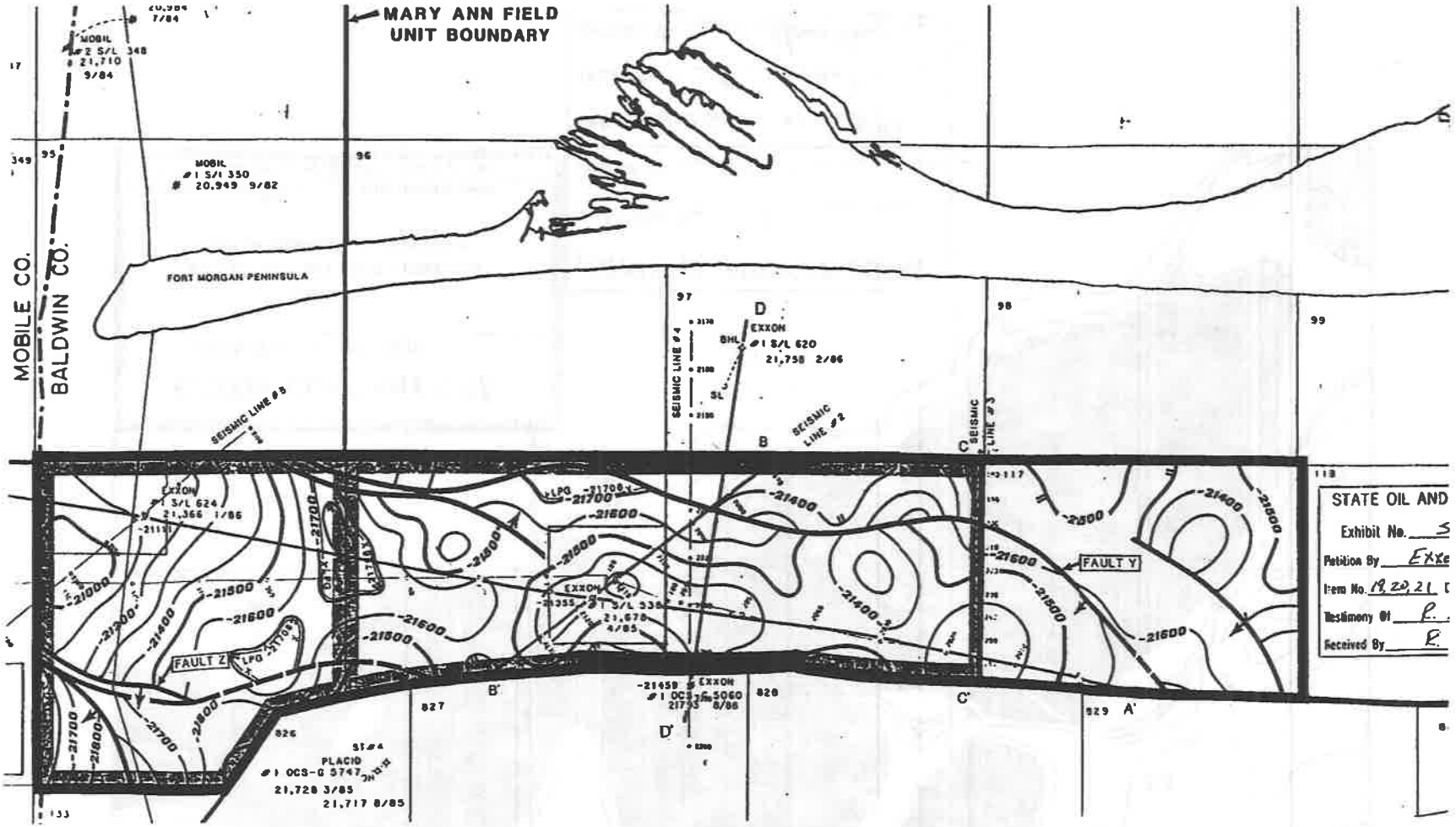


Figure 5.3. North Central Gulf Field Structure.

The Exxon witness testified that the gas reservoir on OCS tract 827 is a part of the same reservoir underlaying tracts 114 and 115. The reservoir is defined on the southwest of tract 114 by the fault labelled Fault Z. The fault can be seen running into tract 113, Shell's lease. Placid's well in OCS tract 826 was water bearing proving that Fault Z seals the reservoir on the south. The northern edge of the reservoir is defined by Fault Y on Figure 5.3. Well 97-1 north of the fault was water bearing, proving that the reservoir is sealed by Fault Y, which also seals the eastern edge of the reservoir.

The hydrocarbon trap in the field is the elongated east-west trending salt anticline, truncated on the north and east by Fault Y, which extends northwesterly into Mobil's tract 95. The Norphlet formation is thinner in the North Central Gulf than in the other offshore Norphlet fields, ranging from 120 to 160 feet. Eolian dune sandstone comprises the depositional environment.

The wellstream analysis shows that Exxon's North Central Gulf Field produces gas with carbon dioxide concentrations typical to other local Norphlet fields, but with much lower in H_2S concentration than the Bon Secour Bay and Lower Mobile Bay Fields—between 300 and 650 ppm as shown on Table 5.1. This proves that the field is not in contact with the reservoir in the contiguous Mary Ann Field. Exxon testified that the gas in tract 112 contained 40 times higher concentration of H_2S than measured in tracts 114 and 115.

Table 5.1
Exxon Wells 115-1 & 114-1 Full Wellstream Analyses

Component	S/L 538 No. 1 Tract No. 115	S/L 625 No. 1 Tract No. 114
Methane	87.8094	81.6009
Ethane	5.1768	8.1108
Propane	1.8705	4.0283
iso-Butane	0.5377	1.2805
n-Butane	0.3583	0.8869
iso-Pentane	0.1110	0.3143
n-Pentane	0.0436	0.1245
iso-Hexane	0.0065	0.0366
n-Hexane	0.0034	0.0178
Heptanes Plus	0.1015	0.2750
Hydrogen Sulfide	0.0030	0.0065
Nitrogen	0.1375	0.1597
Carbon Dioxide	3.8408	3.1582
	100.0000	100.0000

Source: Alabama Oil and Gas Board, Exhibit 14, Petition by Exxon, Item No. 19,20,21 dated 9-4-86.

In 1993, Exxon returned to AOGB to propose that the North Central Unit be partitioned into a 114 Unit and a 115/116 Unit. The proposed 114 Unit is shown on Figure 5.4 to include tract 114 and the northeast corner of tract 113. Exxon witness Martin Fleckenstein testified that the "Tract 114 gas reservoir is separated from the North Central Gulf Unit consisting of Tracts 115 and 116 by an interdune area with no reservoir sand present."[83] Exxon's 114 wells are shown as well as Shell's five producing wells.

Figure 5.5 shows the reservoir structure underlaying tracts 113 and 114. Sealing faults in tract 113 and on the northeast of 114 are described as defining the reservoir structure. Figure 5.5 does not depict the extension of the structure into MOEPSI's tract 95, but no indicated sealing fault is shown. Figure 5.6 depicts the deposition of the sands that typically form the Norphlet structures. The darker areas represent the thicker sand; the white area represents the interdunal area in which Exxon's well 114-1 found gas that flowed at only 1.2 MMCFD in 1985. The witness stated "The Norphlet formation in the Mobile Bay area including the tract 114 Unit was deposited as large linear dunes in a desert environment. These sand dues consisted of thick parallel sand bodies oriented northwest to southeast that were separated by thin interdune areas. This depositional style is responsible for the characteristic thick-thin geometry of the Norphlet in the Mobile Bay area including tract 114."[84]

5.3 Exxon Northwest Gulf Field

The Northwest Gulf Field was named and defined by AOGB Order 86-269 in Docket 11-21-86 to include tracts 110, 111, 112 and 131. It was amended to exclude tract 110 in Docket 9-19-873. Testimony in the 1987 docket showed that tracts 111, 112 and 131 are underlain by a common Norphlet gas pool. Well 112-1 was tested December 1984 at 21,500 feet as the discovery well. Figure 5.7 shows the common structure that underlies the three tracts but does not show structural interpretation on other operators' (Mobil and Shell) adjacent leases, although the structures can be inferred to extend into OCS 823. The structural interpretation extends into Exxon's then-owned tracts 90, 91 and 92 to show the fault complex that separates the Northwest gas pool from areas to the north. Exxon well 91-1 encountered water north of Fault Y which is visible on the figure proving that the fault defines the northern boundary of the gas pool under 111 and 112.

The hydrocarbon trap is an east-west trending, faulted salt anticline. The dune sandstone in the reservoir is predominantly eolian deposition with an average thickness of about 400 feet.

5.4 Shell Fairway Field

AOGB Order 86-280, Docket 11-21-86, established the Shell Fairway Field consisting of tracts 113 and 132. Testimony in Docket 12-13-90165 by Mr. R. J. Stancliffe described the basis for the unitized area of the revised Fairway Field. Figure 5.8 shows the location of the structures underlaying tracts 113 and 132 along with wells drilled and proposed in 1990. Figure 5.9 shows

[83]AOGB Docket 11-9-937, p. 287.

[84]AOGB Docket 11-9-937, p. 295.

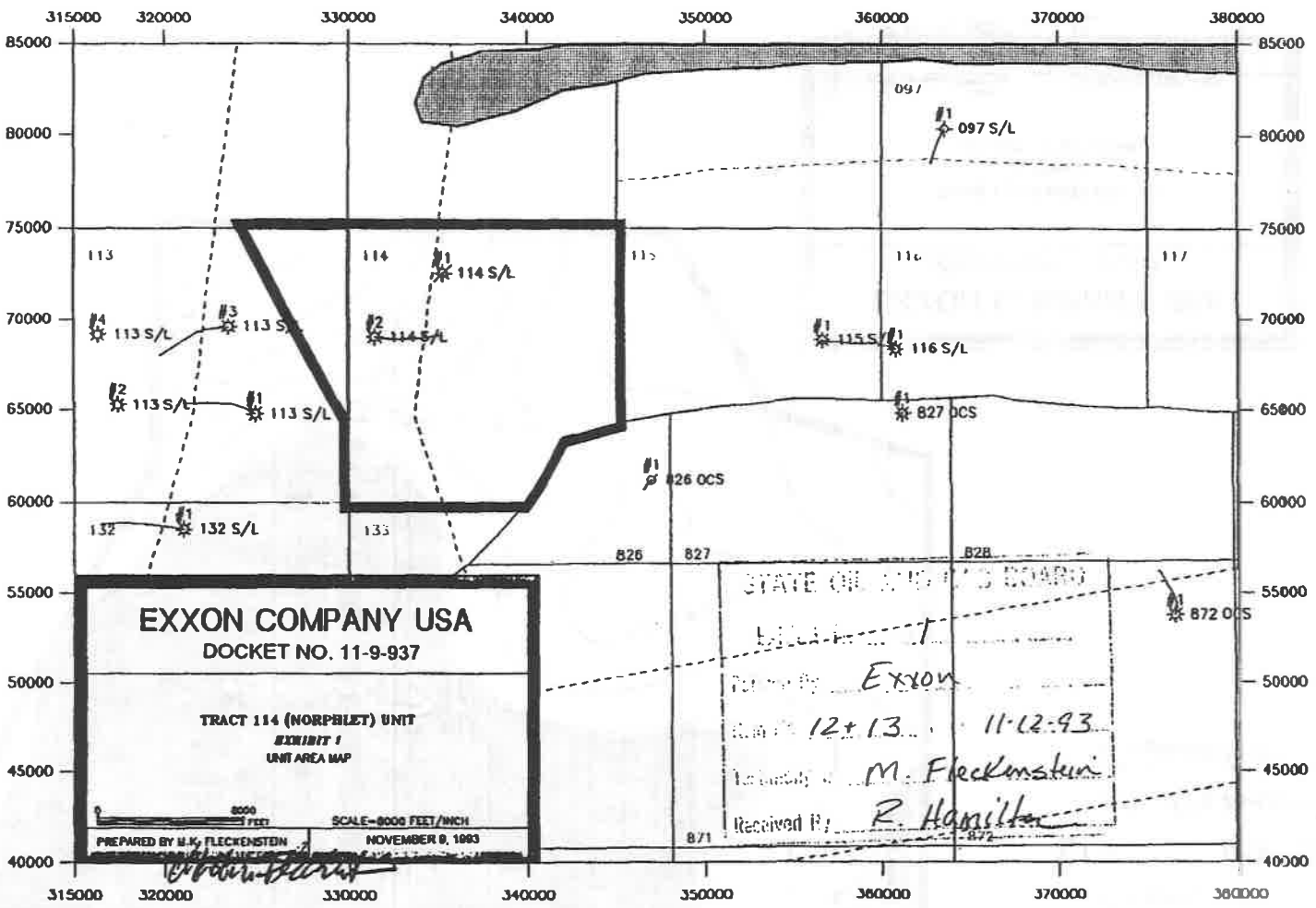


Figure 5.4. Exxon Tract 114 Unit Expansion.

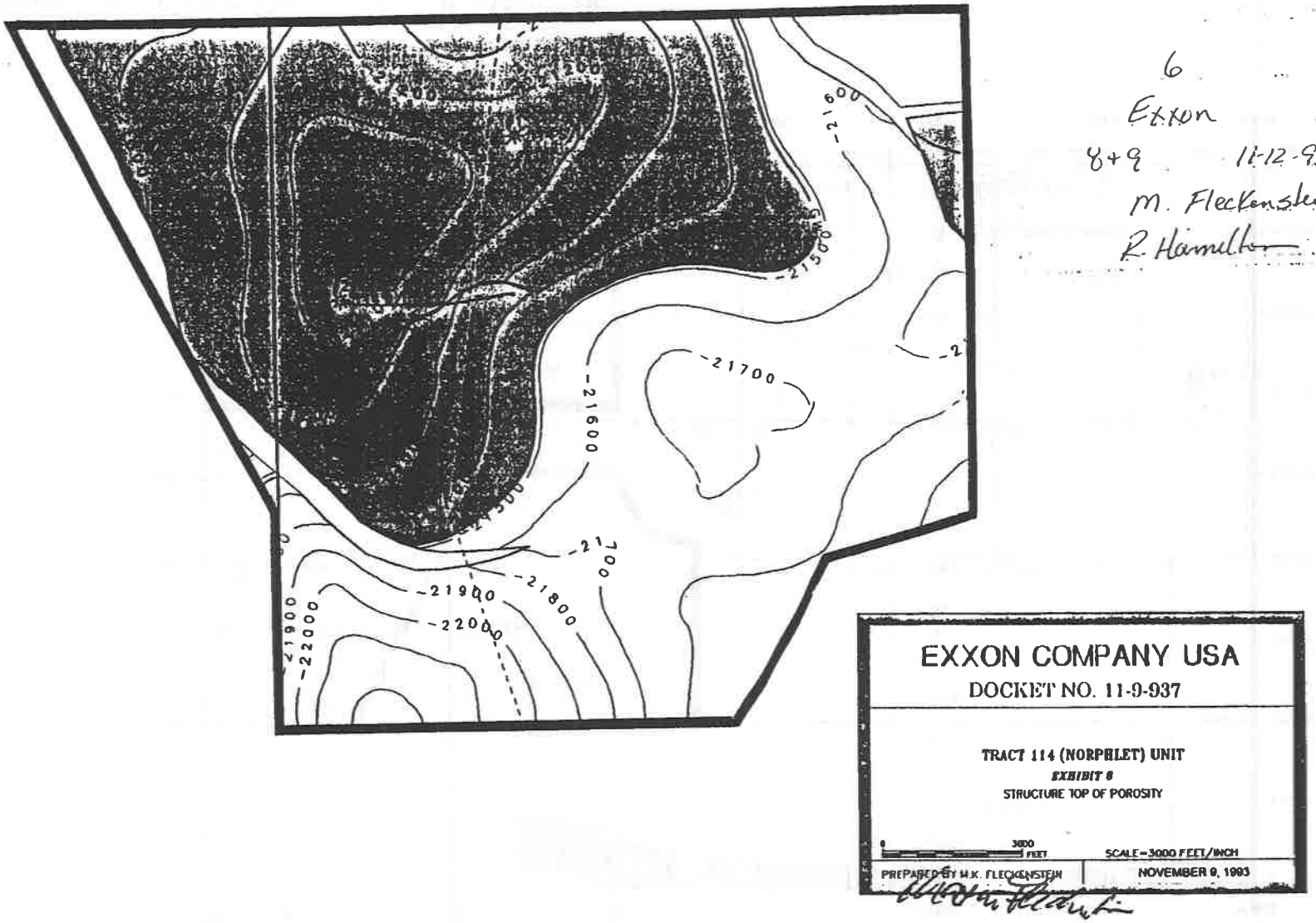


Figure 5.5. Exxon Tract 114 Reservoir Structure.



STATE OIL AND GAS BOARD
7
EXXON
12+13 11-12-93
M. Fleckenstein
P. Hamilton

EXXON COMPANY USA
DOCKET NO. 11-9-937
TRACT 114 (NORPHLET) UNIT
EXHIBIT 7
GROSS NORPHLET ISOPACH
3000 FEET
SCALE = 3000 FEET/INCH
PREPARED BY M.K. FLECKENSTEIN
NOVEMBER 8, 1993

Figure 5.6. Exxon Tract 114 Reservoir Dunes.

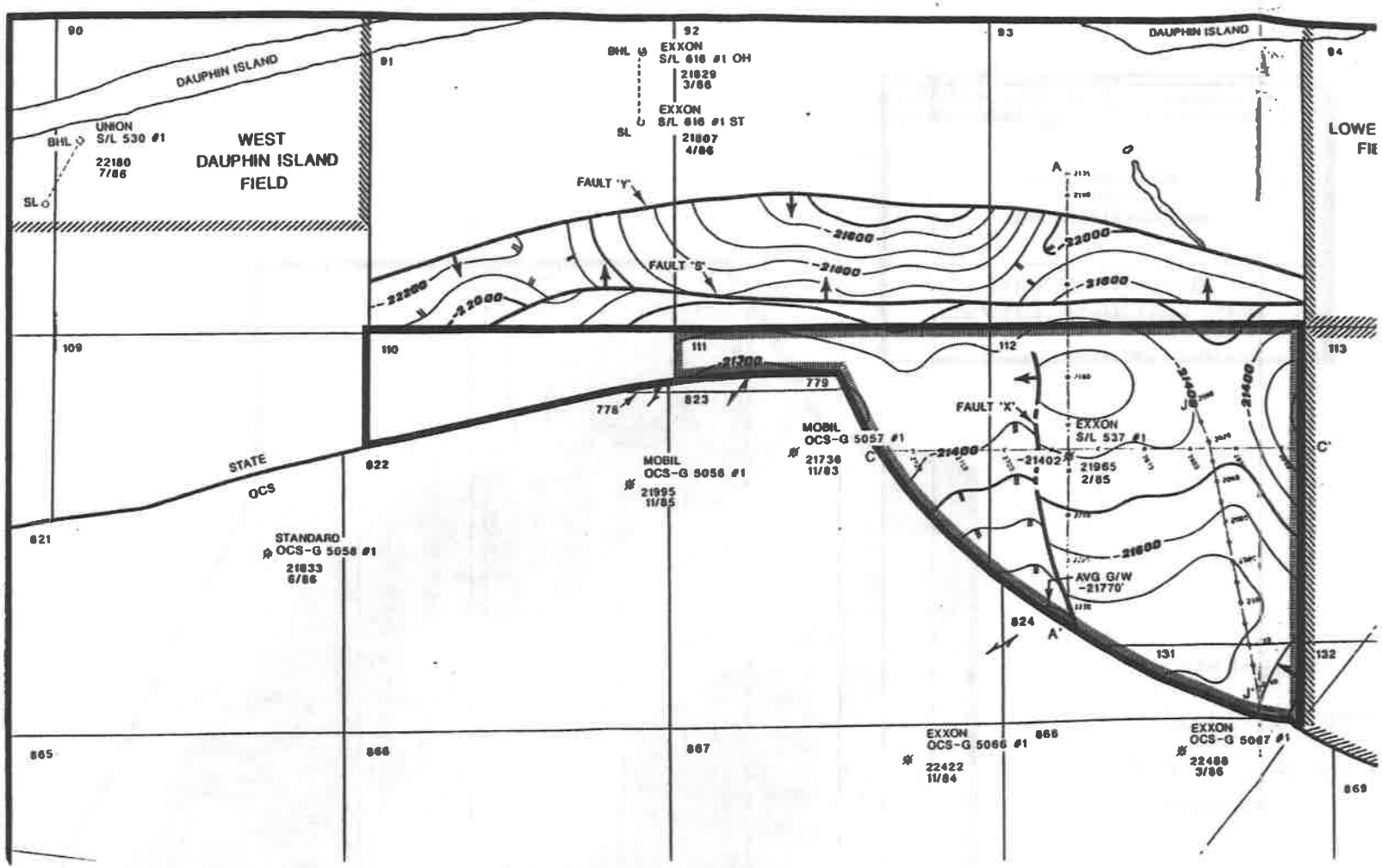


Figure 5.7. Exxon Northwest Gulf Structure.

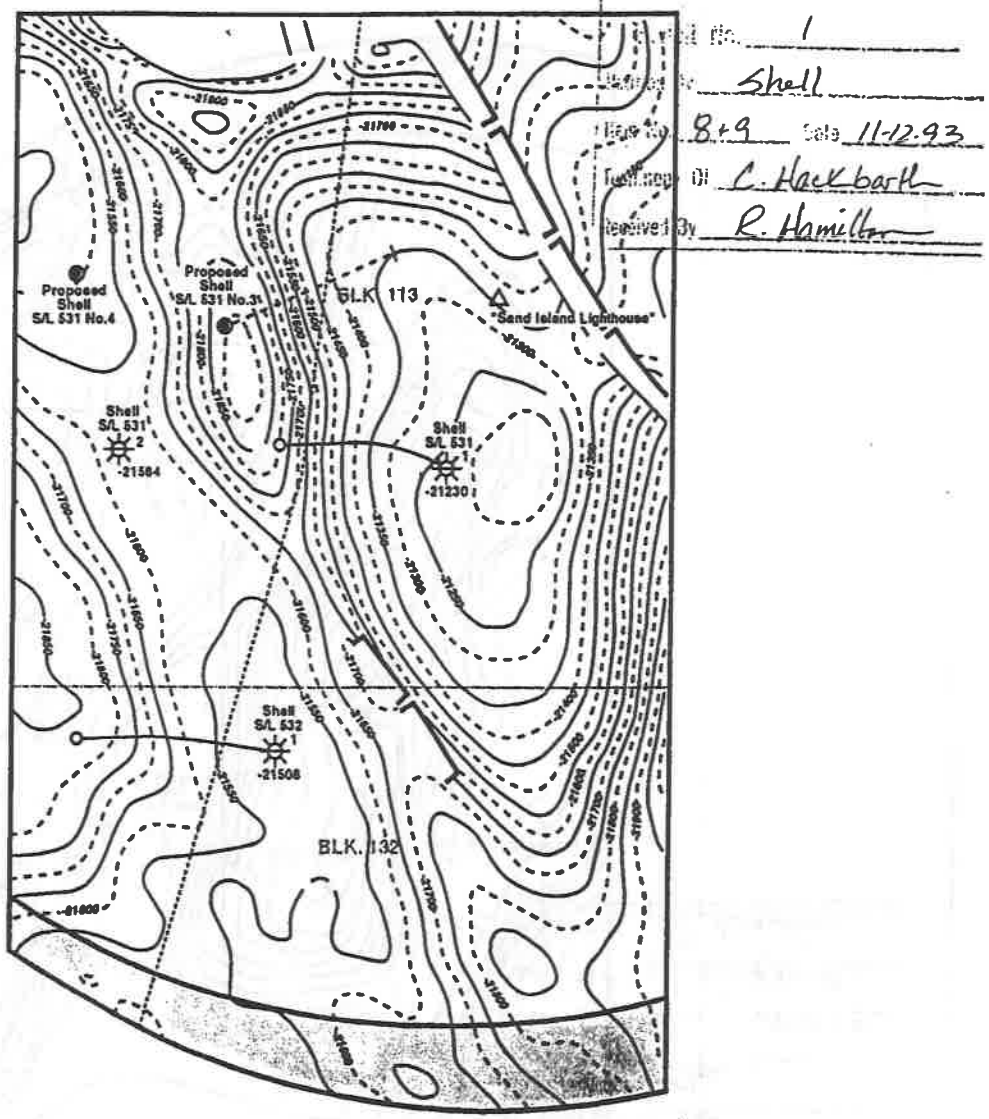


Figure 5.8. Shell Fairway Field Structure.

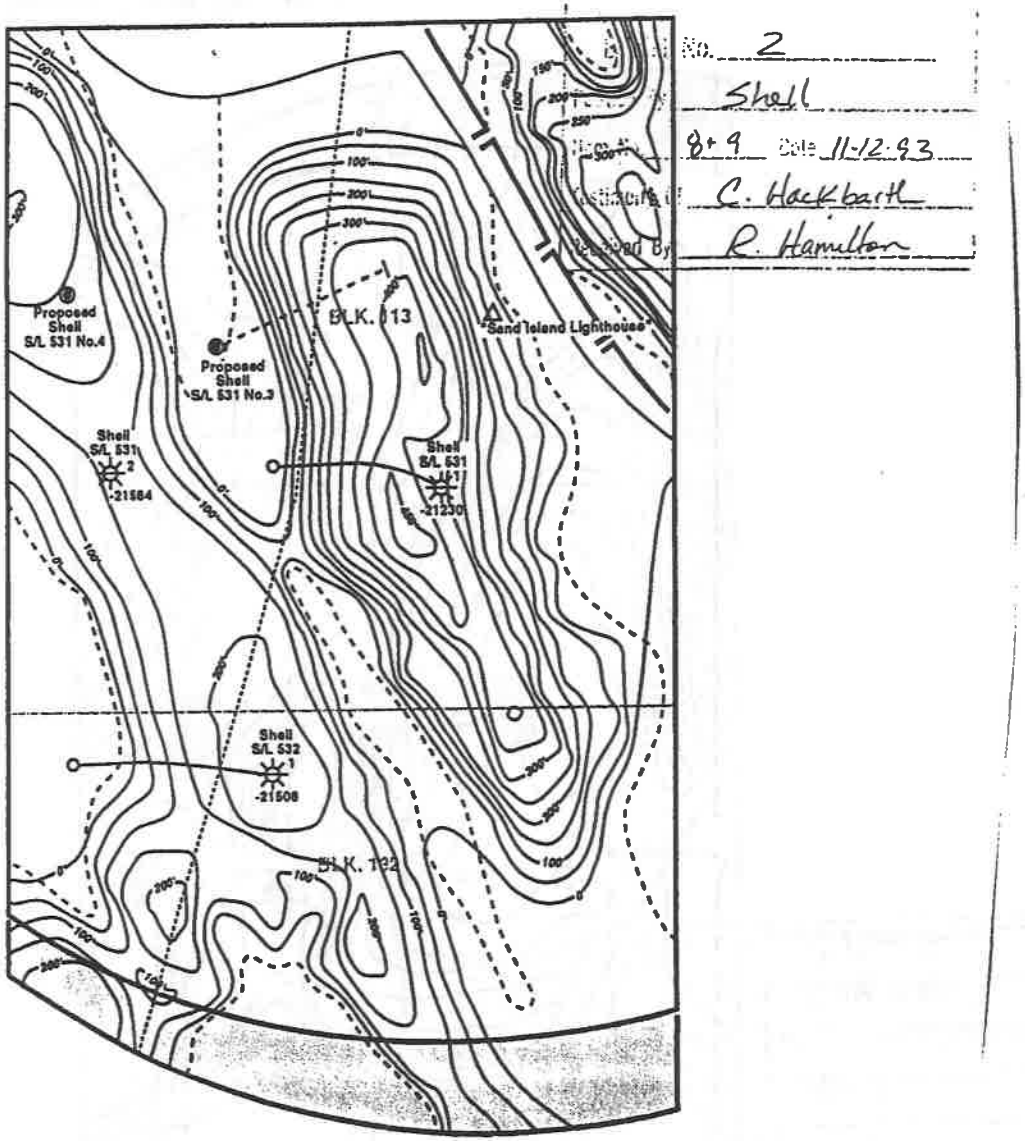


Figure 5.9. Shell Fairway Field Dunes.

that tracts 113 and 132 "consist of two Norphlet pods of varying thicknesses which extend into and across both tracts. . . . [T]he Norphlet has very good reservoir characteristics both in terms of porosity and permeability . . . [and] excellent lateral continuity which we feel equates to an extensive per well lateral drainage capability."[85]

The fault that separates the Fairway Field Unit from the 114 Unit is visible on Figure 5.8. Shell's witness stated that the bottomhole pressures between the 113-1 and the 114-1 differ by greater than 2000 psi, suggesting different reservoir accumulations. The witness also stated that a large fault located along the northern border of tract 113 separates Shell Fairway from the Mary Ann Field. The hydrocarbon trap in the Fairway Field salt anticline trends northwest-southeast.

Mr. Len Falsone testified that Shell intended to develop the field with five wells producing 40 MMCFD each beginning in the fall of 1991. These flow rates were thought to be high but consistent with reservoir properties and comparable data from Mobil tract 823-3 well which was tested at 62 MMCFD in 1990.

In 1993, Shell appeared with Exxon to confirm that the northeast corner of 113, separated by the fault is in a common Norphlet pool with the Exxon 114 Unit. Shell witness Claudia Hackbarth confirmed that the reservoir northeast of the fault in 113 extends to the "adjacent tracts to the north and east leased by Mobil and Exxon,"[86] as shown on Shell Figure 5.10. She further testified that "Exxon's tract 114-2 well will likely drain the entire central pool shown in this cross section."[87] This statement preceded Mobil's well 95-5 into the same reservoir. The location of MOEPSI's well 95-5 (not shown on the figure) in the southwest corner of MOEPSI's tract 95 clearly penetrates the common reservoir.

5.5 MOEPSI Aloe Bay Field

Mobil's Aloe Bay Field was established by AOGB Order 92-17 in Docket 2-6-92 to include tracts 74, 75 and parts of 92 and 93. The field is located west of the Mary Ann Field as shown on Figure 5.11. Mr. Peter Andronaco appeared as Mobil's witness to demonstrate that the Aloe Bay Field was discovered by well 75-1 and underlies much of Dauphin Island as can be seen on Mobil Figure 5.12. Figure 5.13 is the structure map of the Norphlet Formation in the Aloe Bay Field. The two westernmost Mary Ann wells 76-1 and 76-2, the 91-1 well and the Aloe Bay discovery well 75-1 are shown on the figure. The witness explained that "the structure tested by the 75-1 well is a syncline separated from both the Mary Ann Field structure to the east and the Tract 91-1 and 91-1ST wells to the west. . . . The gas-water contact associated with the Tract 75-1 discovery well is distinctly different from the gas-water contacts in the gas accumulation to the east and to the west. The 75-1 contact of 21,012 feet subsea is 133 feet shallower than the water contact in 91-1ST well to the west and 136 feet deeper than the water

[85]AOGB Docket 12-13-90165, p. 405-406.

[86]AOGB Docket 11-9-933, p. 266.

[87]AOGB Docket 11-9-933, p. 268.

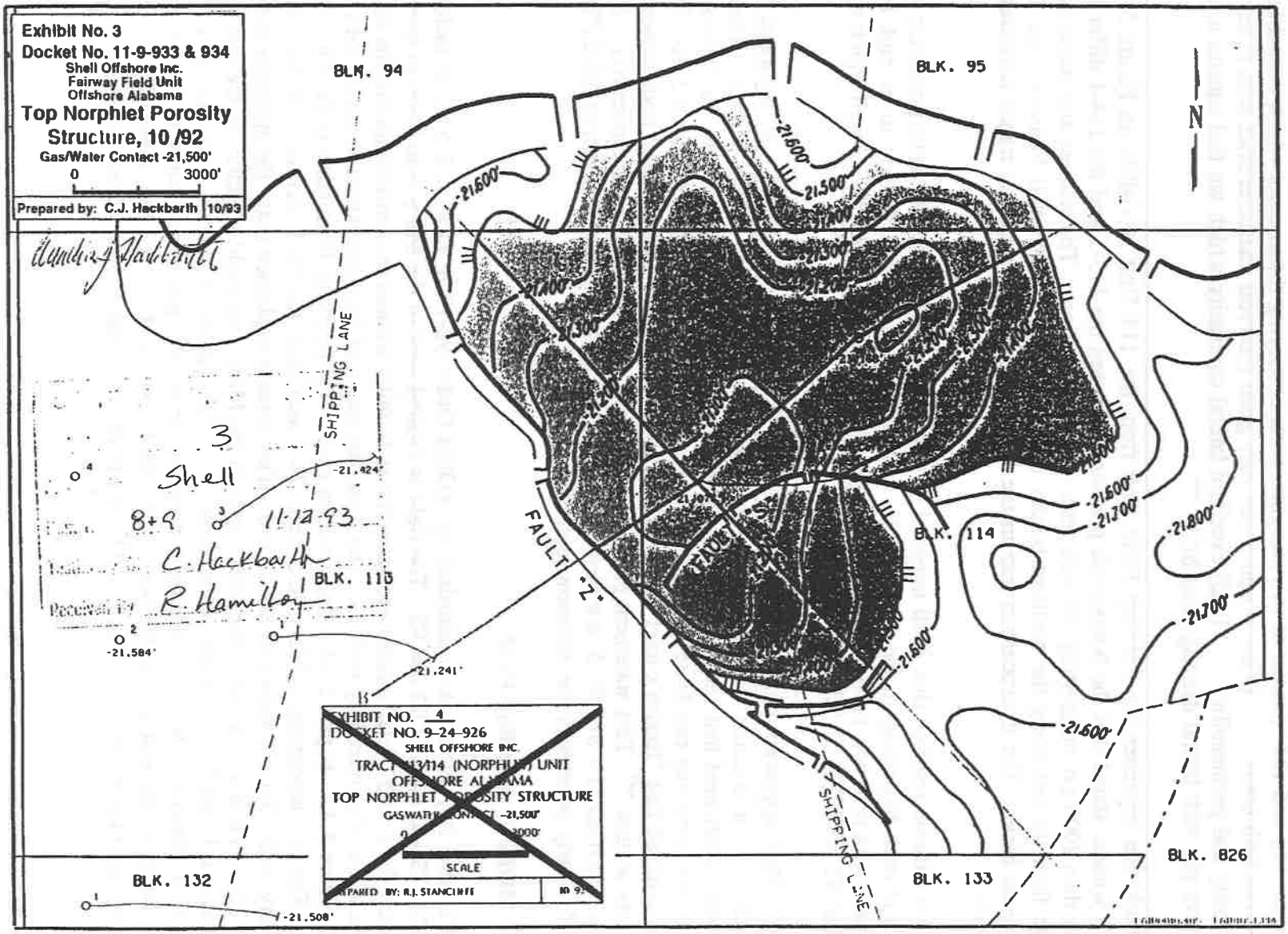


Figure 5.10. Exxon & Mobil Common Structure.

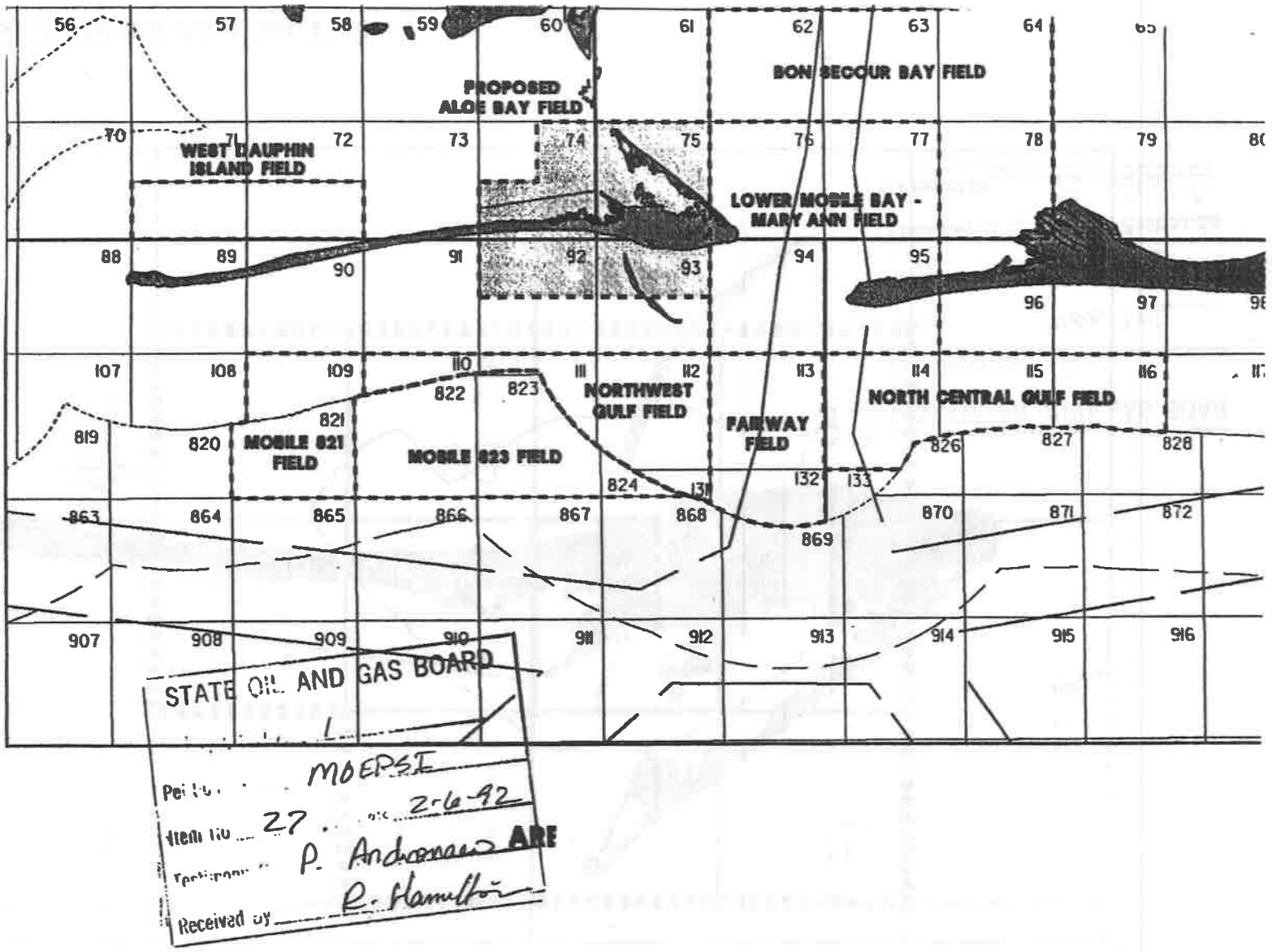


Figure 5.11. Mobil Aloe Bay Field Location.

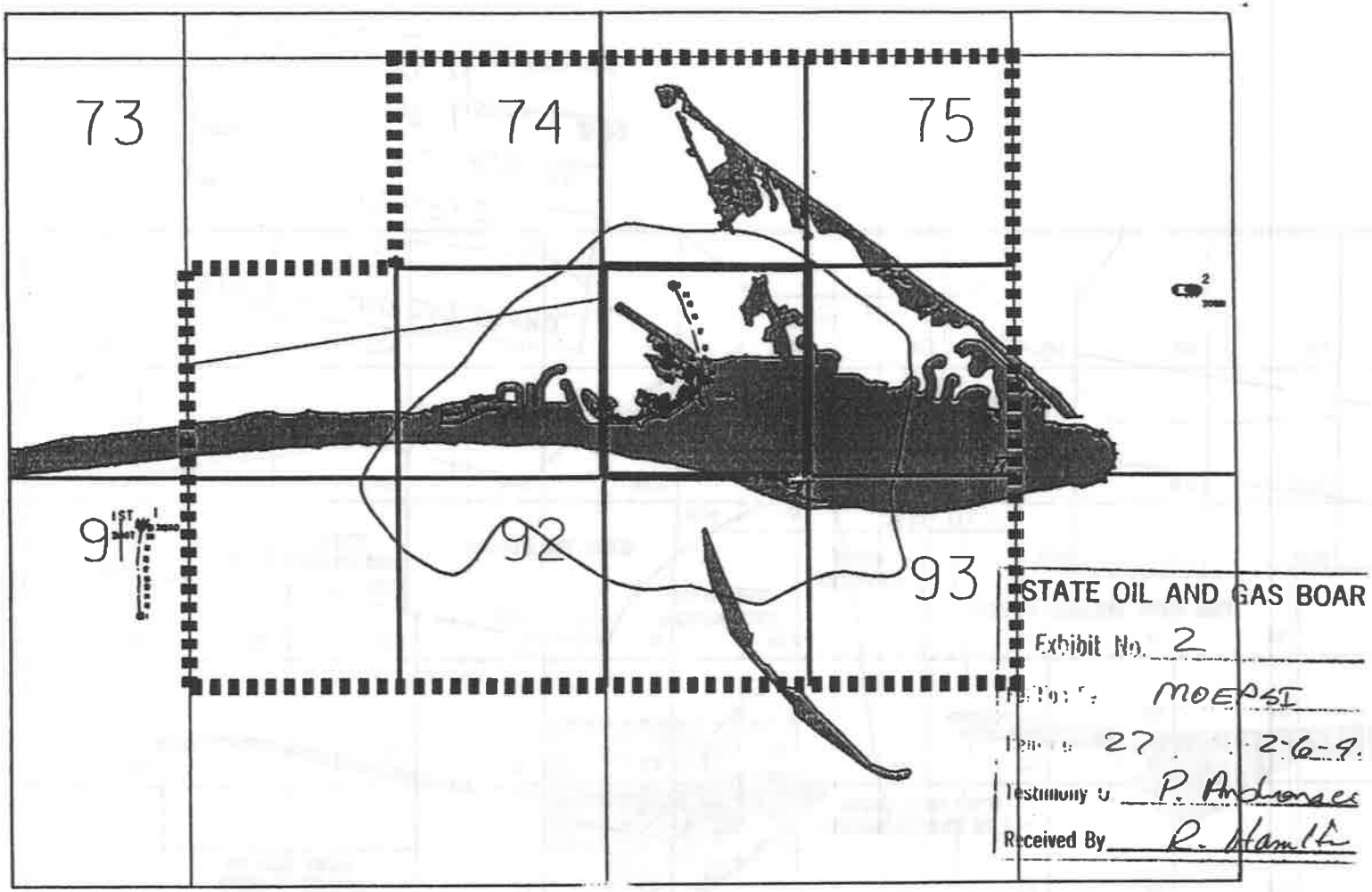


Figure 5.12. Mobil Aloe Bay Field.

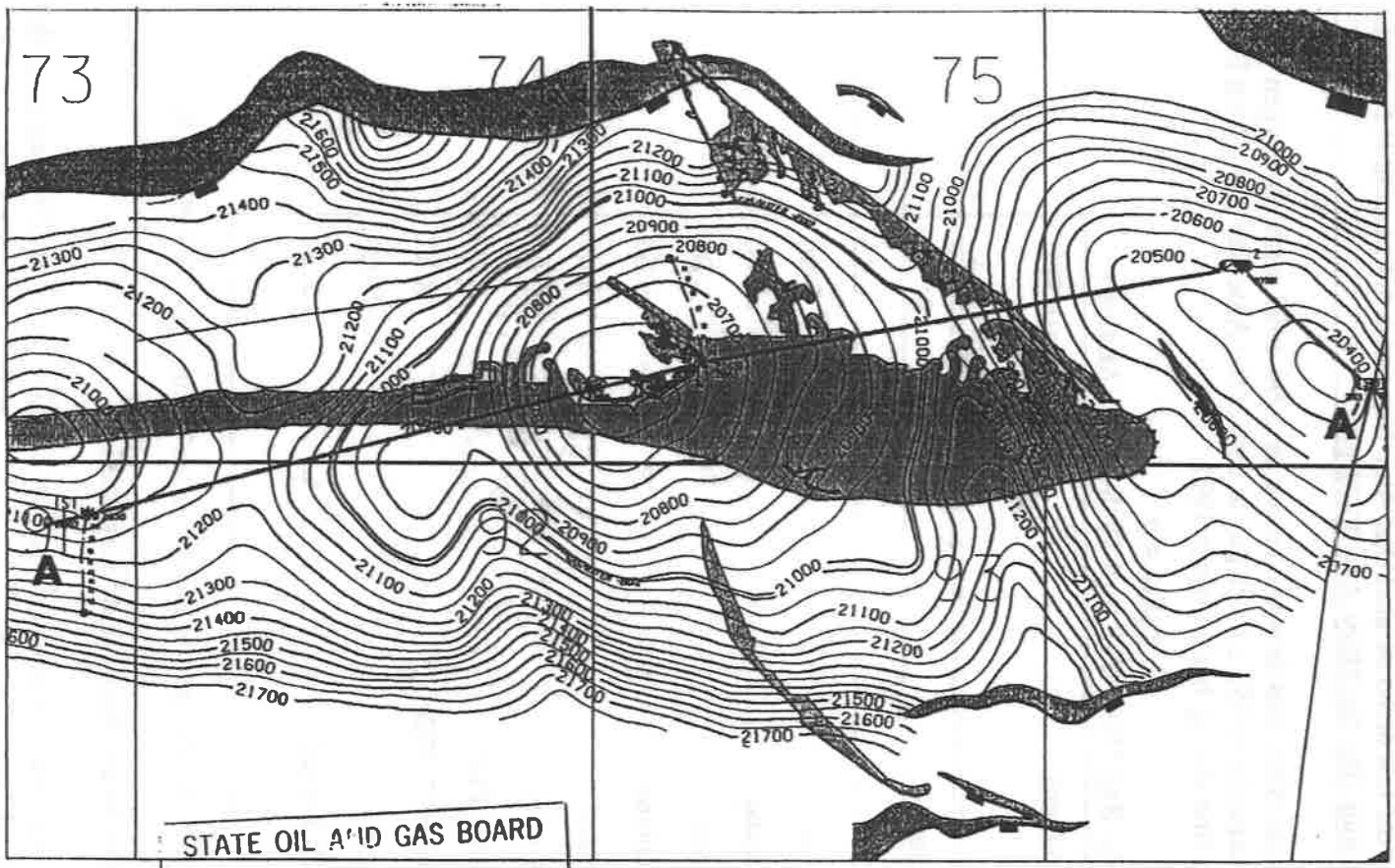


Figure 5.13. Mobil Aloe Bay Top Norphlet Structure.

contact established in the Mary Ann Field to the east. . . . Norphlet gas accumulation in the Aloe Bay Field is separate and distinct from both the Mary Ann Field and the 91 sidetrack."[88]

Full wellstream analysis of the test demonstrated that Aloe Bay gas is 8.4 percent H_2S, as shown on Table 5.2. The gas is sour like the Mary Ann Field gas.

Mobil's Mary Ann Field gas plant was debottlenecked in 1996-1997 with an oxygen plant to double its sulfur handling capacity to 480 LT per day to handle the Aloe Bay gas. Aloe Bay was completed and brought on line during late summer 1997.

Table 5.2
Aloe Bay Well 75-1 Full Wellstream Analysis

Component	State Lease 701 No. 1 Tract 75
Methane	87.13
Ethane	0.16
Propane	0.00
iso-Butane	0.00
n-Butane	0.00
iso-Pentane	0.00
n-Pentane	0.00
iso-Hexane	0.00
Heptanes Plus	0.00
Hydrogen Sulfide	8.37
Nitrogen	1.00
Carbon Dioxide	3.34
	100.00

Source: State Oil and Gas Board, Exhibit 7, Petition by MOEPSI, 2/6/92.

5.6 Lower Mobile Bay—Mary Ann Field: Revisited

Lower Mobile Bay-Mary Ann Field was established by AOGB Order 80-209 and amended to excise the northeast corner of tract 77 on April 15, 1992. Mobil reappeared July 17, 1996 to amend the Special Field Rules to "recognize the existence of the new pool within the unit area . . . a new Norphlet pool in the Mary Ann Unit and Field . . . in the same strata that can be

[88]AOGB Docket 2-6-924, p. 150, 153.

correlated with the Norphlet formation in the State Lease 347 Well [76-1]."[89] Figure 5.14 shows the wells that Mobil has drilled in the four leases. Mobil's witness Bob Jorden described the development of the southern portion of Tract 95 beginning with the spudding of the 95-5 well in July of 1994, which deviated 7400 feet east from a rig located outside the shipping fairway in tract 94. The well was eventually sidetracked to a better location 8100 feet east of the rig reaching total depth in October 1995. Platform 94-C was installed in late 1996 and production began in November 1996.

Figure 5.15 shows the general northwest-southeast trending dune structures that characterize the eolian Norphlet sands that Mobil's witness Mr. Gerald Greiner explained. "Contour intervals illustrate the broad anticlinal nature of the Norphlet . . . reflecting the alternating depositional thins and thicks respectively of the Norphlet interdune and dune areas."[90] The figure also shows the fault to the south of tracts 94 and 95 (Exxon's fault Y shown on Figure 5.3) that separates the Mary Ann Field into two Fault Blocks, labelled "A" and "B." Mr. Greiner made the point that 3-D seismic data were able to produce the figure thereby "clarifying the top and base of Norphlet, enabling accurate characterization of the reservoir [and] profoundly changing the aerial distribution of the Norphlet verses the 1986 map."[91] Figure 5.16 shows the gross isopach map of the Norphlet to illustrate its classic dunal nature with thicks and thins within Mobil's four tracts. Figure 5.17 shows the geologic depth cross section on the Well 95-5 and 95-5ST to emphasize the effects of 3D seismic data on well placement. ". . . [C]onventional 2D seismic could be relied upon to supply information on structural position only. . . . Well locations are now planned to maximize both structural height and stratigraphic thickness."[92] Moving the well 800 feet further east from its original bottomhole location improved porosity from 11.7 percent to 12.8 percent and increased productivity of the well markedly.[93]

The ST well tested 77.3 MMCFD on October 23, 1995. Mobil's witness referred to the gas as "a Norphlet pool previously undiscovered in the Mary Ann Unit" and asked that Special Field Rules be amended to recognize the new pool as included within the Mary Ann Field and Unit.[94]

5.7 State Geologic Structures Summary

Figure 5.18, taken from the Gulf of Mexico Atlas, pulls together AOGB exhibits presented in this section. State Norphlet reservoir tops and wells are depicted as of 1994. No representations of federal areas are available. This structure map shows the magnitude of the state Norphlet area.

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[89]AOGB Docket 7-17-964, p.95-96.

[90]AOGB Docket 7-17-964, p. 119.

[91]AOGB Docket 7-17-964, p. 119.

[92]AOGB Docket, 7-17-964, p. 123.

[93]AOGB, Docket 7-17-964, p. 131.

[94]AOGB Docket 7-17-964, p. 144.

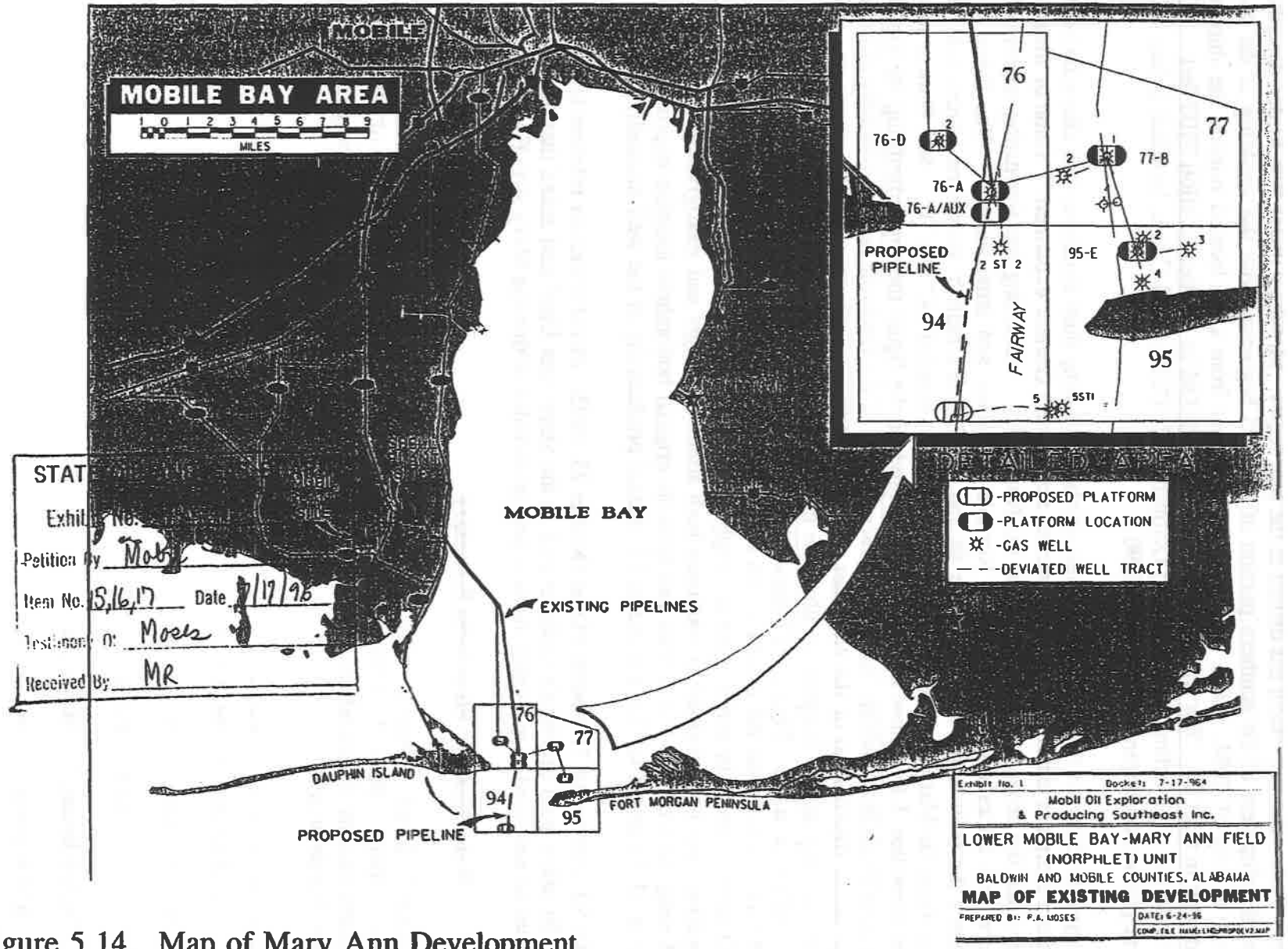


Figure 5.14. Map of Mary Ann Development.

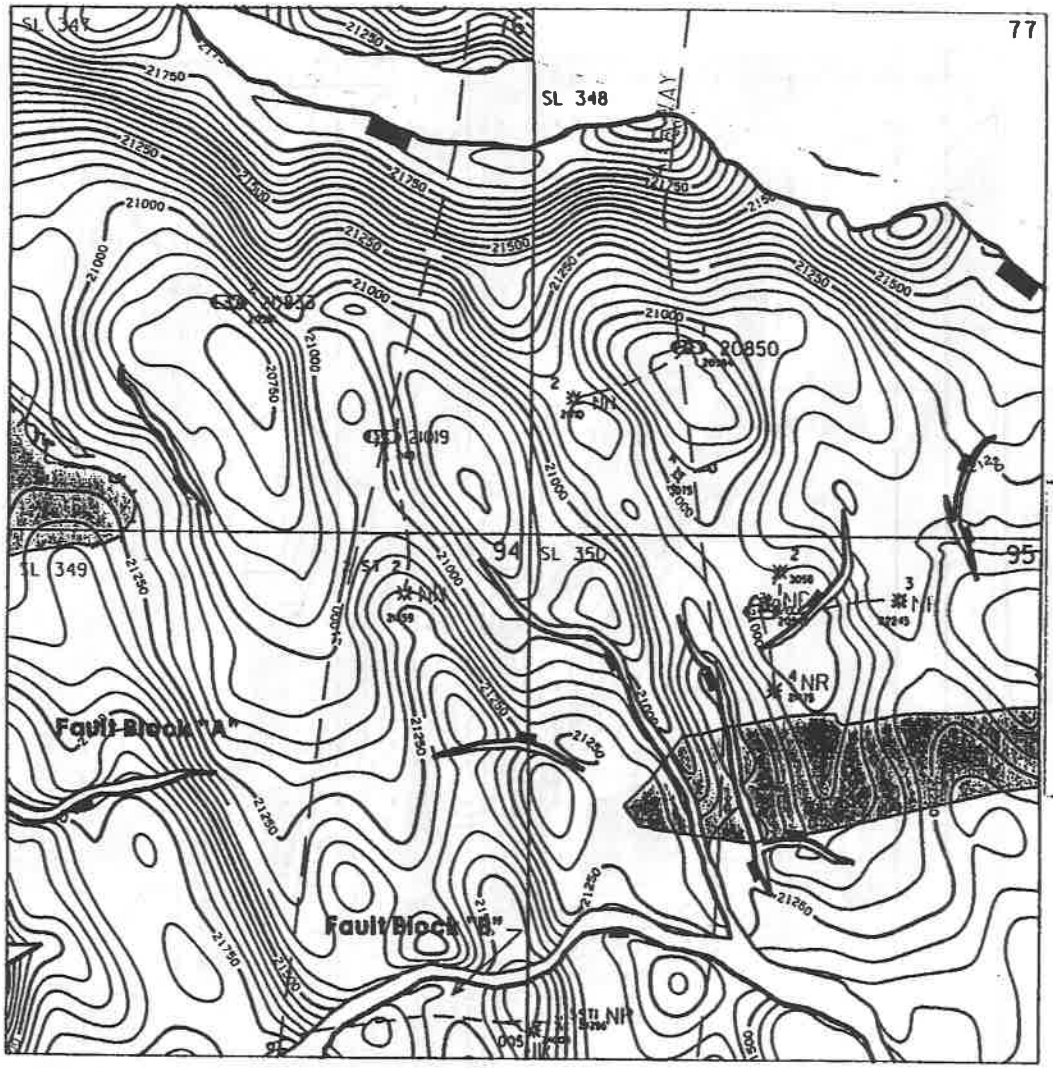
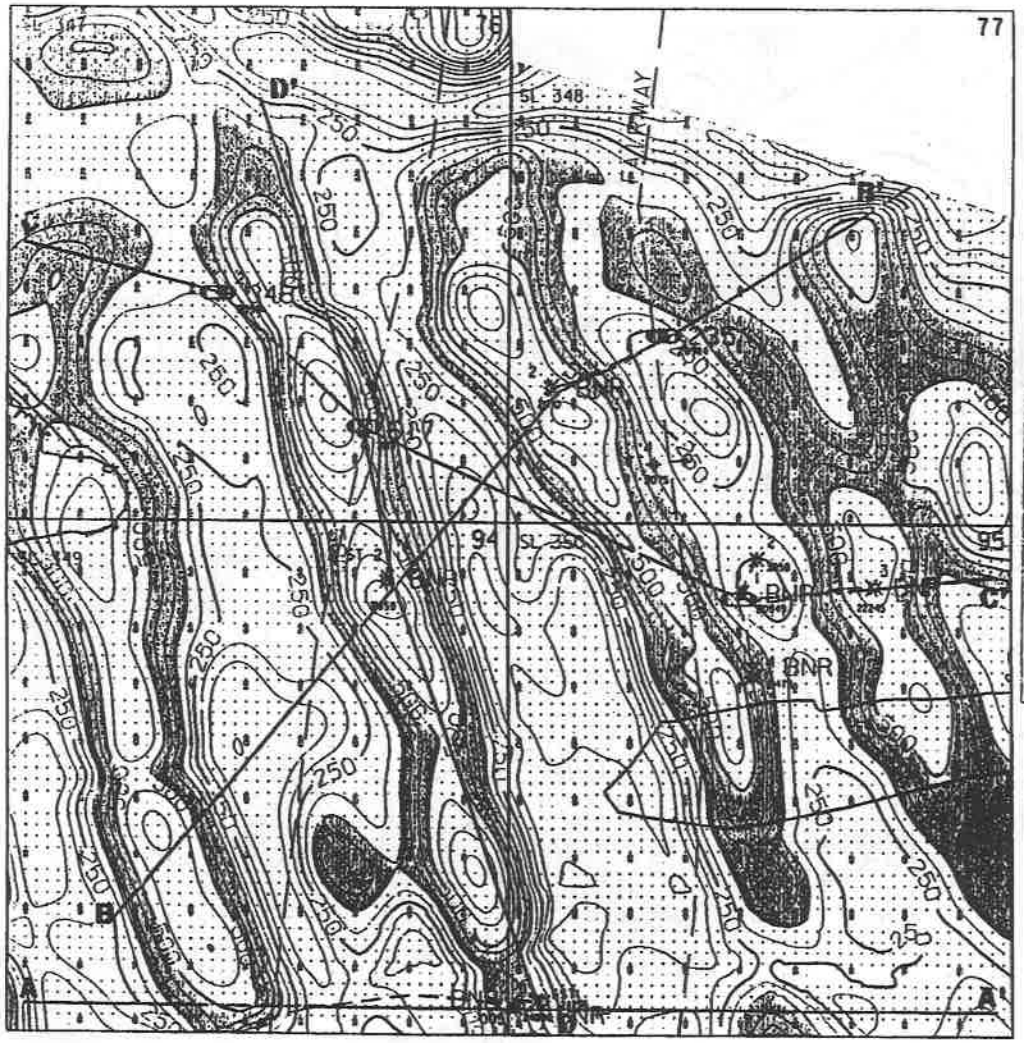
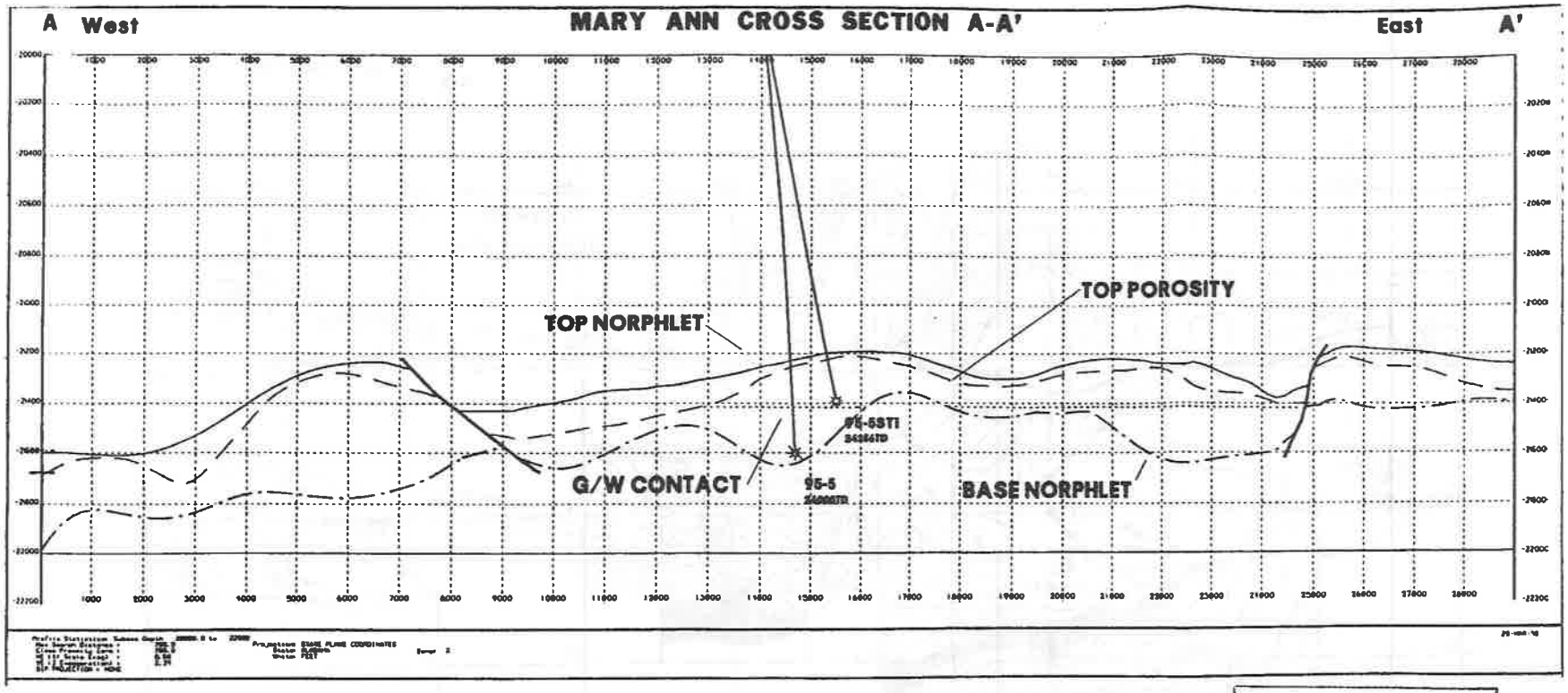


Figure 5.15. Mobil Mary Ann Field Base Norphlet Structure.



STATE OIL AND GAS BOARD
Exhibit No. 7
Petition By MOEPSI
Item No. 15, 16, 17 Date 7/17/96
Testimony Of Greuna
Received By MR

Figure 5.16. Mary Ann Field Norphlet Gross Isopach.



STATE OIL AND GAS BOARD
Exhibit No. 9
Petition By MOEPSI
Item No. 15,16,17 Date 7/17/96
Testimony Of Greiner
Received By MR

Figure 5.17. Mobil Mary Ann Cross Section-95-5.

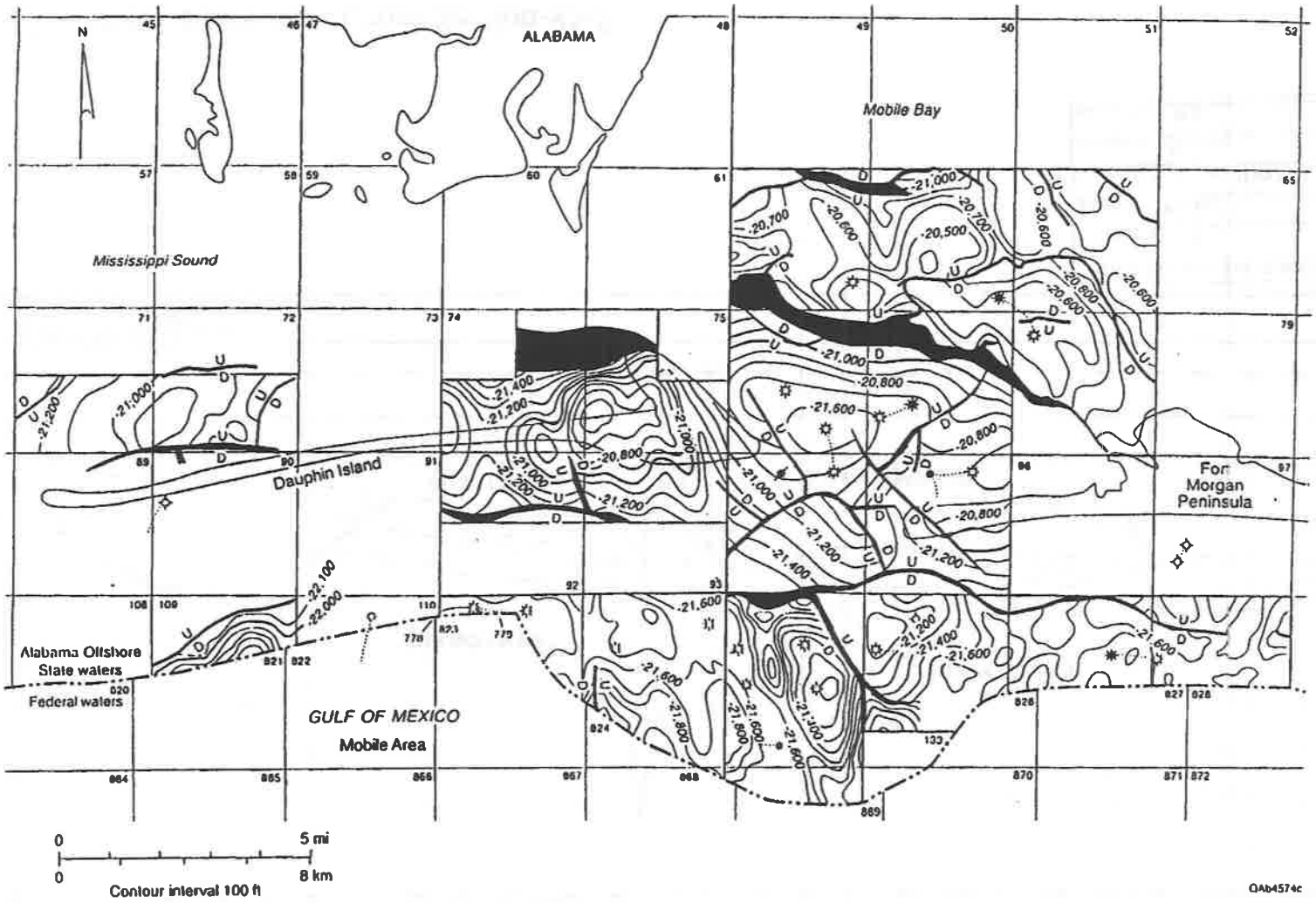


Figure 5.18. Alabama Norphlet Structure Map.

Source: U.S. DOI, MMS, 1994.

Figure 5.19 gives a view of the areal extent of the Coastal Alabama Norphlet play, which extends southeast towards Destin Dome, and west-southwest toward Union's 904 Field. The area directly south of Mobile Bay mostly has been explored and no economic reservoirs of Norphlet gas have been found.

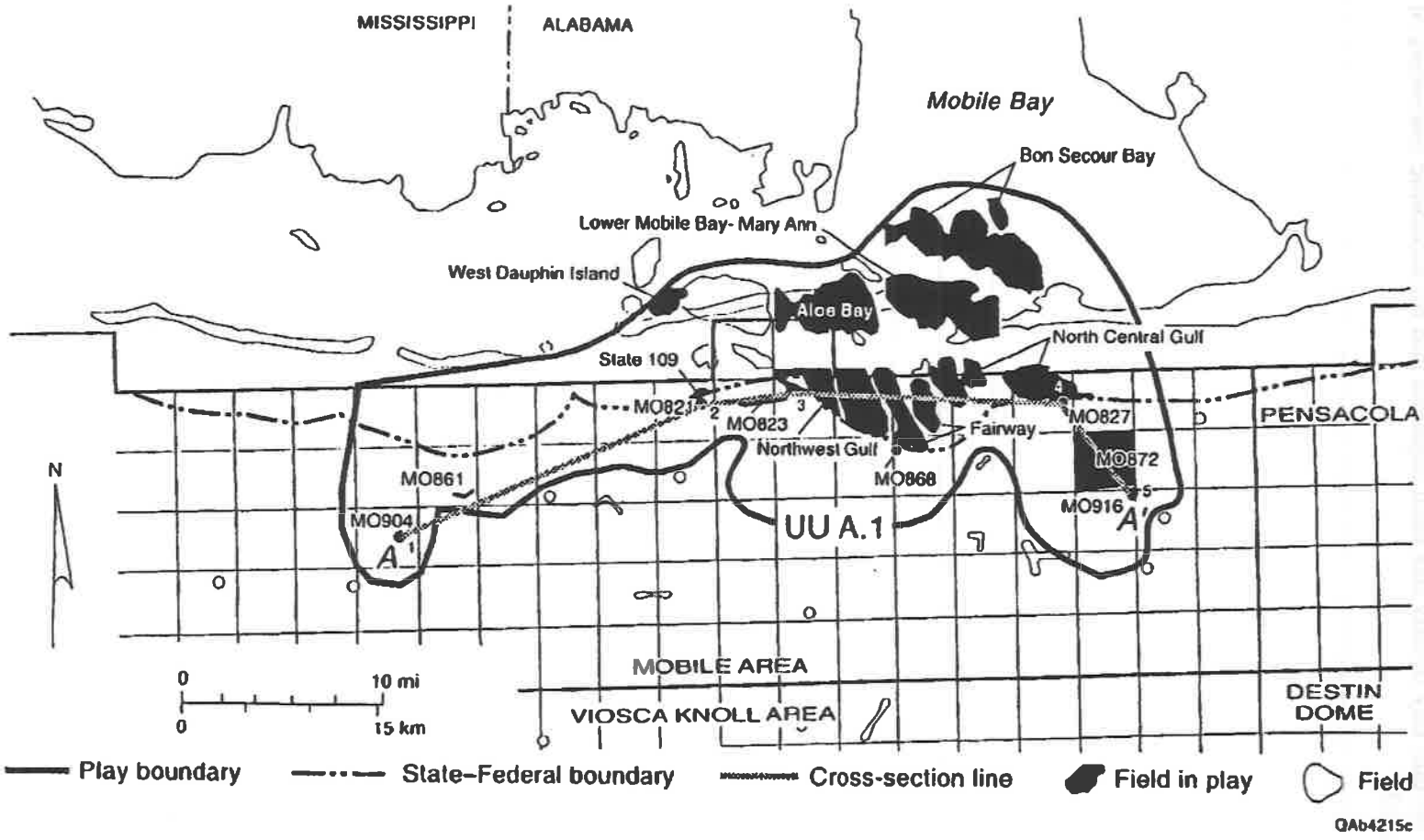


Figure 5.19. Norphlet Play Map.

Source: U.S. DOI, MMS, 1994.

6.0 Development Projects and Production History

Exxon describes Norphlet gas development as an integrated system involving specialized technologies for production, spur lines, and processing. Over $4.0 billion has been spent since the early 1980s installing these systems and drilling wells in addition to the $1.4 billion in bonus payments to acquire the leases. MOEPSI, Exxon, and Shell located sour gas processing plants onshore Mobile County. BP, first, and subsequently Union and Chevron, decided to process sour Norphlet gas on the platform, shipping pipeline-quality gas on DIGS and saving the cost of special carbon steel spur lines to shore. Shell uniquely transports corrosive wet gas to shore for dehydration and processing at the Yellowhammer Plant, relying on a proprietary corrosion inhibitor compound Shell developed in lieu of water separation on the platform.

This section describes the innovative approaches and technologies the companies applied to develop their Norphlet discoveries. Sections 6.1 - 6.4 discuss MOEPSI, Exxon, Shell and Union/Chevron. Section 6.5 tabulates facilities in place, summarizes production through 1997 and projects annual production into the future in relation to remaining recoverable reserves by field.

6.1 Development and Production of Mary Ann Field[95]

MOEPSI filed a formal Mary Ann Field development plan in September 1984, having already received a permit to construct a gas plant in South Mobile County, near Coden, to process the hot, sour, high pressure, corrosive Mary Ann Field gas. Design, development, and production was a challenge every bit as herculean as the environmental hurdles of the 1970s. Many aspects of the project required new technology or new applications of existing technology. Mobil repeatedly put the total cost of exploration and development of the Mary Ann Field at more than $400 million through start-up in 1988. Subsequent expansions and successes in the federal 823 and 869 Fields have raised Mobil's expenditures in Coastal Alabama to substantially more than $1.0 billion. OGJ[96] reported the following 1984 cost estimate for the Mary Ann Development:

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[95]This section draws extensively from two articles:

J. R. Moseley, MOEPSI, "Mary Ann field facilities reflect Mobile Bay demands, conditions," OGJ, May 8, 1989, p. 36;

Richard A. Alexander, MOEPSI, "Environmental Method Controls Corrosion/Cracking in Mobile Bay," JPT, January 1990, p. 62 - 66.

[96]OGJ, "First development, gas strike listed off Alabama," September 24, 1984, p. 44.

Mary Ann Field Development	Millions
Well Drilling & Completion	$ 204
Platforms	122
Pipelines	31
Gas Plant	72
Total	**$ 429**

6.1.1 Safety and Environmental Considerations

The location issues alone, given the H_2S content of the Mary Ann Field gas, were overwhelming. The field is adjacent to resort, tourist and historic attractions. Laying between Fort Morgan on the Gulf Shores peninsula and Fort Gaines on Dauphin Island, Mary Ann Field is the site of Admiral Farragut's good fortune with those "damn . . . torpedoes" in 1864. Sunken ships from that battle and "literally thousands of cannonballs and other battle debris remain scattered across the bay."[97] The shipping fairway passes through the Mary Ann Field and serves traffic to Mobile, the 12th largest port in the United States. Mobile Bay's prized oyster grounds are just a few miles northwest of tract 76. The Mary Ann Gas Plant is four miles from the town of Coden and within two miles of unique, world famous Bellingrath Home and Gardens, which receives about 175,000 visitors a year.

A state-of-the-art environmental monitoring and warning system was installed to provide protection for the Mary Ann facilities and surrounding community. Six air monitoring stations were installed around the plant, on Dauphin Island and on the Fort Morgan Peninsula. Thirty-two H_2S sensors within the plant and 53 sensors on the offshore platforms detect H_2S and warn operating personnel.

6.1.2 Special Materials to Handle Norphlet Gas

Production of the Norphlet gas required new methods to deal with the unusual gas. The gas contains all the ingredients necessary for severe metal-loss corrosion—H_2S and CO_2 at relatively high pressures in contact with free water. All facilities had to be designed for 40-year life with zero risk of catastrophic failure. All of the platform's sour-process piping and vessels are made of carbon steel lined with corrosion-resistant alloy (CRA) tubing. Hastelloy C-276 was selected after 12 months of extensive testing as the CRA. This cold-worked, extremely tough alloy is recognized for its resistance to sulfide cracking and corrosion and its high temperature rating; but it costs as much as ten times the cost of ordinary steel tubing used in standard wells. The well stream from each wellhead is injected with corrosion inhibitor oil (CIO) to protect the surface equipment.

The Mary Ann Field development began with two platforms built by McDermott in Morgan City, LA, (76A and 77B), each designed for two wells producing 15 - 20 MMCFD, and one auxiliary platform (76Aux), designed as a central gathering platform bridge-connected to 76A. Platform 95E designed for 60 MMCFD was installed in 1988. Each well stream is cooled from

[97] "Damn the torpedoes. Full speed ahead," Shell article, undated.

temperatures over 230° F to 120° F on the platforms. Produced gas is dehydrated on the 76A, 77B and 95E platforms and dry, sour gas is pipelined ashore. Produced water and corrosion inhibitor oil (CIO) are pipelined to the plant for water disposal and reconditioning of CIO.

Completion of the first two production wells, 94-2 and 77-1, began in June 1986. Production was initially anticipated before year-end 1986. Leaks and problems ensued, however. A decision was made that the wells could not be safely produced without installing new casing liners because of corrosion. Four existing wells were reworked. First production did not flow until nearly two years later on April 5, 1988, from 77-2 at 15 MMCFD; 77-1 was brought on-line April 9, at 14 MMCFD.

Processing on the platforms worked well for about a month, when pressure drops were encountered across the 77-2 and 77-1 production cooler. Expecting a sulfur clogging problem, the system was shut down. Minute volumes of "a white powder was discovered which was analyzed as a rare hydrocarbon called diamonoid. This substance had been found in 1983 in Canada's Hanlan Swan Hills Gas Field. . . . [Experimentation revealed] that modifications . . . of the CIO . . . and piping modifications avoided the contamination."[98] Diamonoids, produced under heat and pressure from carbon, are a relative to the solid, hard mineral substance found in jewelry. MOEPSI found the "diamond as big as the Ritz" just a few million years too soon.

The fourth well, 76-2, brought field production up to 40 MMCFD sour gas in mid-July 1988. This well produced for two months and was shut in; it has never produced again. Production dropped back to 30 MMCFD by the fall of 1988. A year later Mary Ann was still producing three wells below 50 percent of design capacity—40 MMCFD of sour gas, yielding about 35 MMCFD of pipeline quality gas. Weak demand caused Mobil to delay installation of production equipment on its platform at the 95E location, which was brought on line in the summer 1989. Well 95-1 had a casing problem and was never produced. Two of MOEPSI's completed six wells, thus, developed mechanical problems, which caused them to be P&A'd. MOEPSI was the first to discover that maintaining production from $30 million Norphlet production wells is difficult.

6.1.3 Pipelines Used Special Techniques

The offshore facilities are connected to the onshore gas plant by five pipelines:

- 16-in. sour-gas pipeline;
- 6-in. bidirectional fuel-gas pipeline;
- 8-in. regenerated (CIO) to offshore pipeline;
- 6-in. CIO/produced water to the plant pipeline;
- 10-in. spare pipeline.

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[98]J. R. Moseley, III, MOEPSI, "Lower Mobile Bay - Mary Ann Field Development," undated paper made available by Mobil.

The network is about 14 miles long, 10 miles offshore. The pipeline was buried deep under the ship channel by a boring technique instead of simple trenching to avoid any problems with shipping traffic. The boring technique was used to bring the pipeline ashore to avoid future problems with a deteriorating shoreline and at the Fowl River to avoid any intrusion with the bottom of the river. Oyster beds were carefully avoided. The rest was trenched

McDermott's Marine Construction Division began work in October 1985 and finished laying the pipelines in July 1986. Laying all five pipelines at once greatly reduced the risk of pipes crossing over each other, and being damaged, but required special equipment to inspect the welds on each pipe section. The logistics of getting all equipment and personnel on the laybarge was the first obstacle. Protecting the workers from substantial X-ray exposure while inspecting welds was a major challenge. Storing all waste water on board to achieve zero discharge was another challenge. Gutters were built around the barge so that rainwater would not flow over the barge into the Bay.[99]

6.1.4 Norphlet H_2S Variability and Mary Ann Gas Plant

Sulfur variability is a fact in the Norphlet fields. Not only does the H_2S content vary widely among the different dune structures of the Norphlet formation, it varies within fields and within tracts. Producing wells in the Mary Ann Field vary from 3.2 percent H_2S to 7.6 percent as shown on Table 6.1. The two wells in tract 77 range from 3.5 percent to 5.9 percent. The newest well in production in the Mary Ann Field, 95-5, is only 40 ppm H_2S while the forthcoming Aloe Bay gas is over 8 percent H_2S. H_2S in the 823 Field is less than 200 ppm in wells A1 - A3, but 2.3 percent in A4.

Table 6.1
H_2S Content of Producing Mary Ann Field Wells

Well	76-1	77-1	77-2	94-2	95-3	95-5
% H_2S	6-7%	3.5-5%	5.9%	7.6%	3.2-3.5%	0.004%

Source: Alabama Oil and Gas Board, 1997.

The original Mary Ann Gas Plant was sized to process about 80 MMCFD sour gas containing 7.5 percent (avg) H_2S and 4.5 percent CO_2, and produce 72 MMCFD pipeline quality gas with 225 long tons a day of liquid sulfur. The gas plant removes the sulfur, CO_2 and water. CIO is recaptured and regenerated for return to the wells.

6.1.5 Mary Ann Sales and Transport Problems

At the time of the 1979 discovery, the price of deep gas was about $4.00 MCF and expectations were that prices would rise to $7.00 MCF with the deep gas provisions of NGPA. Decontrolled

[99]Pipeline and Gas Journal, "Specialized Techniques Developed," March, 1987, p. 38 - 40.

section 107 gas actually sold for more than $10 MCF for a brief period. MOEPSI made the decision to develop in third quarter 1984 when U.S. gas prices averaged $2.62. When production started in April 1988, average U.S. gas prices were about $1.40 at the wellhead. Having invested more than 20 years and $400 million, the Mary Ann project was uneconomic when it started production based on then current prices, according to Executive VP, Paul J. Hoenmans.[100]

Mobil had difficulty finding a firm market for its Mary Ann production. Having surmounted the regulatory challenges of the 1970s and the technical challenges to develop and produce the Norphlet gas, finding a market became yet another challenge. When ANR Pipeline Co. said it could not take Mary Ann gas as scheduled, Mobil cancelled a contract with ANR in mid-1986. Transcontinental Gas Pipe Line Corp (Transco) later that year agreed to buy the gas for resale to Alabama Gas Corp in Birmingham. Algasco agreed to buy 18 BCF per year (50 MMCFD pipeline quality gas, or 58 MMCFD sour Mary Ann Field gas) for 15 years based on a formula that indexed to the price of alternate supplies. Transco built a lateral intrastate pipeline from the Coden plant north to connect to their trunk line at Butler, Alabama. Mobil received $2.15 MCF for its production, a premium of $0.60 above current spot, from Transco.

6.1.6 Mobil Mary Ann Field Production Profile

Production from the Mary Ann Field began in April 1988 but only climbed to plant design limits after wells 76-1 and 95-3 came online in January and November 1990. Well 95-4 was drilled and logged in May 1991, but never produced. Records show it temporality abandoned. Although eight wells have been completed, the Mary Ann Field original reservoir produces from five wells. Figure 6.1 shows the Mary Ann Field production profile through 1997. Aloe Bay 75-1 is included after July, 1997. Field production climbed from below 40 MMCFD in January 1990 to 80 MMCFD in February 1991. Mobil achieved planned utilization of original facilities during 1991 as well 95-3 was ramped up. Well 95-3 is the original Mary Ann Field's best well producing as much as 35 MMCFD during 1996, with lower than field average H_2S, 3.5 percent. Field production has varied between 50 MMCFD and 100 MMCFD over 1994 - 1996. Various technical problems—ranging from power outages to amine foaming problems—plus some self-curtailment to limit production when prices are low and maximize production when prices and seasonal demand are high explain the monthly variability in field production.

Mobil's newest well in the Mary Ann Field, 95-5, came on line during November 1996 producing 66 MMCFD during 20 days of November and averaging 71 MMCFD during December and January. Field production topped 160 MMCFD in December,1996, January and February, 1997. With 40 ppm H_2S, the 95-5 gas is in a different reservoir than the rest of Mary Ann production. This was the first of a new generation of Norphlet wells producing twice the average of the 823 Field wells, three to six fold as much as older Mary Ann Field wells, and more than any of Exxon's then-producing or Shell's wells. Enhanced 3D seismic capability to find the "best" place in the reservoir to produce, plus larger diameter pipes are key elements to the extremely high production rate of well 95-5. Mobil's first well into the reservoir was judged capable of producing about 50 MMCFD; they sidetracked the well and averaged 70 MMCFD

[100]OGJ, "Mobil steps up Norphlet gas flow off Alabama," July 18, 1988, p.18.

Figure 6.1. Mary Ann and Aloe Bay Fields Gas Production per Day.

Source: AOGB, 1998.

during November and December 1996. The well is drilled with a 30° angle, but not horizontally completed. The well is considered a "world offshore cementing record [for] using foamed cement on a 9 5/8-in. drilling liner."[101] The well technology plus the zero-discharge operating requirements were special challenges to completing the well. Keeping up production from the new well is also a problem. The well is on the edge of reservoir and close to water contact. Produced water and related scaling has become a problem. Production has declined from the high start-up rates to average 42 MMCFD during the fourth quarter, 1997. The well shut down for workover in April 1998.

Table 6.2 shows Mobil Mary Ann Gas Plant 1996 total intake, intake by well, gas sales and sulfur production. About 70 percent of the 95-3 gas production goes to the Mary Ann Plant. The balance is routed to Shell's gas plant to make room in the Mary Ann Plant for gas from Mobil's federal field well 823-A4, which came in with H_2S too high to process in the 823 plant. Mobil doubled its capacity of the Mary Ann plant to 160 MMCFD to take in the unexpectedly sour gas from 823-A4 well. That well tested 68 MMCFD with 2.8 percent H_2S from 22,570 feet on December 11, 1990. The high H_2S was a surprise; production was not started until March 1994, after the Mary Ann Plant sulfur handling capacity was increased. The low H_2S 95-5 gas goes to the 823 Plant.

6.1.7 Aloe Bay Field and Mary Ann Plant Expansion

The 8 percent H_2S Aloe Bay well 75-1 was brought online at 10 MMCFD in July, 1997. Design production is between 30 - 50 MMCFD; the well averaged 24 MMCFD during the fourth quarter, 1997. The Aloe Bay Field is producing from a single platform just north of Dauphin Island. A three pipeline bundle transports gas and utilities between the tract 75 platform and the existing 76A platform in the Mary Ann Field for processing in the Mary Ann Plant. During the first quarter 1997, the Mary Ann plant averaged 141 MMCFD. Debottlenecking in early 1997 increased the sulfur recovery capacity of the Mary Ann Plant from 285 LTD to 470 LTD to handle the Aloe Bay well and give the plant capacity for 180 MMCFD high sulfur gas. Production declines, well problems and warm 1997-1998 winter conditions have not tested the capacity limits of the Mary Ann Plant since Aloe Bay was added to production, as can be seen on Figure 6.1 and Table 6.2. Mobil is considering adding a second Aloe Bay well, 75-2, during 1998.

The Aloe Bay pipeline bundle is bored deep beneath the northwest trending section of Little Dauphin Island between tracts 75 and 76 to avoid oyster beds and other sensitive environmental areas.[102] The route is shown on Figure 6.2.

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[101]Glen Benge, Jim McDermott, Joey Langlinais, and James Griffith, "Foamed cement job successful in deep HTHP offshore well," OGJ, March 11, 1996, p. 58 - 63.

[102]Army Corps of Engineers, "Joint Public Notice: Emplacement of Pipeline System, Mobile Blocks 75 and 76, Aloe and Mobile Bays," October 28 1996.

Table 6.2
Mobil Mary Ann Plant Gas Per Day 1/96 - 12/97
MMCFD

	Total gas	Wells								Gain thr. Plant	Sales	Sulfur Production Long tons
		76-1	77-1	77-2	94-2	95-3	95-5	823-A4	Aloe Bay 75			
Jan 96	147.230	12.025	10.243	23.685	12.115	26.923	0.000	62.239			132.190	232.510
Feb	148.263	13.923	11.770	24.691	13.984	23.737	0.000	60.158			133.303	245.200
March	121.440	9.682	8.830	19.902	10.824	21.909	0.000	50.294			109.123	219.232
April	145.228	13.191	11.245	25.212	13.076	25.432	0.000	57.073			131.596	252.703
May	147.448	12.947	11.563	26.170	13.720	25.439	0.000	57.610			132.902	262.949
June	151.415	12.758	11.353	25.429	12.996	25.319	0.000	63.571			137.280	246.742
July	148.565	13.689	11.702	24.946	13.070	22.912	0.000	62.245			134.917	259.189
August	151.396	13.838	12.097	25.327	13.889	24.685	0.000	61.560			137.032	261.932
Sept.	151.926	13.435	12.781	26.222	13.581	25.242	0.000	60.664			137.826	260.424
Oct.	128.140	11.261	10.902	23.625	11.130	23.365	0.000	47.856			114.486	213.881
Nov.	142.864	14.597	13.248	28.777	14.998	13.870	0.119	57.254			127.480	220.206
Dec	138.311	13.189	12.777	27.778	13.916	14.742	0.213	55.696			125.283	279.793
Jan 97	136.253	14.584	12.852	27.736	14.031	14.967	0.201	51.884			124.166	249.545
Feb.	155.038	16.190	13.678	29.744	14.875	16.656	0.160	63.735			141.802	276.423
Mar	140.034	14.624	12.354	26.865	13.436	15.044	0.145	57.567			128.079	249.672
April	132.284	14.637	11.930	26.148	11.479	11.372	0.233	56.486			119.599	228.504
May	67.098	7.712	6.973	15.211	4.077	1.182	0.148	30.529		1.265	60.099	124.613
June	20.812	3.109	3.277	6.444	2.061	3.474	0.148	2.299		0.000	17.126	0.684
July	66.566	10.303	9.615	18.447	10.042	0.017	0.241	7.641	5.528	4.731	58.083	175.665
August	47.072	4.773	6.458	13.027	4.361	4.162	0.133	3.434	9.518	1.207	39.058	104.140
Sept.	139.614	12.218	12.828	23.849	11.815	4.838	0.090	45.812	27.257	0.000	127.765	242.282
Oct.	137.782	11.291	10.485	21.256	10.948	9.696	0.071	47.953	25.419	0.662	126.112	269.833
Nov.	134.468	11.186	11.012	22.808	11.523	5.025	0.130	47.775	24.197	0.000	121.682	260.461
Dec	122.669	9.725	10.297	21.230	10.472	10.776	0.105	39.151	20.912	0.000	110.459	253.097

Source: Alabama Oil and Gas Board, 1997.

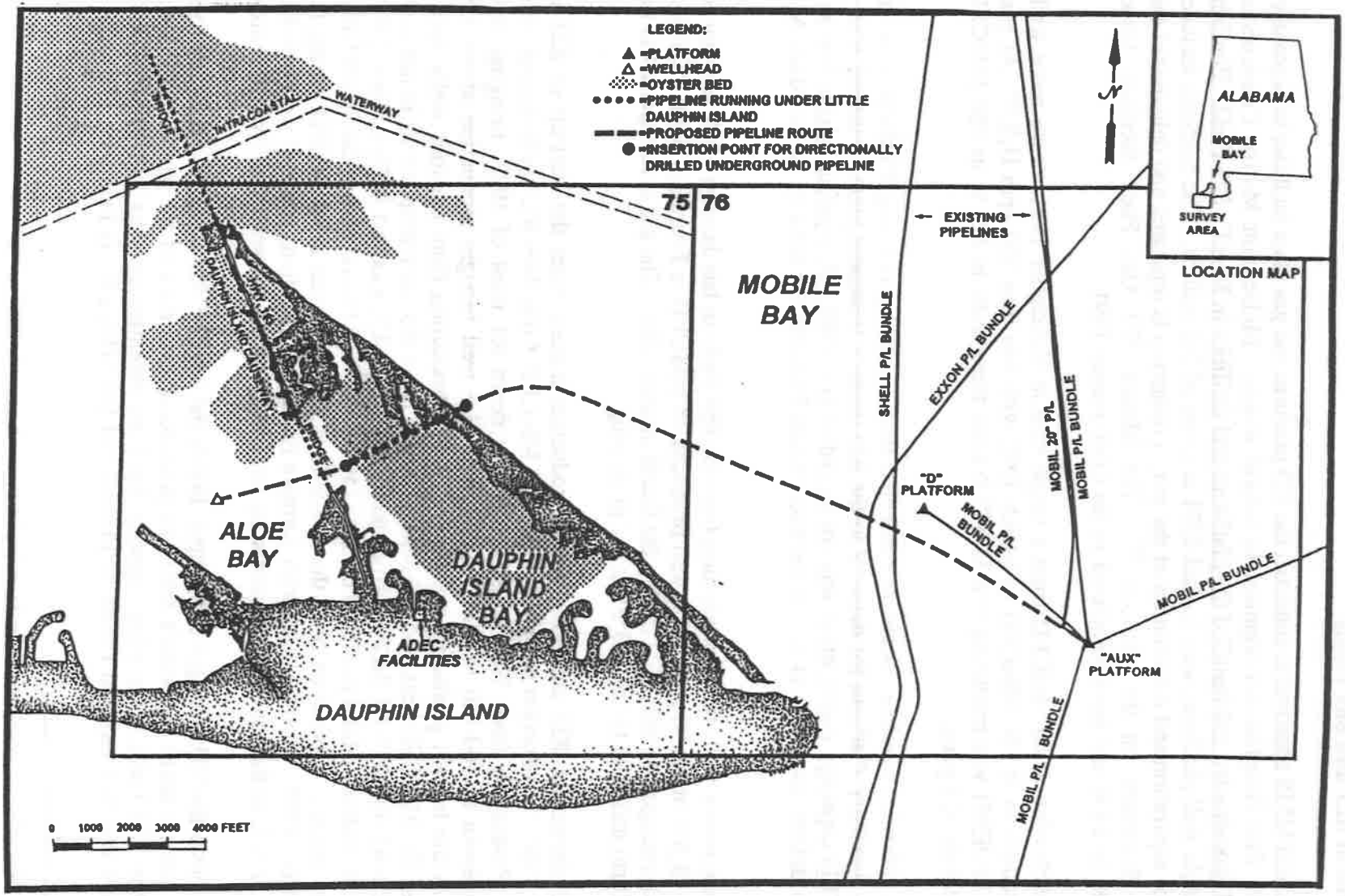


Figure 6.2. The Aloe Bay Pipeline Route.

Source: MOEPSI, "Environmental Information for a Pipeline Route Within Blocks 75 and 76 Mobile Bay Area, Alabama," August 28, 1996.

6.1.8 Federal 823 and 869 Fields

Mobil received MMS approval to construct the 823 platform and gas plant facilities in September 1989 as the first Norphlet development in federal waters. McDermott Marine Construction engineered, constructed and installed the platforms and facilities in Mobil's 823 Field. Platform 823A, a single well platform, went in mid-1991 at a cost of $41 million. The platform includes facilities for separation and dehydration of the gas. Production is separated and dehydrated for corrosion abatement on the platform.[103] The Mobile 823 Gas Plant facilities began construction in 1990 and were completed in the third quarter 1991.

Gas started flowing at 40 MMCFD from a single well in November 1991. Two more wells brought production to 160 MMCFD in March 1992 with less than 200 ppm H_2S.[104] At year end 1993, MOEPSI was producing 150 MMCFD from three wells in 823 to its 250 MMCFD capacity Mobile 823 plant.

A 20-inch gathering pipeline system was installed from the 823 processing Platform A to the Mary Ann Auxiliary Platform for delivery to the 823 onshore treatment plant. Planned with a 250 MMCFD capacity, construction was contracted in late 1989. A separate 8-inch line was required to deliver sour 823-A4 gas to the tract 76Aux Platform for delivery to the Mary Ann plant.

Mobil's most recent well started production from the 869 Field in late January 1997 at about 60 MMCFD. H_2S is about 90 ppm. The well produced 78 MMCFD in February, 85 MMCFD in March, and averaged 64 MMCFD during the fourth quarter, 1997. The gas is transported to the 823A platform and then to the 823 Plant for processing.

Figure 6.3 shows the 823 and 869 Fields' production history from the start-up of 823 in November 1991. Production averaged about 160 MMCFD from three 823 wells during most of 1992. Production from Well 823-A2 was shut down for most of 1993, bringing field production down to 100-120 MMCFD. The high H_2S well brought production above 190 MMCFD in the highest producing months of 1994. Production from the four wells varied between the 194 MMCFD peak and 170 MMCFD until late 1995, then dropped off in late 1996 as wells 823-A1 and 823-A2 declined from peak. Well 823-A5, spudded in December, 1997, will stave off decline. Mobil produced close to 250 MMCFD of federal gas in March 1997 after 869-3 came online. Production from the two federal field averaged 203 MMCFD during the fourth quarter, 1997. Mobil, acting with partners Enron and Chiefton, spudded well 914-4 in December, 1997, to the southeast of producing well 869-3 to add to production from this area.

Table 6.3 shows the 823 plant gas throughput. Beside the low H_2S 823 wells, the plant is taking Hunt's 25 percent share of Exxon's tract 114 production, plus most of the gas from 95-5 and gas from the 869 Field. The plant capacity has been debottlenecked to 300 MMCFD. In January 1997 the plant received 193 MMCFD and sold 189 MMCFD. In February, March, and

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[103]OGJ, "Norphlet gas development set in federal water," October 9, 1989, p. 24.

[104]OGJ, "Gas flowing from field off Alabama," November 11, 1991, p. 27.

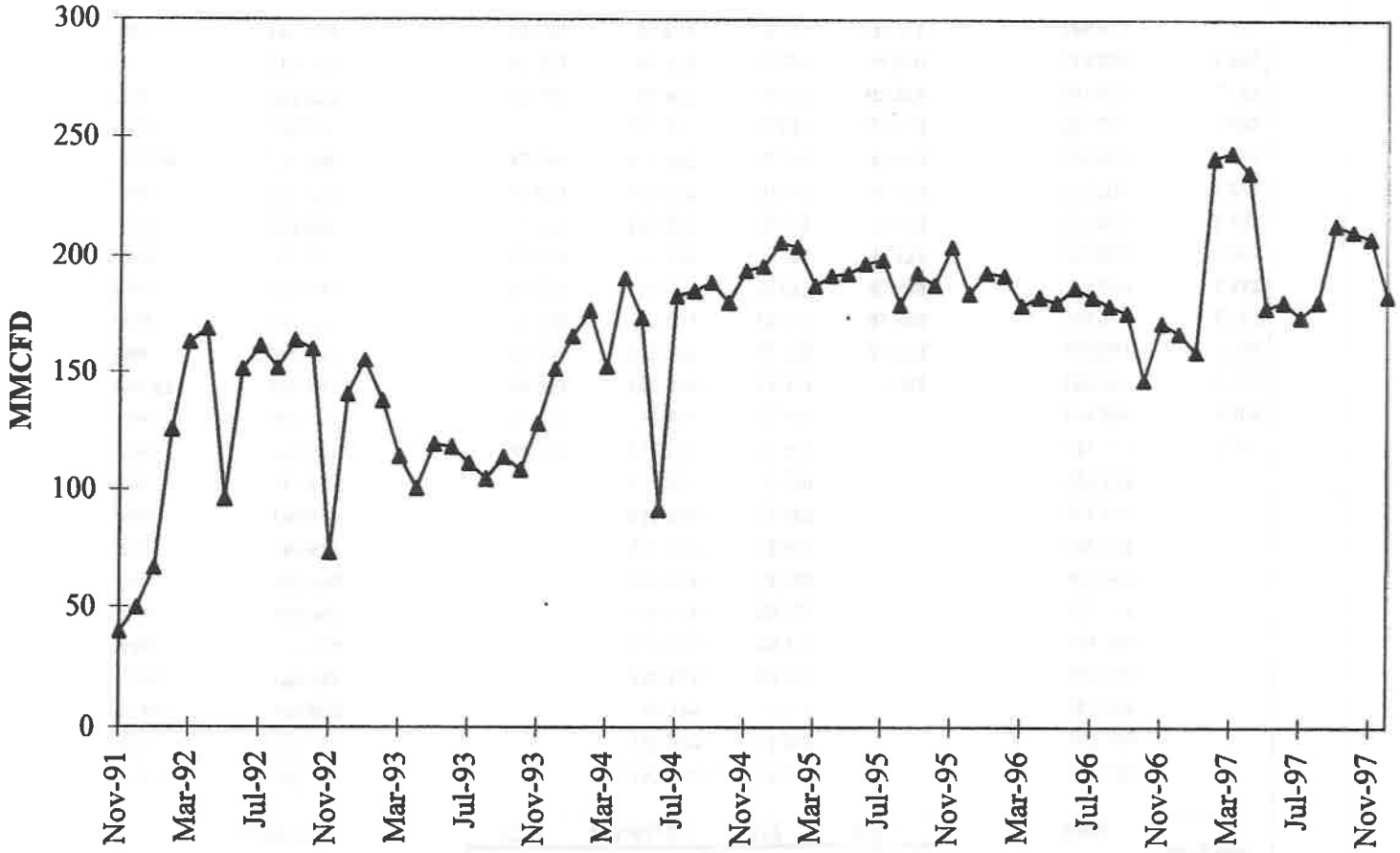


Figure 6.3. Mobile 823 and 869 Fields Norphlet Production.

Source: Dwights/PI, 1998; Foster Associates, Inc., 1998.

Table 6.3
Mobil 823 Plant Gas Per Day 1/96 - 12/97
MMCFD

	Total Gas	Hunt 25% Share Lease 95-5	823-A1, 2, 3	114	869-3	Sales	Sulfur Production Long tons
Jan 96	163.554		147.914	15.640		160.130	
Feb	167.972		152.037	15.935		164.350	
March	165.805		149.372	16.434		161.643	
April	170.585		150.183	20.402		167.150	
May	167.954		147.515	20.439		164.395	
June	168.796		148.115	20.682		165.274	
July	162.448		143.564	18.884		161.707	
August	146.477		133.985	12.491		142.778	
Sept.	144.617		131.948	12.669		141.181	
Oct.	121.813		111.934	9.879		119.123	
Nov	175.821	44.115	118.746	12.961		171.351	0.399
Dec	200.171	71.956	83.624	12.333		194.506	0.304
Jan 97	192.813	69.378	110.390	12.044	1.001	189.931	0.318
Feb	269.047	67.335	112.229	11.740	77.743	265.561	3.736
Mar	247.731	44.396	107.011	10.928	85.396	244.221	2.117
April	258.844	61.635	105.084	12.079	80.046	254.693	3.432
May	202.552	40.918	85.028	9.286	67.321	200.083	1.868
June	252.890	58.273	108.006	11.671	74.940	244.880	3.105
July	227.874	46.692	105.079	10.045	66.058	218.032	7.271
August	236.206	42.649	111.347	11.570	70.640	230.037	7.553
Sept.	230.271	49.061	101.351	11.637	68.222	225.252	1.692
Oct.	211.977	38.425	95.903	10.411	67.238	207.936	2.579
Nov	219.163	47.805	95.473	11.029	64.856	213.023	2.796
Dec	191.123	39.630	83.687	7.194	60.613	186.645	5.151

Source: Alabama Oil and Gas Board, 1997; US DOI, MMS, 1998.

April, with 869-3 hitting 78 - 85 MMCFD, the plant processed 247 - 269 MMCFD, the high for 1997.

6.1.9 Mobil Production Summary: 1997

Mobil's Aloe Bay and Mary Ann fourth quarter, 1997, average production, 134 MMCFD, was well below the spring peak. The 823 and 869-3 wells fourth quarter average production averaged 203 MMCFD. Combined, Mobil produced 337 MMCFD at the end of 1997, about 70 percent of their plant processing capacity.

6.2 Development and Production of Exxon Project[105]

With discoveries in Bon Secour Bay (BSB), North Central Gulf (NCG), and Northwestern Gulf (NWG) state fields, plus 827 and 867 federal fields, Exxon announced the second Mobile Bay project in October 1986 to develop its extensive leaseholds. OGJ subsequently reported that Exxon's discoveries in state waters amounted to 2.8 TCF.[106] Exxon hoped to produce as much as 600 MMCFD from its fields, according to the OGJ article. Exxon filed plans with the COE to install multiple production platform complexes in tracts 64, 112, 114, 827, 867 and 868. The platforms on state tracts 62, 63, 111, 112, 114 & 115, and the platform on OCS tract 827 are currently producing. The 868 reserves were developed by the Mobil-operated well 869-3, with Exxon a 30 percent partner. 867 is planned for development in 1998.[107] Exxon referred to a gas sales contract as one hurdle to overcome during the development process.[108] Exxon, like Mobil, was caught-up in the middle of the "gas bubble."

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[105]This section is based on five Exxon papers delivered at the May 1994 OTC.

Johnson, H. E., R. J. Kartzke, and R. M. Kruger, "The Mobile Bay Project," OTC 7447.

Gallagher, M.J., T. T. Arthur, D. E. Boening, and K. A. Sortland, "An Overview of the Mobile Bay Project Offshore Facilities and Installation Approach," OTC 7448.

Gordon, J.R., D.V. Johnson, S.R. Herman and J.B. Darby, "Well Design and Equipment Installation for Mobile Bay Completions," OTC 7571.

Arthur, T. T., E. L. Cook, and J.K Chow, "Installation of the Mobile Bay Offshore Pipeline Systems," OTC 7572.

Page, W. A., R. D. Teague, "Mobile Bay Project Quality Management Program," OTC 7449.

[106]OGJ, "Industry slates more exploration, development in gulf Norphlet trend," March 6, 1989, p. 15 - 18.

[107]Exxon note to William Wade, May 5, 1997.

[108]OGJ, "Development activity dots Mobile Bay trend," April 6, 1987, p. 27

6.2.1 Integrated Norphlet Production and Processing Facilities

Exxon described its Mobile Bay Project as the world's largest offshore sour gas development. Their reported costs included $1.0 billion for facilities to produce and process 400 MMCFD from its three state fields (including 827) plus nearly $600 million bonus payments and $30 million each to drill and complete each well.[109] *Offshore* magazine estimated the project cost at $2.0 billion for the 30 year project, including the bonus payments.[110] Exxon's project emphasizes that developing Norphlet gas requires an integrated system of field production facilities, processing plant and gathering lines designed specifically for the gas from specific fields.

Exxon's basic plan entailed development of its three state fields simultaneously, plus the federal 827 Field within the tract 115/116 development plan, and bringing the sour gas ashore for treatment at a single plant. Brown and Root designed the production facilities and flow lines. Fluor-Daniel designed the gathering system. H. B. Zachry, San Antonio, designed the onshore treating plant, with Stearns-Roger, Denver, subcontractor for plant construction.[111]

The offshore work was done under rigid environmental stipulations that required all discharges to be collected and barged for onshore disposal. Siltation was avoided to protect nearby oyster beds. Production of sour gas from hot, high pressure reservoirs required exceedingly high standards of equipment integrity and reliability. Risks associated with the sour gas, and high cost wells and facilities, made quality of products used a high priority.

Like MOEPSI, Exxon's project had to deal with H_2S that varied greatly among tracts and even among wells in different dunes within tracts as shown on Table 6.4. H_2S on tract 111 varies by a factor of 300-fold between wells. (100 ppm equals 0.01 percent.) Tract 62 gas is nearly 10 percent H_2S—1000 times greater than well 112-2 H_2S.

Table 6.4
H_2S Content of Exxon's Wells

Well	111-1	111-2	112-1	112-2	114-2	115-1	116-1	62-1	63-1	78-1	827-1
H_2S	100 ppm	3%	.2%	100 ppm	.3%	100 ppm	120 ppm	9.7%	1.5%	1.4%	90 ppm

Source: Alabama Oil and Gas Board, 1997.

The onshore gas plant was originally designed to treat a mix of gas containing 95 percent hydrocarbon, 4 percent CO_2 and the range of H_2S content gas shown on Table 6.4.[112] The varying compositions in the produced sour gas led to a plant design that incorporated two sulfur

[109]OGJ, "Mobile Bay gas flow rising in response to E&D campaigns," Jan 10, 1994, p. 22.

[110]Offshore, "Exxon USA's massive Mobile Bay Project getting underway," October, 1991, p. 34.

[111]OGJ, "Exxon to develop gas reserves off Alabama," September 24, 1990, p. 46.

[112]OGJ, "Exxon to develop gas reserves off Alabama," September 24, 1990, p. 46.

trains, one initially designed to handle 110 long tons (LT) sulfur per day and the other 40 LT sulfur per day, and required what Exxon described as a unique air-emissions permit.[113] The plant was designed for 300 MMCFD, but with minor modifications was debottlenecked in 1994 to process 400 MMCFD. Subsequent sulfur plant modifications to pumps and valves have enabled Exxon to take in gas with higher average H_2S content. Capacity remains rated at 400 MMCFD, with a higher average sulfur content producing as much as 228 LT of sulfur per day in early 1997. By winter 1997 Exxon could extract 285 LT of sulfur per day.

Figure 6.4 shows that eleven wells on Exxon's three state fields and federal 827 Field are produced to Exxon's onshore treating facility. Besides the varying H_2S content, all of the gas has high pressure (Initial bottom hole pressures were 10,500 to 13,500 psi.) and high temperature (as high as 385 - 420° F). Production from the NCG Field flows to the NWG Field and then to shore. BSB gas is added to the 24 inch-pipeline that takes the combined gas to shore.

Each field has a production platform that separates and dehydrates gas on the platform. Separation sends a dry sour-gas stream and a liquids (mostly water) stream ashore for processing. Solid corrosion resistant nickel alloy (CRA) is used in all the flowlines to withstand the pressure, temperature and corrosive nature of the gas. To absorb diamonoids and prevent plugging, fresh diesel is injected into well streams, if needed. All wells were completed with 3.5 and 4-inch CRA tubing. Four early exploration wells with steel production casing at total depth were retrofit with the CRA liners. Different classes of CRA were used in the wells dependent on the H_2S, bottomhole pressure and temperature of the gas produced in the well. This saved the project substantial money while assuring safety and quality of materials.

Nearly 200 miles of high pressure alloy and carbon steel pipe is installed to connect the three production platforms and five well templates with the onshore treating facility. Like Mobil, a five line gathering system connects the onshore plant with the production platforms to transport diesel, fuel gas, produced gas produced liquids and dilution water. Water depths along the right-of-way range from 2 to 50 feet in both the protected inshore Mobile Bay waters and the high current, open waters outside the Bay.

A separate 42-person living quarters is bridge-connected to the NWG production platform. This houses offshore personnel from all three fields. Each platform has a separate bridge-connected template for one or more producing wells. There are five remote well templates.

6.2.2 Project Management and Quality Control

Planning and management of the construction and installation of platforms, production equipment, and flowlines among three fields and an onshore treating plant simultaneously was yet another herculean milestone in the Norphlet story. Quality, supervision and inspection were planned for at the inception to assure that the project met program objectives:

- Assure that completed facilities met design, functional and regulatory requirements;

[113]OGJ, "New Mobile Bay complex exploits major sour gas reserve," May 23, 1994, p. 49 - 51.

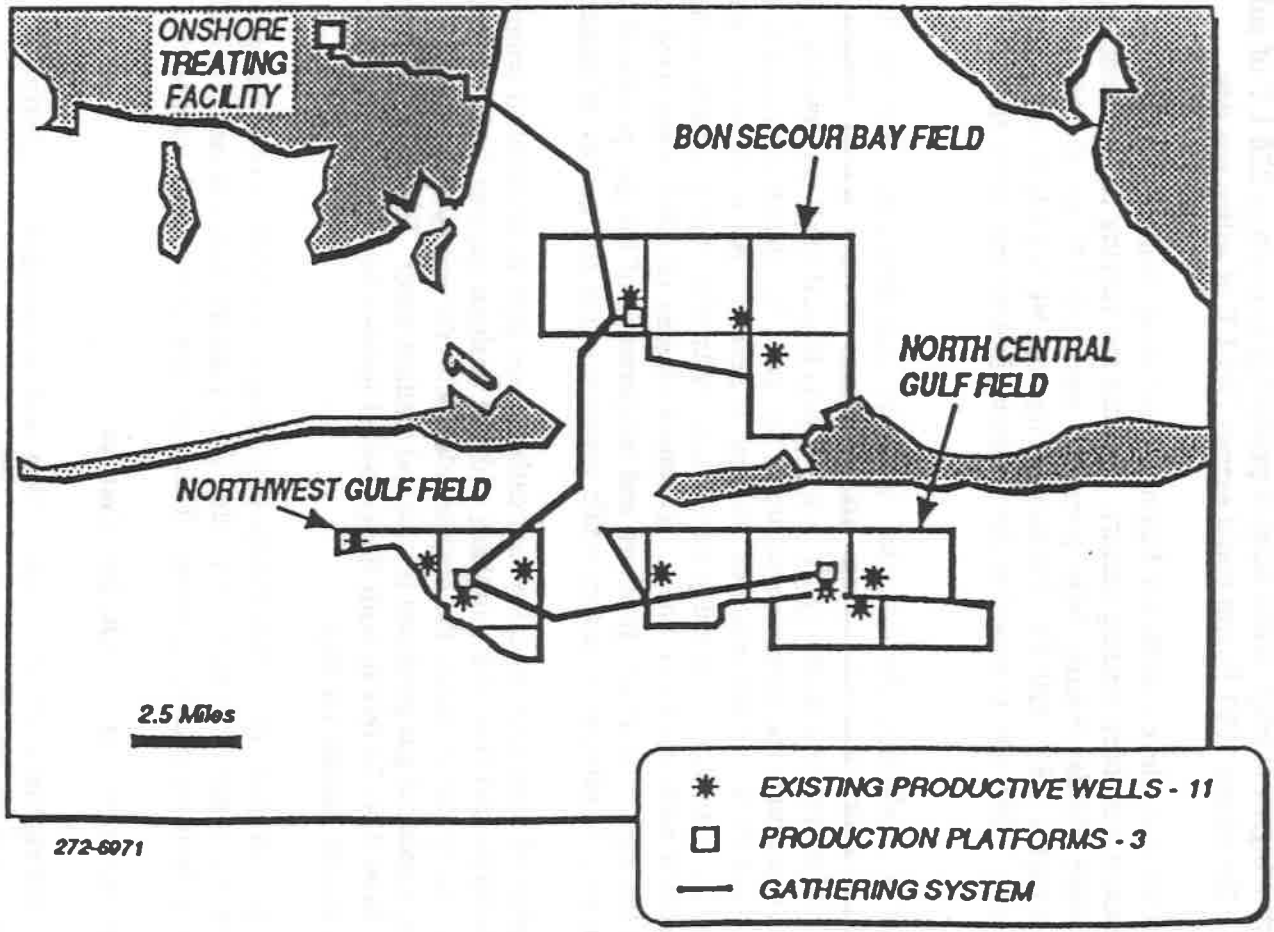


Figure 6.4. Mobile Bay Area.

Source: Exxon, 1997.

- Ensure timely documentation and compliance;
- Build in quality to virtually eliminate risk of failure.

A project management plan was implemented to assure quality by lines of responsibility, anticipated audits and inspections, and documentation. Eight thousand units of pipe, valves, fittings, and welds were inspected with only one reject found. Exxon designed critical components with zero tolerance for failure.

Exxon developed much new or untried technology. Cold-worked CRA was identified early as an optimum material for flowlines. A pipe-in-pipe insulated system was selected. This created a challenge for welding technology because cold-worked materials had not previously been considered candidates for welding applications. A welding procedure had to be developed that would produce high strength, repeatable welds in an offshore environment. Welders had to be trained to perform the welding with repeatable exactitude. At the initiation of the welding development program, Gas Tungsten Arc Welding (GTAW) took about seven hours to complete a weld. By the time field welding was to begin, this time had been reduced to 35 minutes. Full documentation of each weld including X-rays and interpretation by a small group of specialized personnel assured the integrity of the welding program.

Pipelines were installed during the summer months of 1991 and 1992. The BSB pipe bundle was installed in 80-foot joints in a common ditch using conventional lay methods. The 1992 workscope achieved the following:

- Offshore flowlines were installed;
- Nearshore gathering lines were installed;
- Offshore gathering lines were installed;
- Inshore gathering line from the tie-in at the east end of Dauphin Island to the beach approach was installed.

This entailed directionally drilled crossings, which required much coordination between pipe string layout, drilling and excavation contractors. Exxon specially constructed a laybarge to allow the installation of five pipelines in the bundle simultaneously.

Planning for the project started in early 1986. Wells were drilled between 1983 and 1993, with six final wells tested and completed in 1993. Offshore work was accomplished between 1991 and 1993 with 2.7 million contractor hours. Figure 6.5 shows the scheduling of the offshore work, exclusive of drilling, by month. The onshore plant work was completed during the same period. At one time Exxon had 2,000 contractors working with 200 Exxon people. Over 100 contractor firms were involved with various aspects of the work, with Exxon assuming an overall coordination role. The offshore pipelines team used 1.5 million of the entire 2.7 million-

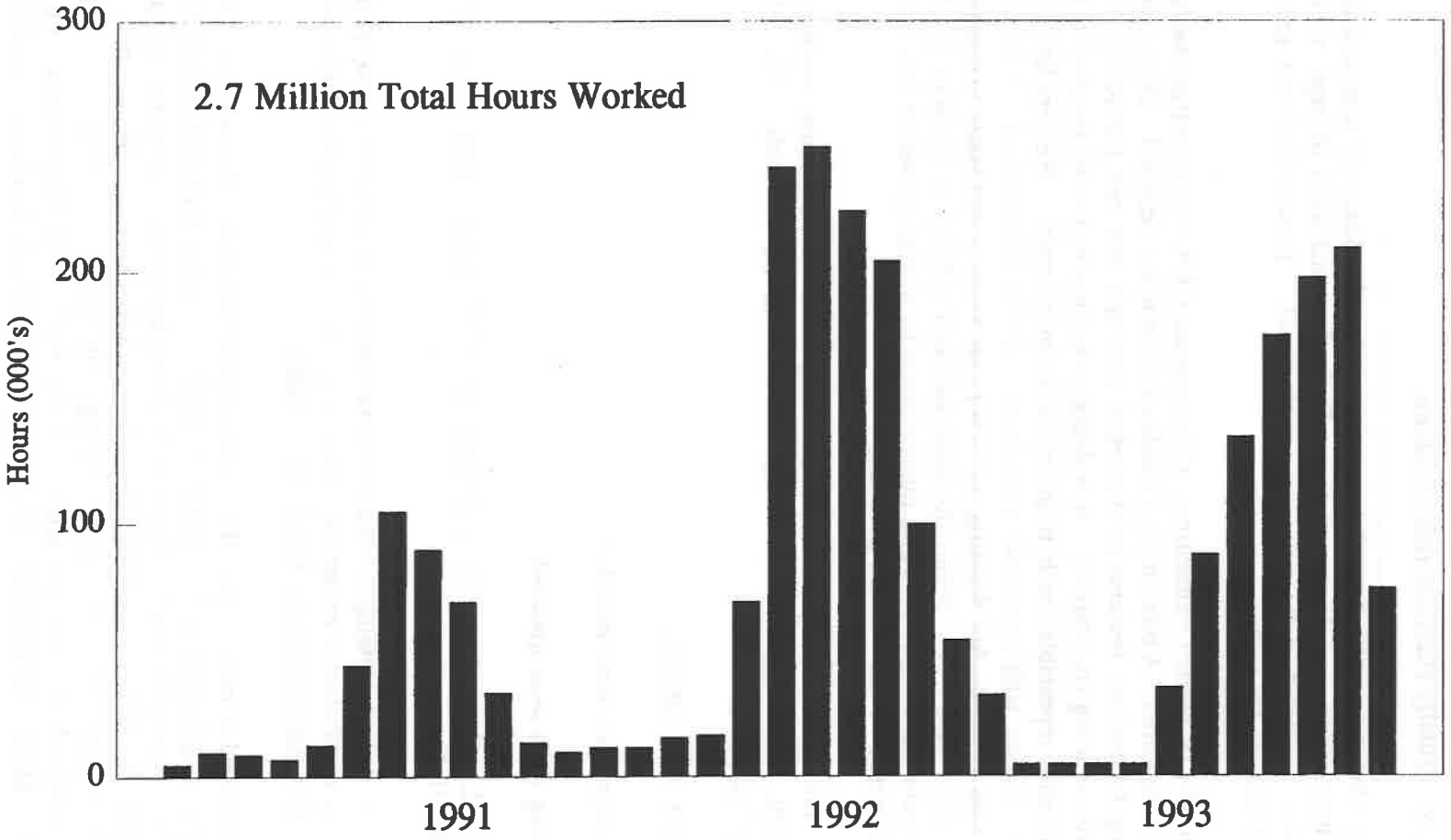


Figure 6.5. Exxon Project Contractor Hours Worked Offshore.

Source: Exxon, 1997.

hour project. There were no significant environmental incidents and no "lost time" safety incidents. The pipeline segment of the project came in 20 percent under budget.

6.2.3 Exxon Project Production Profile

Startup of the eleven wells in state and federal waters was completed over a 45-day period beginning with the Northwest Gulf Field in October 1993. Figures 6.6 - 6.8 show the monthly production rates from the three state fields, including production from 827-1 on Figure 6.6. By March 1994 Exxon was producing at the following rates:

Field	MMCFD
NCG	93
827	19
NWG	189
BSB	80
Total	**381**

The NCG/827 Field has maintained the nearly 120 MMCFD production rate with only occasional variation since start up. This gas is lower in H_2S than BSB. The spike in September 1994, common to all fields, reflects routine maintenance at the onshore treating facility. Exxon spudded well 114-3 in March, 1997, to offset Mobil's 95-5 well. Production started February 10, 1998, and ramped to 65 MMCFD March 5, 1998.

The NWG Field has had periodic production problems, illustrated by the shutdown of its 112-1 well on June 12, 1996; 112-1 is reported to have had mechanical problems. The well produced 42.3 MMCFD in January 1996—the high for the year. The well returned to service in September 1997. Well 112-2 was shut down in April 1997 for a workover to clean scaling and repair the SCSSV, which was completed in August 1997. Production in the field for the three months ending January 1997 averaged 105 MMCFD, about 55 percent of the average for the three months ending March 1994. Keeping Norphlet wells producing at design rates is a challenge. Exxon brought well 111-3 online in March 1997 at 77 MMCFD to supplement production. Exxon refers to its high initial production as "a typical NWG well with standard diameter tubing; processing capacity was available [for high production rate] and well facilities were designed for maximum initial rate."[114] Returning wells 112-1 and 112-2 to service brought field production back to 200 MMCFD in October.

BSB production increased from 40 MMCFD at start up to 120 MMCFD in December 1996. The same three wells have ramped up consistently since they came on line in November 1993. BSB wells were ramped up even further to maintain plant throughput and sales commitments after the 112-1 well was taken out of production in 1996 for a workover. BSB wells averaged 106 MMCFD during the fourth quarter, 1997. Mobil and Exxon are planning a joint well on

[114]Exxon note to William Wade, May 5, 1997.

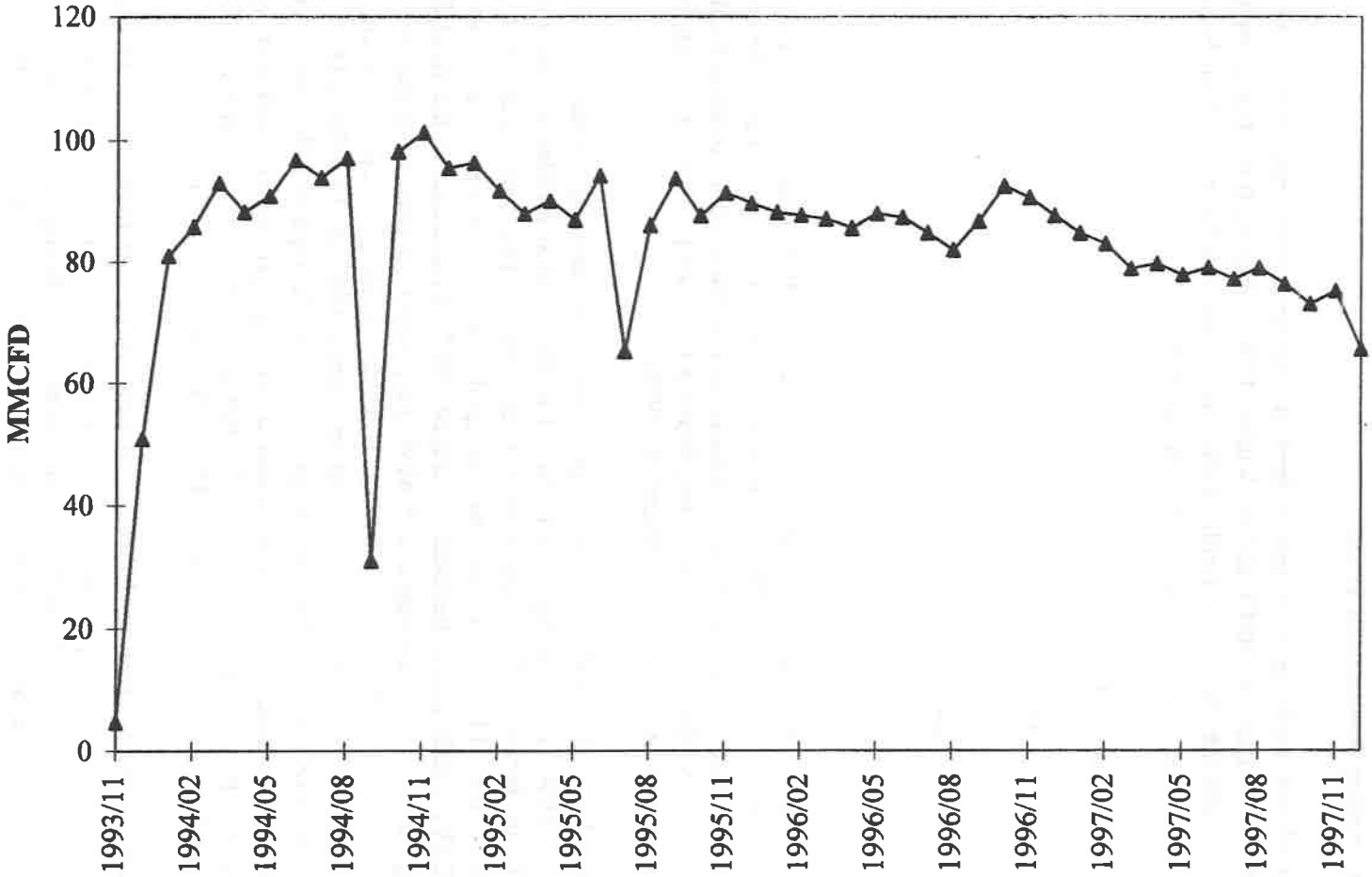


Figure 6.6. North Central Gulf/Mobile 827 Field Gas Production per Day.

Source: AOGB, 1998.

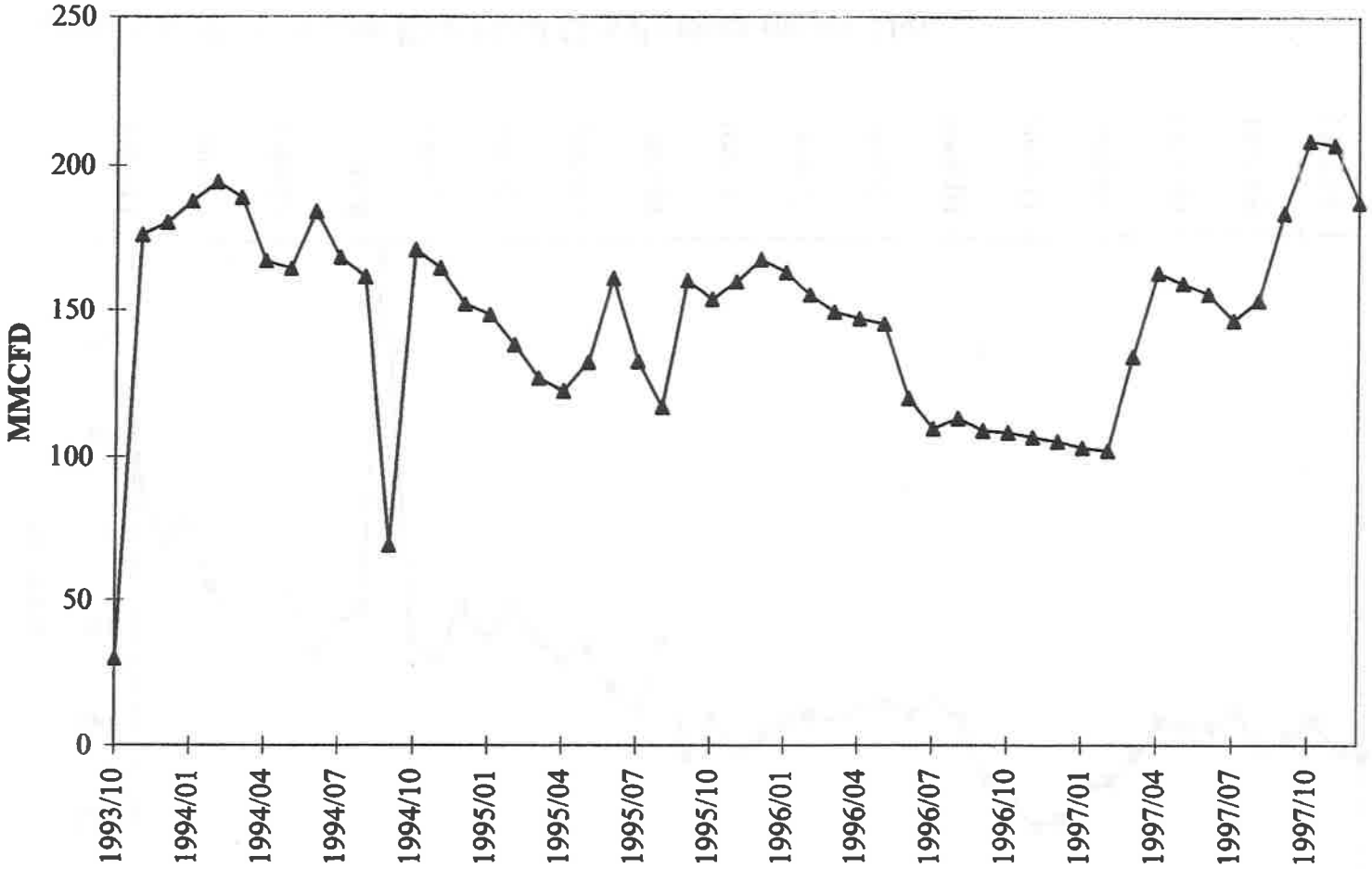


Figure 6.7. Northwest Gulf Field Gas Production per Day.

Source: AOGB, 1998.

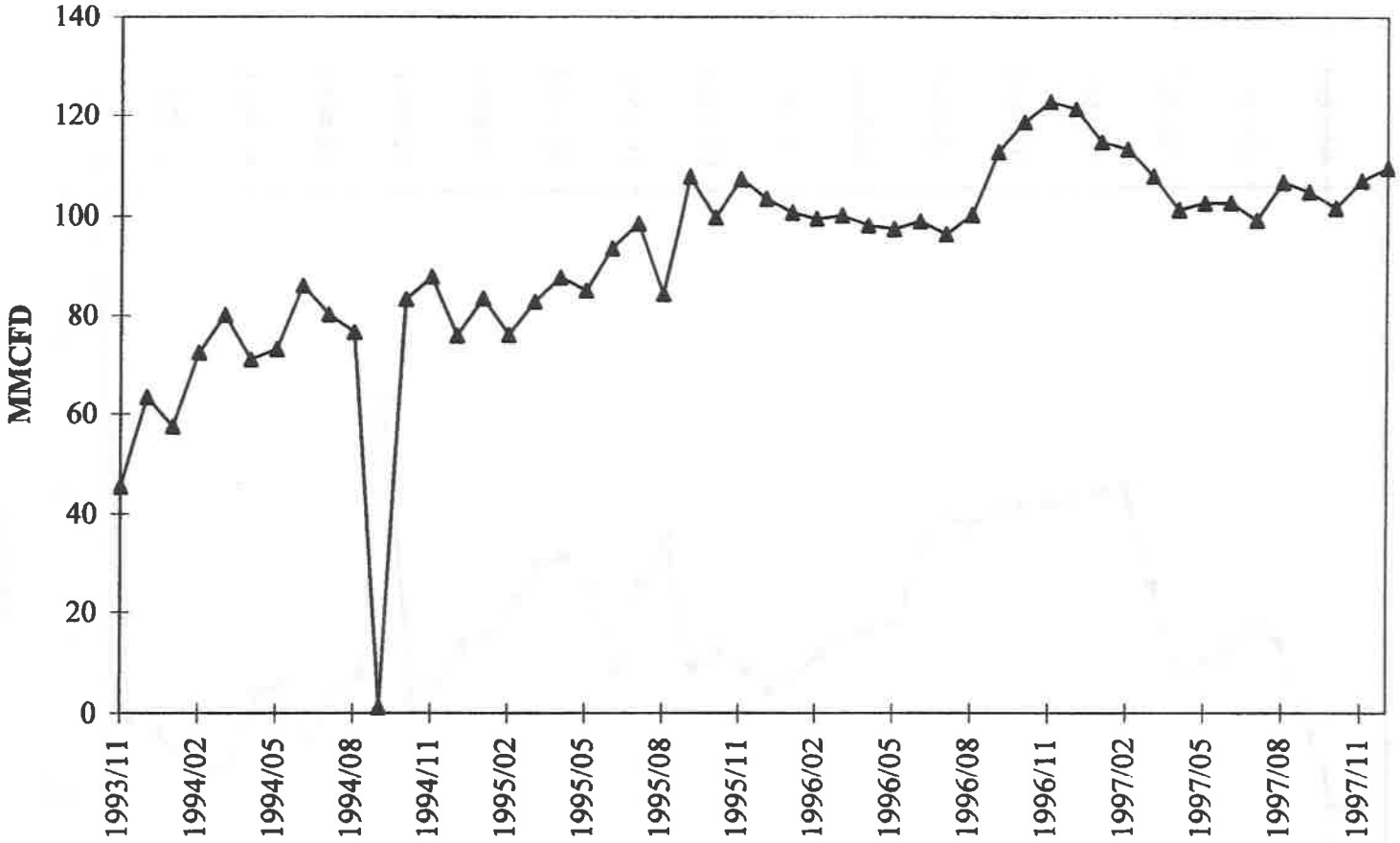


Figure 6.8. Bon Secour Bay Field Gas Production per Day.

Source: AOGB, 1998.

Mobil's tract 61 during 1998, which will add production from the BSB reservoir, and be processed in the Mary Ann Plant.

Table 6.5 shows the Exxon Gas Plant's 1996-1997 gas intake, intake by well, sales gas and sulfur production by month. This does not include the Hunt gas produced from NCG. Hunt, with 25 percent ownership of tract 114 within NCG, takes its gas in kind and processes the gas in Mobil's 823 plant. Sales gas declined from 94.5 percent to 93.9 percent of intake gas from January to December because of the much more sour BSB gas production that was increased to replace the lost production from NWG well 112-1. Sulfur production increased nearly 20 percent since mid-1996 when BSB production was lower. The Exxon plant is reported to be sulfur removal limited with the current mix of gas; the plant averaged 274 long tons per day during the fourth quarter, or 96 percent of its reported 285 lt sulfur capacity.

6.2.4 Exxon Production Summary: 1997

With Exxon's well 111-3 sustaining production over 70 MMCFD, Exxon's Gas Plant approached estimated capacity of 400 MMCFD at year end 1997. Well 114-3, producing near 65 MMCFD in April, 1998, pushed Exxon's production to 445 MMCFD, above plant capacity, even though the federal well 827-1 was shut in for balancing. Production from Exxon's 867 field, slated for 1998, clearly gives Exxon producibility exceeding plant capacity.

6.3 Development and Production of Shell's Fairway Field and Yellowhammer Project[115]

Shell Offshore Inc (Shell), having discovered gas on their $57 million state tracts 113 and 132, announced plans to develop the Fairway Field on November 8, 1989. Construction began in the first quarter 1990; the onshore plant and offshore production came on line December 5, 1991. Shell's Fairway Field was the second field brought into production. Natural gas was selling for $0.93 per MCF when Shell initiated production—about 10 percent of the industry's price outlook when Shell bid on the leases within the State's first lease sale ten years earlier.

6.3.1 Development Avoided Shipping Channel and Civil War Artifacts

With its May 1986 discovery well 113-1 confirmed by the late 1988 132-1 delineation well, and with time running on its lease, Shell filed for an application for an air permit on December 5, 1988, to develop and produce the Fairway Field three miles south of the entrance to Mobile Bay. Individual well platforms are connected to a Central Production Facility (CPF). Production from

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[115]This section is based on the following articles:

Gallaher, Dale and Michael J. Mahoney, "New technologies used in development of sour Fairway gas," OGJ, February 22, 1993, p. 57 - 62.

Gallaher, Dale and Michael J. Mahoney, "Fairway sour gas development proves new materials, monitoring," OGJ, March 1, 1993, p. 76 - 79.

"Yellowhammer: Alabama's Newest Resource," Shell internal undated publication.

Table 6.5
Exxon Plant Gas Per Day 1/96 - 12/97
MMCFD

		Wells												Sales	Sulfur Production
	Total gas	62-1	63-1	78-1	111-1	111-2	111-3	112-1	112-2	115-1	116-1	114-2	827-1		long tons
Jan 96	369.803	18.342	26.255	56.190	26.293	66.699		42.251	28.146	10.912	27.049	33.872	33.794	349.356	197.184
Feb	361.918	17.460	26.151	55.971	26.584	66.622		38.000	24.390	11.179	26.838	32.984	35.740	341.231	188.793
March	354.276	16.604	26.320	57.309	25.489	65.851		31.322	26.919	10.753	26.293	33.148	34.268	333.180	189.715
April	343.533	15.684	27.426	55.109	24.805	64.476		30.564	27.352	10.373	26.346	27.477	33.927	322.650	175.432
May	342.871	15.955	26.098	55.480	24.776	64.103		31.311	25.319	10.503	28.036	27.809	33.481	323.156	179.809
June	318.139	15.844	27.122	56.093	23.869	62.716		9.728	23.772	10.498	27.766	27.674	33.056	299.799	176.438
July	303.820	14.927	26.438	55.115	23.933	61.041		0.000	24.902	10.150	25.060	29.838	32.416	285.236	171.502
August	305.442	15.073	27.305	54.670	23.802	60.348		0.000	25.634	9.692	19.468	37.142	32.310	286.616	165.085
Sept.	326.871	25.932	32.609	54.082	25.028	59.219		0.000	24.945	10.135	26.745	36.763	31.414	307.437	211.976
Oct.	345.252	29.649	34.330	54.703	25.880	58.617		0.000	24.094	11.233	30.946	40.240	35.559	324.367	225.331
Nov.	342.790	31.833	35.017	55.994	25.194	58.232		0.000	23.435	10.906	29.584	37.036	35.559	320.568	228.521
Dec	336.454	31.324	33.505	56.499	24.698	57.543		0.000	23.199	9.887	28.691	36.479	34.628	315.998	233.454
Jan 97	323.529	27.930	30.670	55.238	24.778	56.785		0.000	22.078	9.529	26.708	36.488	32.891	304.461	216.844
Feb.	319.873	26.106	29.612	56.750	23.933	58.930		0.000	22.916	7.321	26.457	34.893	33.709	298.624	209.479
Mar	342.898	21.568	29.380	56.936	23.033	58.562	36.162	0.000	16.527	9.310	25.097	32.794	33.529	322.317	227.720
April	364.524	16.143	29.291	55.961	23.489	57.886	81.905	0.000	0.000	9.227	24.140	34.176	32.307	342.205	254.940
May	362.082	19.067	28.826	54.781	22.906	56.425	80.262	0.000	0.000	9.550	22.476	36.230	31.558	342.406	264.948
June	357.120	19.416	28.334	55.001	22.651	55.011	78.344	0.000	0.000	8.671	25.244	33.445	31.002	334.106	260.923
July	342.793	20.662	26.560	52.118	21.567	50.991	74.111	0.000	0.000	9.373	24.757	32.856	29.799	319.802	247.640
August	358.390	26.261	26.625	53.874	21.805	51.154	74.830	0.000	5.853	9.531	25.120	33.061	30.276	335.166	271.217
Sept.	383.054	25.642	25.141	54.058	21.346	50.503	73.294	17.586	21.161	8.409	23.916	32.659	29.340	360.993	269.194
Oct.	401.757	24.157	23.332	54.290	22.446	51.822	72.691	41.023	20.672	8.367	22.572	31.663	28.723	377.521	282.238
Nov.	407.684	23.543	28.998	54.581	21.439	53.296	74.502	38.424	19.486	9.590	22.661	31.893	29.281	380.804	273.828
Dec	383.913	23.806	31.295	54.453	21.252	51.563	70.359	24.825	19.480	8.709	22.896	26.772	28.504	360.258	266.545

Source: Alabama Oil and Gas Board, 1997.

the CPF is pipelined 17 miles to Shell's Yellowhammer gas treatment plant. The plant, named for the Alabama state bird, is located east of the Mobil Mary Ann Plant in the general vicinity of Coden, Alabama. The plant is sized to process 200 MMCFD of sour gas (0.8 percent average H_2S) and produce 190 MMCFD sales gas, 60 LTD sulfur and as much as 2,300 b/d mixed NGLs.

The Shell Fairway gas contains about 3 percent CO_2, NGLs that are not present in either Mobil's or Exxon's dry gas, and H_2S in the wells that ranges from 100 ppm to 1.5 percent within tract 113; 150 ppm in well 132-1. The gas in the west dune of Shell's tract 113 has lower H_2S than the gas in the east dune. (See dunes in Figures 5.8 and 5.9.)

Like Mobil's and Exxon's plants, Shell's plant was built to achieve rigorous environmental protection and safety standards. Computer operated electronic sensors, automatic shutdown devices, and warning systems monitor all processes. Electronic sensors throughout the surrounding community constantly monitor for H_2S.

Downhole production tubing, wellheads, well flow lines and primary processing on the CPF employ bimetallic nickel-alloy CRA materials. Downstream of the corrosion inhibitor injection, Shell employs carbon steel for the pipelines to shore. In contrast to Exxon's and Mobil's processing approach, Shell's gas is dehydrated onshore, rather than on the platform. Shell avoids corrosion of the pipeline and fittings by using Champion T265 corrosion inhibitor chemical, which Shell developed. As pipeline corrosion is a significant concern, and Norphlet gas has all of the ingredients necessary for severe metal-loss corrosion—H_2S, CO_2 and free water—Shell's approach is unique among the Norphlet producers. The liquid hydrocarbons and water are separated in the first step at the plant. Then the contaminants in the gas are removed—H_2S and CO_2—and the gas, NGLs and sulfur are sold. Pipelines from the offshore field bend around Dauphin Island to avoid underwater magnetic anomalies possibly related to sunken ships and artifacts from the Battle of Mobile Bay.

Shell planned for a budget of $440 million to develop gas wells, offshore facilities, pipeline system, and the Yellowhammer plant, broken into the following categories. The plant was designed to accommodate peak production rather than a reduced flat production profile.

	Millions
Wells	$175
Platforms/Jackets	$20
Offshore Facilities	$25
Pipelines/flowlines	$55
Yellowhammer Plant	$90
Future wellfield improvements	$75
Total	$440

The construction contract for the plant was awarded to a team comprised of BE&K of Birmingham and Davy McKee Corp of Tulsa. Davy performed the engineering and major equipment procurement services. BE&K constructed the plant. Local contractors, David Volkert

and Associates of Mobile, and J. H. Adams of Chickasaw constructed the plant office building and access roads. Construction of the plant, building and roads required about 400 workers. During construction, the Yellowhammer plant created more than 500 jobs, primarily instate. Construction started in 1989 and was completed in later 1991. Start up occurred on December 5, 1991. The plant operates with 23 technicians and 14 staff. Offshore operations are handled by four crews of two technicians each.

6.3.2 Shell Fairway Field Production History

Figure 6.9 shows that Shell's production was sustained near their 200 MMCFD plant capacity between September 1992 and March 1994. Production has declined since. The field also has scaling problems related to calcium fluoride and calcium carbonate. Well 113-3 has been down for a workover since December, 1997. The Yellowhammer gas plant processed between 92 - 170 MMCFD during 1996 and 1997 including 10 - 11 MMCFD from Mobil's 95-3 well as shown on Table 6.6. With Shell's declining production, Mobil's 3.2 percent H_2S gas fits into Shell's processing capacity. Shifting the gas to Shell made room in the Mary Ann Plant for Mobil to take in the 823-A4 gas. Gas from Chevron's 1.6 percent H_2S well 863-3, which came online in February 1997 at 18 MMCFD, is now being processed at Shell's plant. The well averaged 39 MMCFD during the fourth quarter, 1997. Shell still has unused capacity in its Yellowhammer plant.

6.3.3 Federal 821 Field and Shell Summary

Shell purchased the producing BP joint federal/state 821/109 Field in August 1996 (92.5 percent federal/7.5 percent state). BP had only the one successful Norphlet discovery. The 821 gas, 100 ppm H_2S, will continue to be processed offshore on the 821 platform. Pipeline quality gas is brought to shore in Mobile County on DIGS for connection with the interstate pipeline. Figure 6.10 shows the 821 production history. The field shut down in October 1994 with a severe scaling problem that plugged the well. After that, BP constrained production to 15 MMCFD to manage the scaling accumulation problem. Shell hopes to restore production to about 20 MMCFD. Shell is evaluating a second well on tract 821.

6.4 Development and Production of Union and Chevron Federal Projects

Union and Chevron dominate recent Norphlet development activities on the eastern and western edges of the federal Mobile Bay OCS. These companies acquired the acreage for much lower lease bonus amounts as shown in Section 3.0 because they started later, after gas prices dropped. But nothing is low cost when dealing with the Norphlet.

Development of Union's and Chevron's Norphlet discoveries in western Mobile Bay OCS overcame superpressurized reservoirs (>15,000 psi) as well as the other hostile downhole challenges encountered in Norphlet reservoirs: H_2S, CO_2, water, 420° F temperatures.[116] Several gas wells have been damaged or lost during either completion or start-up, as show on

[116]Offshore, "Unocal building range of solutions for drilling deep Norphlet environment," June, 1995, p. 32 - 33.

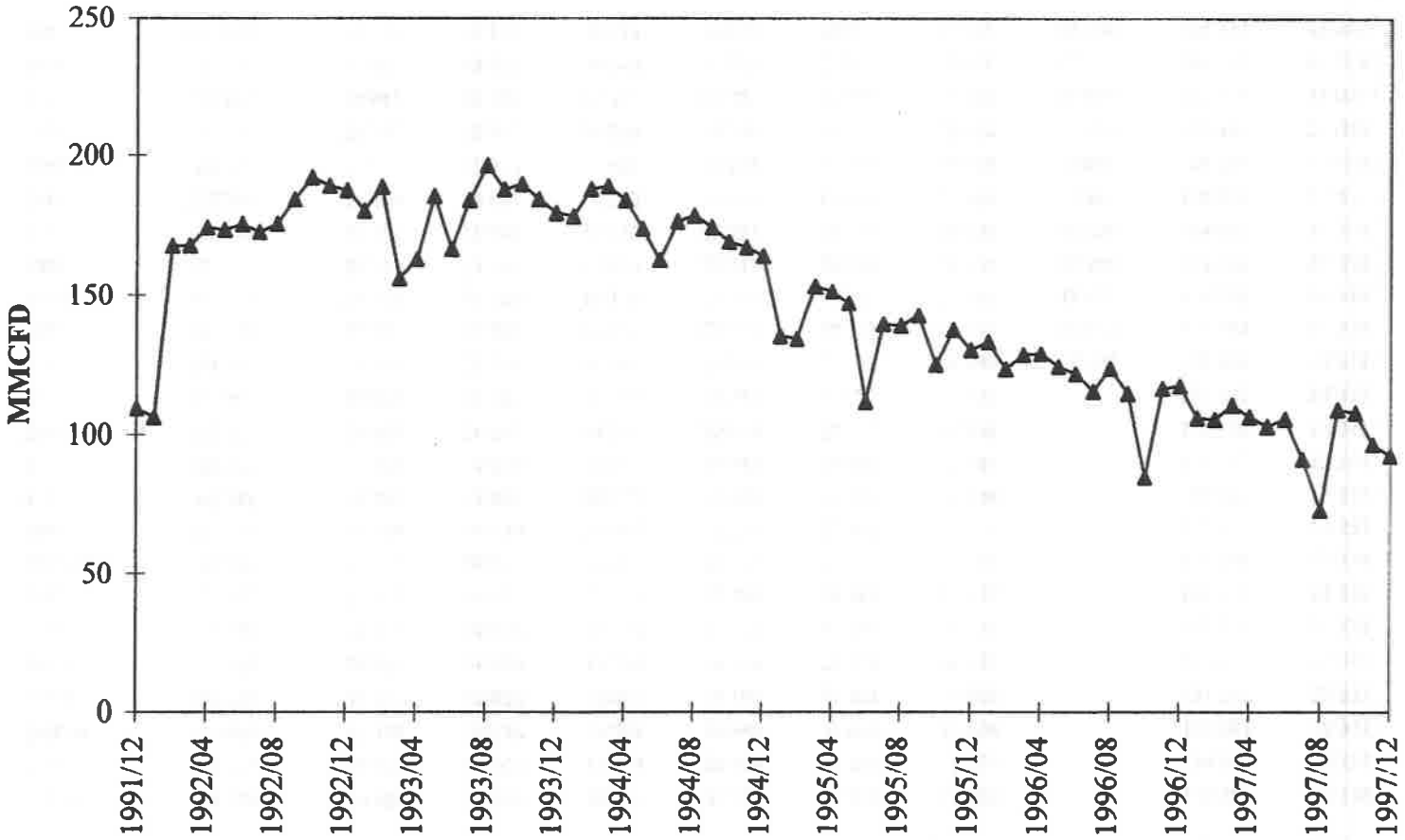


Figure 6.9. Shell Fairway Field Gas Production per Day.

Source: AOGB, 1998.

Table 6.6
Shell Gas Per Day 1/96 - 12/97
MMCFD

		Wells								
	Total gas	113-1	113-2	113-3	113-4	132-1	Mobil 95-3	Chevron 863-3	Sales Gas	Sulfur Production Long tons
Jan 96	144.154	29.085	30.529	22.494	22.623	28.416	11.008		135.381	20.129
Feb	132.013	26.115	26.913	15.104	29.889	25.360	8.726		124.048	16.552
March	138.640	27.108	29.288	15.288	30.946	25.944	10.066		131.261	18.935
April	139.006	26.437	27.872	19.968	29.160	25.501	10.068		131.761	22.933
May	135.156	26.098	26.962	18.109	28.349	24.818	10.821		130.597	23.000
June	133.049	25.724	25.894	19.205	27.373	23.401	11.429		128.371	21.833
July	126.902	24.730	24.775	17.193	26.436	22.157	11.610		121.729	18.226
August	130.641	25.631	26.453	18.345	26.514	22.691	11.008		124.348	16.194
Sept.	124.971	25.876	24.680	16.496	25.039	22.467	10.414		120.674	19.633
Oct.	92.185	19.692	18.844	10.362	18.862	17.129	7.296		86.592	13.806
Nov.	129.369	26.510	25.359	15.419	26.042	23.016	13.023		121.110	17.100
Dec	128.751	26.958	24.346	18.395	25.083	22.421	11.548		119.200	17.387
Jan 97	122.447	26.690	22.684	16.497	23.545	21.428	11.603		107.792	18.452
Feb	123.769	26.294	23.068	10.989	23.675	21.606	11.449	6.688	114.658	18.714
Mar	144.375	26.084	22.678	17.595	23.222	20.977	12.623	22.417	134.982	21.548
April	164.969	25.178	21.150	15.176	21.751	19.763	15.508	42.622	150.287	20.484
May	166.298	25.577	21.491	14.317	22.212	19.540	19.544	45.508	157.597	22.323
June	170.454	24.390	20.466	17.372	21.327	18.713	20.960	43.756	155.647	22.355
July	122.265	24.904	20.483	5.103	21.635	19.405	23.465	9.541	116.075	17.871
August	96.344	22.877	12.657	6.481	19.350	11.662	25.816	0.000	90.745	15.129
Sept.	134.840	23.542	20.602	14.874	19.716	26.733	22.035	5.122	121.980	20.032
Oct.	154.597	24.641	20.723	13.723	21.289	27.565	13.508	34.455	147.574	31.903
Nov.	155.539	23.685	19.192	6.158	19.215	25.511	15.926	42.377	144.116	30.032
Dec.	142.843	26.143	18.856	0.517	19.212	28.018	12.543	38.768	134.380	49.548

Source: Alabama Oil and Gas Board, 1997.

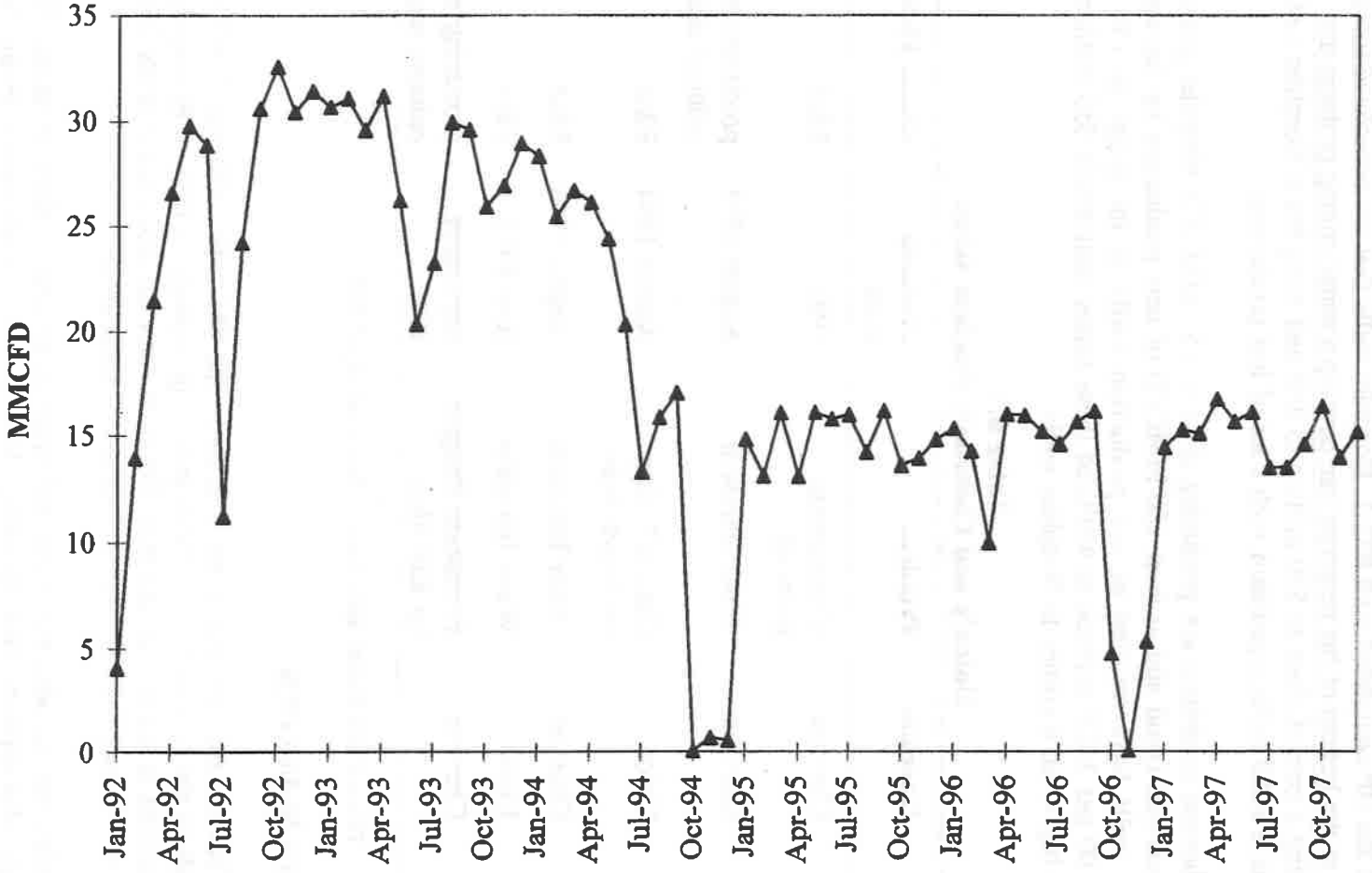


Figure 6.10. State 109 / Mobile 821 Field Gas Production per Day.

Source: Dwights/PI, 1998; AOGB, 1998.

Table 6.7. Chevron's well 861-1 blew out underground in 1985 after discovering Norphlet gas. Three of the wells have a produced water problem; i.e., so much water has intruded that the wells are either P&A'd or only can produce at a reduced rate. This is the same problem that Shell has with the BP-completed well 821-1. Norphlet wells that are completed too close to the water contact at the bottom of the reservoir can develop a water coning problem due to the tight rock. Assuming a cost of close to $30 million to drill and complete a Norphlet well, these six wells represent a $180 million problem with a lot of lost production.

Union and Chevron combined are producing close to 150 MMCFD Norphlet gas at year end 1997 with plans that could add at least 100 MMCFD of new production by the end of 1998. The problem wells have resulted in lost production easily in the range of 150 MMCFD. Assuming $1.00 per MCF netback to wellhead these losses total nearly $55 million annually. Everything is big when it comes to Norphlet wells.

Table 6.7
Union's and Chevron's Problem Wells

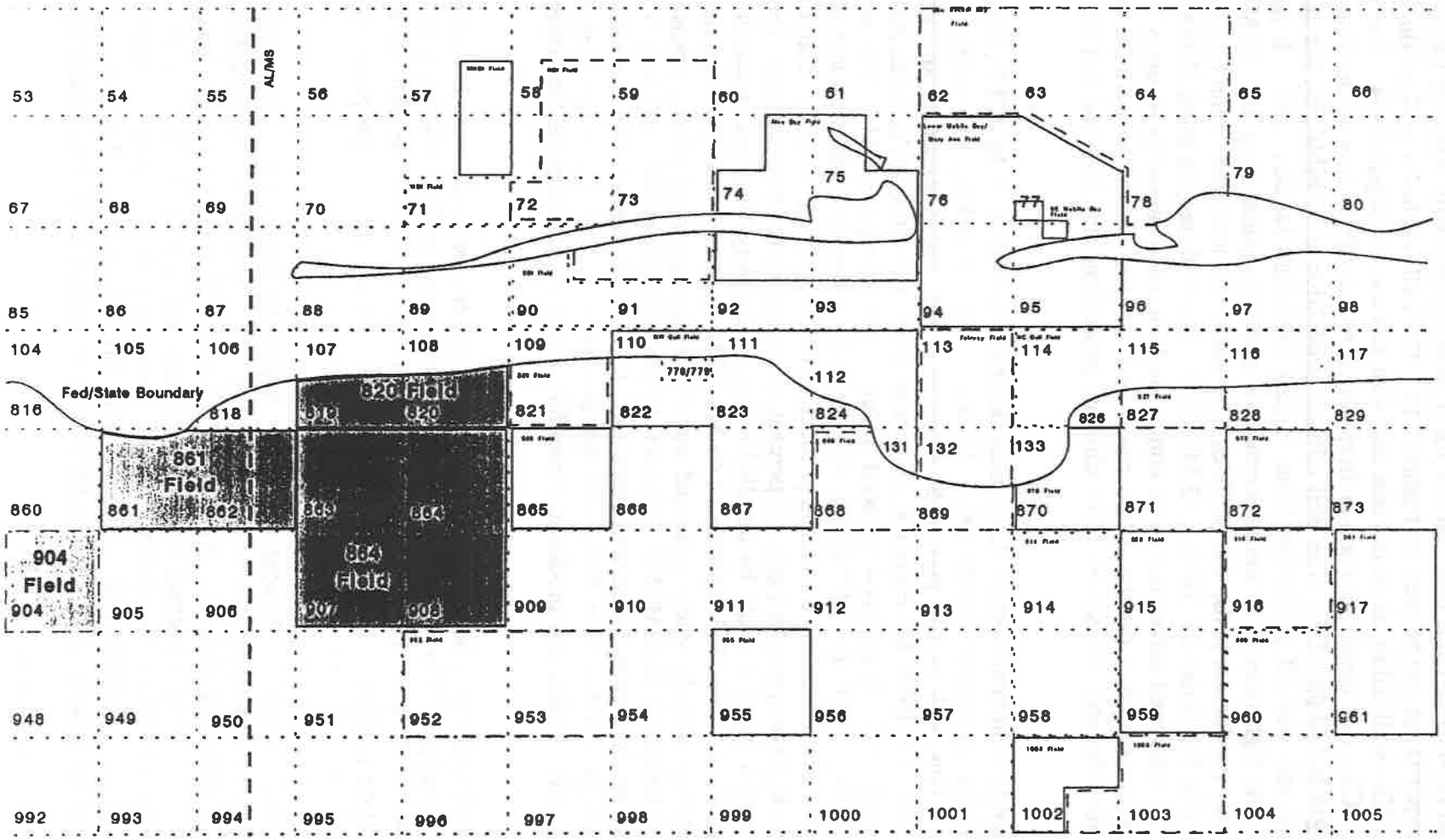
Well	Operator	Problem	Problem Date	Status 12/97
861-1	Chevron	Underground Blowout	1985	P&A
861-8	Chevron	Water Intrusion	August 1994	producing at reduced rate
904-1	Union	Casing/Tubing excessive wear	August 1994	P&A
864-3	Chevron	Water Intrusion	August 1996	P&A
916-B3	Union	Water Intrusion	June 1995	P&A
872-1	Chevron	Formation Plugged by Kill Fluid	September 1995	producing at reduced rate

Source: Telcons with Union and Chevron Personnel, April 1997.

6.4.1 Western Mobile OCS

Union and Chevron are developing discoveries in the 861, 904, 820 and 864 Units on the Mississippi side of the Mobile OCS. These include processing on Central Processing Facilities (CPF) on platforms at tracts 864 and 904. Together these facilities can process 230 MMCFD of Norphlet gas. Figure 6.11 shows the location of these fields.

Union's 904 platform includes two wells and processing capacity sized to handle 80 MMCFD of Norphlet gas plus separate crew quarters. Four crew members serve a seven day rotation. Processing anticipates 120 ppm average H_2S. Gas from tracts 904 and 861 is processed on the 904 platform and flows to shore via a 10-inch connection to the Chandeleur pipeline to the Pascagoula refinery, where it connects to the Koch Gateway Interstate.



Source: AL Oil and Gas Board, 1986, 1993a; MMS, 1991, 1993a.
Blocks and structures not drawn to scale.

Figure 6.11. Western Mobile OCS Union & Chevron Fields.

Unocal's initial production came from the 904 Field, which started with 904-1 on December 22, 1993 at 20 MMCFD, as can be seen on Figure 6.12. The well reached a peak production rate of 22.3 MMCFD—well below its record test rate—but was lost in August 1994. The well has been P&A'd. Chevron started production from 861-8 March 1994, flowing to Union's 904 facility. The gas is 120 ppm H_2S. The well initiated production at 30 MMCFD, but developed water problems and was off production from August 1994 until January 1995. It has never produced near the high rates of its initial production, currently maintaining 10 - 12 MMCFD. This was the only production to the 904 facilities after 904-1 was lost until Union brought a new well 904-2 on line December 24, 1996 at 32 MMCFD. The well stepped up to 52 MMCFD in February 1997. This well solved the water coning problem encountered in so many Norphlet wells by being completed at the top of the reservoir sand, just below the pyrite zone found between the Norphlet and Smackover. The ultimate production rate from the 904 field is yet unknown.

Chevron initiated production from its 820-1 well October 21, 1996 at 25 MMCFD, ramping up to 50 MMCFD for the month of April 1997. The well averaged 34 MMCFD during the fourth quarter 1997. This well is 100 ppm H_2S. Chevron's well 864-3 started production at 20 MMCFD October 21, 1996, but encountered a water production problem and was shut in. It was P&A'd April 1997. Well 864-4 spudded in July, 1997, to replace 864-3. The well came online in December, 1997, at 16 MMCFD, 40 ppm H_2S. Ultimately, the well is expected to produce 30 MMCFD. Well 863-3 initiated production February 19, 1997 at 18 MMCFD. The well tested with H_2S unexpectedly high, 1.6 percent, to process on the 864 platform. Production was delayed until a pipeline could be installed to Shell's Fairway Field for processing in the Yellowhammer Plant. Well 863-3 produced 44 MMCFD April thru June 1997, encountered a mechanical problem with the safety valve and was shut-in through April 1988 for repairs. The well returned to service at 44 MMCFD. Figure 6.12 shows that Chevron's and Spirit's western Norphlet fields reached peak production April thru June, 1997, before they were beset with problems. Lost production from 863-3 and the downturns of 820-1 and 904-3 explain the October, 1997, dip. Added new production from 864-4 partially explains the December, 1997, upturn.

Chevron spudded well 819-1 September 1, 1996. The well reached total depth (TD) December 1996 and confirmed gas. The well was completed in December, 1997, and added to production January 1, 1998, at 22 MMCFD. Flowlines were constructed between the well and the 864B Central Production Facility. Flowline bundles are described as a six-inch gas pipeline, a three-inch solvent pipeline and a two-inch fuel gas pipeline.

Chevron contracted Ralph M. Parsons to provide design and procurement services for a $50 million natural gas treatment plant to be built at Pascagoula. The plant was described as the first of three phases, each providing 300 MMCFD of capacity. Planned completion was 1994.[117] Chevron decided, however, to forego onshore processing and treat its gas either on its own 864 platform, or Union's 904 and 916 platforms. This saved the cost of lengthy, expensive carbon steel pipelines from the eastern and western Mobile Bay OCS areas to Pascagoula. Instead, Chevron delivers its pipeline quality gas to DIGS for conveyance to the Chandeleur Pipeline to

[117]OGJ, Industry Briefs, October 19, 1992, p. 40.

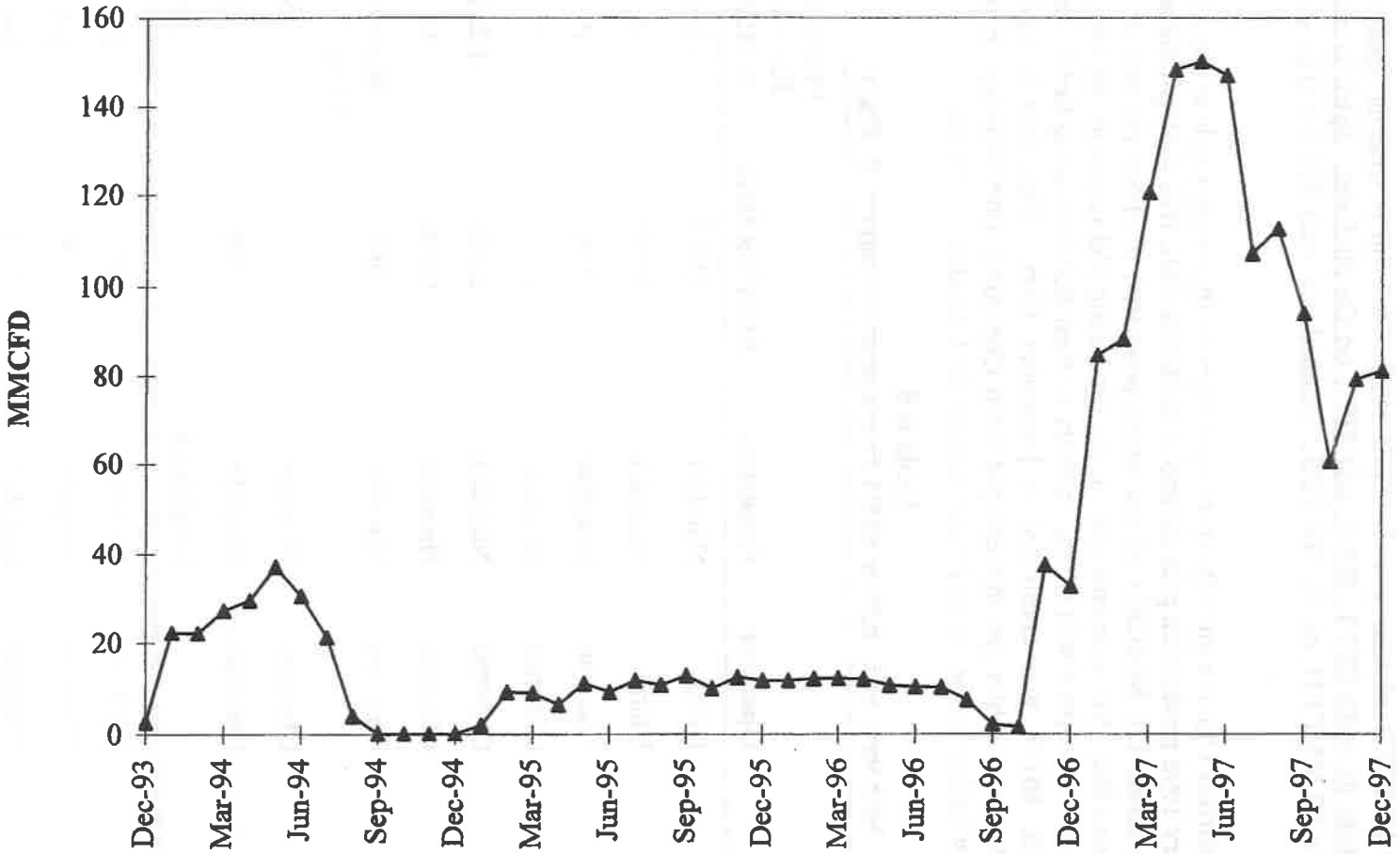


Figure 6.12. Mobile 820, 861, 863/4 and 904 Fields Norphlet Production.

Source: Dwights/PI, 1998; Foster Associates, Inc., 1998.

Pascagoula and the Koch interstate connection.

Chevron constructed facilities on the 864B platform Central Production Facility capable of processing 150 MMCFD of sour gas. In April 1998, Chevron is treating approximately 75 MMCFD gas from its wells 820-1, 864-4, and 819-1 on the platform. Spirit is treating 904-2 and 861-8, about 50 MMCFD, on the 904 CPF. Planned new well 904-3 will be treated on the 904 CPF.

Table 6.8 summarizes Union's and Chevron's activities on the western side of the Mobile OCS. Counting January 1998 production plus the 863-3 workover well, five wells produced about 170 MMCFD, with about 120 MMCFD of that being processed in either the 904 or 864 CPFs. Chevron's planned 862-1ST, a second well in the producing 863 reservoir, 863-4, planned for later in 1998, and 819-2 likely will fill the capacity of their 864 processing facility during 1999. A Miocene well, 861-9, was completed in December 1996. This well is reported to be pressurized with the Norphlet gas that escaped from Chevron's 1985 blowout. It is treated on the 904 platform before transport to Pascagoula on the Chandeleur pipeline.

Table 6.8
MO 904, 861, 820 & 863/4 Production Summary & Plans

Well	Operator	Formation	Start Up Date	Production Rate 1/98 MMCFD
904-1	Union	Norphlet	12/93	P&A
904-2	Union	Norphlet	12/96	39
861-8	Chevron	Norphlet	3/94	10
861-9	Chevron	Miocene	12/96	7
864-3	Chevron	Norphlet	10/96	P&A
820-1	Chevron	Norphlet	10/96	32
863-3	Chevron	Norphlet	2/97	Workover 44-April 1998
864-4	Chevron	Norphlet	12/97	~16
819-1	Chevron	Norphlet	1/98	~22
Total		**Combined**		**~170**
862-1ST	Chevron	Norphlet	1999	gas
863-4	Chevron	Norphlet	1999	gas
819-2	Chevron	Norphlet	1999	gas
904-3	Union	Norphlet	1999	gas

Source: U.S. DOI, MMS, 1998; Chevron, 1998; Union, 1998.

6.4.2 Eastern Mobile OCS

The eastern area of Mobile OCS includes Chevron's 100 percent owned 872 Field comprised of tracts 872 and 873 plus the 916 Unit consisting of 6-1/4 blocks shown on Figure 6.13—871 S/4, 915, 916, 917, 918, 961, and 962. Union and Chevron are equal 45.7 percent owners of the 916 Unit, with Bechtel's Fremont Energy Corp owning the rest. Union is the operator, although Chevron has drilled individual wells that provide gas to the processing facilities. The state boundary likely artificially truncates the Norphlet play in the area to the Alabama side of the line.

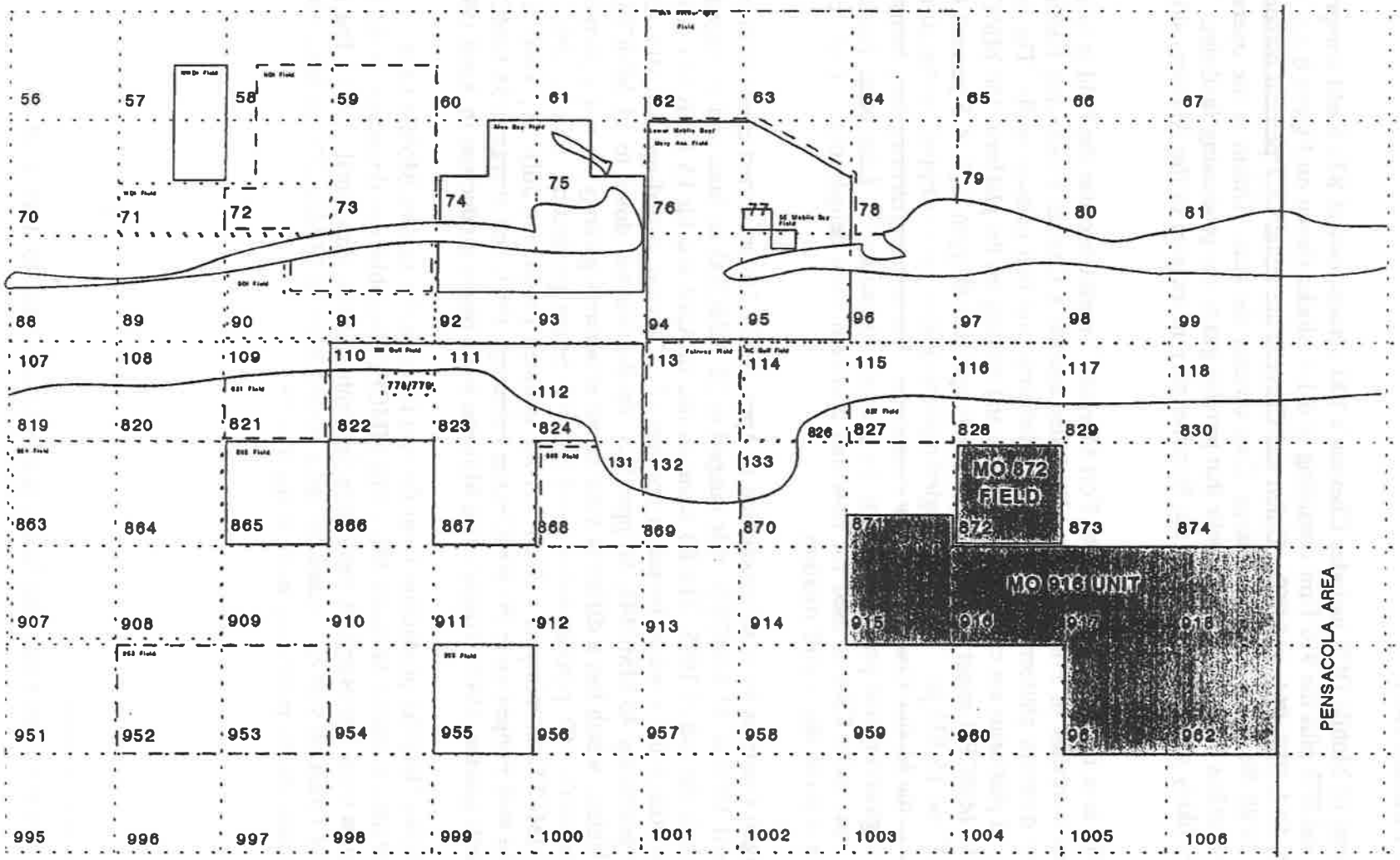
The Mobile 916 area facilities are called the Fort Morgan Complex because the field is located about 12 miles southeast of Fort Morgan. Facilities include a Central Processing Facilities platform, crew quarters platform, two wellhead platforms and two caisson wells. The three bridge-connected platforms are capable of producing and treating on the platform 150 MMCFD sour gas and 30 MMCFD sweet Miocene gas. The Norphlet is 60 ppm H_2S, 4.5 percent CO_2 flowing at 300° and 15,835 psi. The commingled pipeline quality gas is shipped on the 20-inch DIGS pipeline to the Mobile County Interstate connection. Enercon Engineering Inc, Houston, provided the engineering and procurement for the production facility.[118] Like other Norphlet developments, extensive CRA is used for flowlines upstream from dehydration. Eight crew members serve a seven day on/off rotation.

The Fort Morgan Complex initiated production in April 1995. Union started production from 916-A2 in April 1995 at 17 MMCFD; this ramped to 32 MMCFD in June and averaged 25 MMCFD through the end of 1995. 916-B3 came on line in April and hit 15 MMCFD in June 1995 before encountering a water intrusion problem.[119] Chevron started-up well 917-A2ST in April 1995 producing 40 MMCFD, 80 ppm H_2S. Production was down to 11 MMCFD in April 1997. Union, which had a different view of the structure's geology, is not a partner in this well. Chevron's 100 percent-owned well 872-A1 began production March 1996 and averaged 11 MMCFD in mid-year. Well 961-A2 initiated production July 31, 1996 at 24 MMCFD. The well ramped up to 50 MMCFD in February, 1997, and averaged 35 MMCFD during the fourth quarter, 1997. Union's two Miocene wells began production in April 1995.

Figure 6.14 shows Norphlet production from the two fields in the eastern Mobile OCS. Union and Chevron produced between 100 - 110 MMCFD Norphlet gas delivered to the 916 platform facilities from five Norphlet wells from September, 1996, thru April, 1997. The loss of 916-B3 and a repair on 916-A2 caused the spike shown down to 58 MMCFD in June, 1997. Table 6.9 summarizes the producing wells to the 916 CPF.

[118]OGJ, "Another Mobile Block production facility nears completion," Jan. 30, 1995, p. 91.

[119]OGJ, "Unocal steps up gas/condensate production," May 29, 1995, p. 24.



Boundaires not drawn to scale.
Source: Foster Associates, Inc., 1997.

Figure 6.13. Mobile 916 & 872 Units.

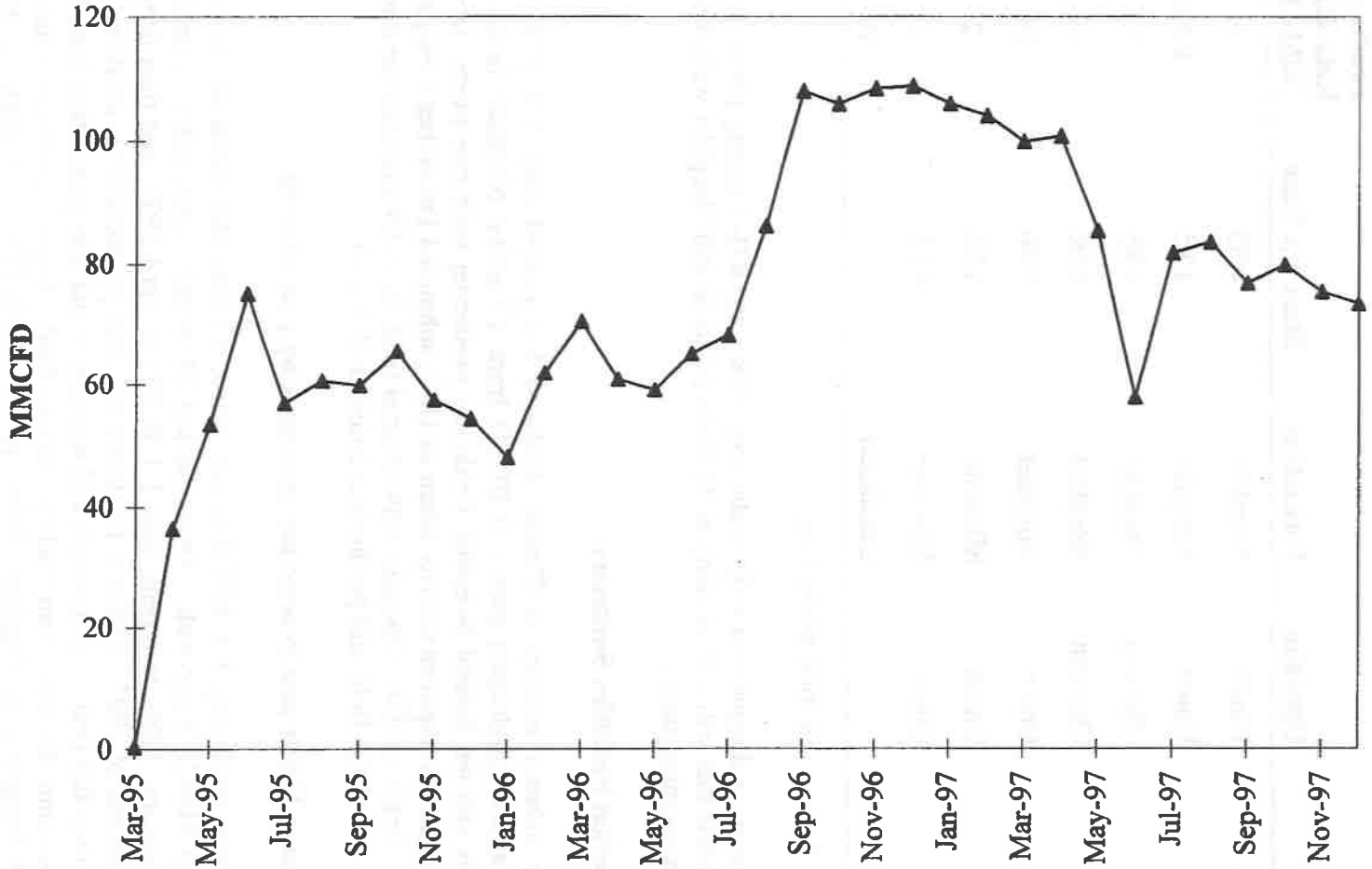


Figure 6.14. Mobile 916, 961, and 872 Fields Norphlet Production.

Source: Dwights/PI, 1998; Foster Associates, Inc., 1998.

Table 6.9
MO 916 Processing

Well	Operator	Formation	Start Up Date	Production Rate 4Q/97 MMCFD
916-A2	Union	Norphlet	4/95	19
916-B3	Union	Norphlet	4/95	P&A
917-A2	Chevron	Norphlet	4/95	10
872-A1	Chevron	Norphlet	3/96	12
961-A2	Union	Norphlet	7/96	34
915-1	Union	Miocene	4/95	2
961-1	Union	Miocene	4/95	2
Total		Combined		79

Source: U.S. DOI, MMS, 1998.

Union and Chevron will spud two wells in the area, 918-1 and 871-1 during 1998. Plans include a drilling schedule that will add as many as 12 more Miocene and Norphlet wells between 1998 and 2004 as economics justify.

6.5 Production Facilities Summary

Extensive gas industry activity in Coastal Alabama has yielded over 7.5 TCF recoverable reserves and annual production over 1.0 BCFD from 17 active Norphlet fields. Six state Norphlet fields and ten federal Norphlet fields are producing with one more, Destin Dome, scheduled to begin development activity when its DPP, submitted December 1996, is approved. Production will begin in 2001. One joint state/federal field, 821/109 straddles the three-mile line with 92.5 percent of the field and production considered federal.

6.5.1 Producing Fields and Production Increases by End of 1998

Forty wells were producing 1.1 BCFD in the active 17 Norphlet fields in February, 1998, averaging 27.5 MMCFD per well. Over the last 24 months, production ramped from 880 MMCFD in January, 1996, to a peak over 1.1 BCFD in April 1997, and then dropped below 1.0 BCFD at the end of 1997. Figure 6.15 shows that state production has remained stable near 600 MMCFD over this period, as Exxon's 112 workovers and new production from Mobil's 95-5 and 75-1 overcame declines from Shell's Fairway field. Federal production increased from 300 MMCFD beginning in October, 1996, to 530 MMCFD at its peak in April, 1997. Production thereafter was offset by lost production from problem wells (863-3 & 916-B3) and natural decline observed in Mobil's 823 field. New federal wells increased year end 1997 net production by 80 MMCFD above the January, 1996, production level. Table 6.10 shows ten

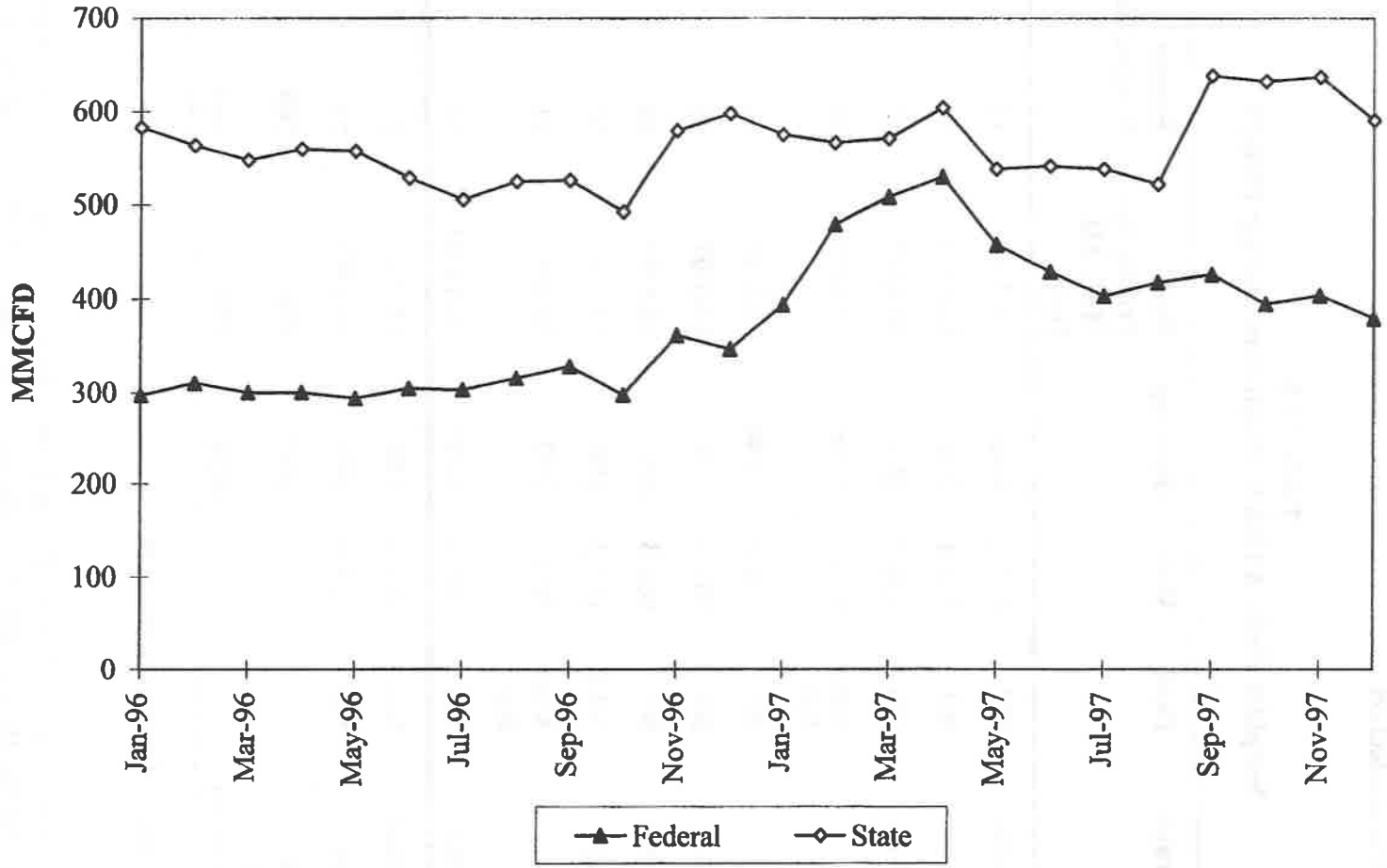


Figure 6.15. State and Federal Norphlet Production Offshore Alabama (1996 - 97).

Source: AOGB, 1998; Dwights/PI, 1998; Foster Associates, 1998.

new wells added to production during 1996-1997, plus two added in January-February, 1998. Ten wells added 499 MMCFD of new production at their peaks, sustaining 368 MMCFD based on year end 1997 data. Recent information about the new Chevron and Exxon wells adds 76 MMCFD of new production.

Table 6.10
Norphlet Wells Added to Production during 1996-97

Operator	Field	Well	Start-up	Peak Production MMCFD-Date	Recent Production
Chevron	872	872-1	3/96	14-3/97	13
Spirit	961	961-1	7/96	50-1/97	32
Chevron	820	820-1	10/96	50-4/97	32
Mobil	Mary Ann	95-5	11/96	72-12/96	40
Spirit	904	904-2	12/96	60-8/97	39
Mobil	869	869-3	2/97	83-3/97	61
Chevron	863	863-3	2/97	44-5/97	44
Exxon	NWG	111-3	3/97	82-4/97	70
Mobil	Aloe Bay	75-1	7/97	28-9/97	21
Chevron	864	864-4	12/97	16-12/97	16
Chevron	820	819-1	1/98	22-2/97	22
Exxon	NCG	114-3	2/98	54-4/97	54
Total Added Production			**1997**	**499**	**368**
			4/98	**575**	**444**

Source: Telcons with operators.

Besides the five wells planned for the Destin Dome Field development, 16 wells are shown on Table 6.11 that potentially will added to production by year end 2000. The wells are listed as TA, drilling, workovers, or under evaluation for spudding within 12 months. Table 6.11 shows their December 1997 status.

Table 6.11
Norphlet Wells to Add to Potential Production by Year-end, 2000

Operator	Field	Well	Status December, 1997
Chevron	820	819-1	TA; Start-up January 1, 1998
Exxon	North Central Gulf	114-3	TA; Start-up February 10, 1998
Mobil	823	823-A5	TD; 2/98
Mobil	914	914-4	Drilling
Shell	Fairway	113-3	Complete Workover
Chevron	861	862-1	Spud Sidetrack, 1998
Chevron	863	863-4	Spud, September 1998
Chevron	819	819-2	Planning
Mobil	Mary Ann	95-4	TA; reevaluation 1998
Exxon	867	867-1	TA; Produce 1998
Mobil	BSB	61-1	Spud project w/Exxon, 1998
Mobil	Aloe Bay	75-2	Spud, 1998
Spirit/ Chevron	916	918-1 871-1	Spud, May 1998 Planning
Shell	821	821-2	Planning
Spirit	904	904-3	Spud, After 918-1

Source: Telcons with operators.

6.5.2 Sour Gas Processing Capacity and Utilization

The start up of Mobil's Aloe Bay Field, Mobil's 823-5 and 914-3 wells, expansion of Chevron's 820 and 864 Fields by two producing wells, recovery of Shell's 113-3 workover, and Exxon's 114-3 well will move production from Coastal Alabama fields toward capacity of existing gas treating facilities during 1998. Table 6.12 shows the existing processing capacity and amounts of sour gas processed in these facilities during December 1997. The plants operated at 72 percent of capacity at year end, 1997.

Table 6.12
Gas Processing Facilities in Mobile Bay Region
(MMCFD)

Operator	Onshore Capacity	Offshore Capacity	Total Capacity	Capacity Use 4Q Avg/ 1997
Mobil Mary Ann	180	0	180	132
Mobil 823	300	0	300	207
Shell (821)	0	60	60	15
Yellowhammer	200	0	200	151
Exxon	400	0	400	398
Unocal 916	0	150	150	62
Unocal 904	0	80	80	50
Chevron 864	0	150	150	79
Total Capacity	**1080**	**440**	**1520**	**1094**

Source: Foster Associates, 1997; Alabama Oil and Gas Board, 1997.

6.5.3 Gas Production Summary through 1997

Mobile Bay Norphlet production exceeded 1 BCFD on a sustained basis for the first time in 1997, averaging 1.02 BCFD for 1997, 371 BCF for the year--18 percent more than 1996 production of 863 MMCFD Norphlet gas. Annual state production since 1988 is shown on Table 6.13. Annual federal production is shown on Table 6.14. Cumulative production has amounted to 1.7 TCF of Norphlet; 288 BCF Miocene. Miocene is in decline.

State Norphlet production rose to nearly 550 MMCFD during the first quarter of 1997 with the addition of MOEPSI's well 95-5 and Exxon's well 111-3. State production stepped up in the late summer when Aloe Bay well 75-1 came online and when Exxon's workovers on 112-1 and 112-2 come back online. State production averaged 580 MMCFD for the year. Federal Norphlet production increase by 38 percent in 1997 over 1996 and averaged 435 MMCFD.

Gas production began in Alabama state waters in 1987 when MOEPSI first produced gas from its Miocene well in the Southeast Mobile Bay Field. Production from this well was limited and was used solely as fuel for ongoing operations. Production ceased after 1989. The Mary Ann Field began production in 1988. Shell's Fairway Field started up in late 1991 along with MOEPSI's federal 823 Field. BP brought its 821/109 Field online in early 1992, and Exxon started its three fields in late 1993.

Table 6.13
Summary of Gas Production in Mobile Bay State Waters by Reservoir and Field
(BCF)

State Field	Current Operator	1988	1989	1990	1991	1992	1993	1994	1995	1996	'1997	Cumulative Thru 1997
Miocene Fields												
East Mississippi Sound	Legacy	-	-	-	-	-	-	-	0.1	1.8	0.1	2.0
Goose Bayou	Legacy	-	-	-	-	-	-	-	0.1	1.3	0.1	1.5
North Dauphin Island	Callon	-	-	-	0.2	19.3	15.9	11.1	7.4	3.8	2.1	59.8
Northeast Petit Bois Pass	Offshore Group	-	-	-	-	-	-	0.4	0.1	1.2	0.5	2.1
Northwest Dauphin Island	Offshore Group	-	-	-	-	0.6	0.9	2.0	1.2	0.9	0.6	6.2
South Dauphin Island	SCANA	-	-	-	-	-	0.6	3.5	2.6	1.5	0.7	8.9
Southeast Mobile Bay	MOEPSI	0.2	0.1	-	-	-	-	-	-	-	-	0.3
Subtotal Miocene		0.2	0.1	-	0.2	19.9	17.4	17.0	11.5	10.5	4.1	80.9
Norphlet Fields												
Aloe Bay	MOEPSI	-	-	-	-	-	-	-	-	-	3.5	3.5
Bon Secour Bay	Exxon	-	-	-	-	-	3.3	25.8	33.8	38.7	38.7	140.2
Fairway	Shell	-	-	-	3.4	63.1	65.8	64.2	50.1	43.7	36.7	326.9
Lower Mobile Bay - Mary Ann	MOEPSI	9.3	12.8	19.9	29.3	29.8	31.6	31.4	34.2	38.8	45.8	283.0
North Central Gulf Mobile Area	Exxon	-	-	-	-	-	1.7	32.0	32.2	32.0	28.3	126.2
Northwest Gulf Mobile Area	Exxon	-	-	-	-	-	11.8	60.0	52.3	46.8	58.1	229.0
State 109/ Federal 821	Shell	-	-	-	-	0.7	0.8	0.5	0.4	0.3	0.4	3.1
Subtotal Norphlet		9.3	12.8	19.9	32.7	93.5	115.0	213.8	203.1	200.2	211.5	1,111.9
Total BCF		**9.5**	**13.0**	**19.9**	**32.9**	**113.4**	**132.4**	**230.8**	**214.6**	**210.7**	**215.6**	**1,192.8**
MMCFD		**26.0**	**35.6**	**54.6**	**90.0**	**310.8**	**362.8**	**632.5**	**587.8**	**577.2**	**590.6**	--

Source: Alabama Oil & Gas Board, 1998.

Table 6.14
Summary of Gas Production in Federal OCS Waters by Reservoir and Field
(BCF)

OCS Field	OCS Blocks	Current Operator	1991	1992	1993	1994	1995	1996	1997	Cumulative Thru 1997
Miocene Fields										
Mobile 823	778, 779, 822, 823, 824, 867	Scana	-	-	2.3	6.8	5.2	3.2	2.1	19.5
Mobile 861	860, 861, 862	Chevron USA	-	-	-	-	-	0.0	2.0	2.0
Mobile 864	863, 864, 907, 908, 909	Chevron USA	-	18.8	20.5	18.2	13.8	11.5	8.7	91.5
Mobile 865	865	Scana	-	-	-	2.9	3.4	2.8	1.5	10.6
Mobile 866	822, 866	Scana	-	-	-	0.9	0.9	1.0	0.6	3.4
Mobile 870	870	Enron	-	-	-	1.1	4.7	5.3	5.6	16.7
Mobile 914	914, 958	Enron	-	-	-	1.0	2.5	1.5	0.7	5.6
Mobile 945	945	Apache	0.1	1.1	0.8	0.6	0.5	0.2	0.1	3.5
Mobile 947	947	Apache	0.1	1.9	1.6	1.0	1.1	0.9	0.6	7.3
Mobile 952	952, 953	Murphy	-	0.8	1.1	1.0	1.0	1.3	3.4	8.6
Mobile 955	955	Murphy	-	1.0	1.4	1.2	1.1	1.0	0.9	6.7
Mobile 959	915, 959	OEDC/Unocal	-	-	-	-	4.9	3.1	1.4	9.5
Mobile 959	960	OEDC	-	-	-	-	0.9	0.6	0.4	1.9
Mobile 961	917, 961	Unocal	-	-	-	-	1.4	1.3	0.8	3.5
Mobile 990	990, 991, VK22	Apache/Enron	0.4	4.3	3.9	2.9	2.5	1.8	1.2	16.9
Subtotal Miocene			**0.6**	**27.9**	**31.7**	**37.5**	**44.0**	**35.4**	**30.0**	**207.1**
Jurassic Fields										
Mobile 819	819	Chevron USA	-	-	-	-	-	-	-	- [1]
Mobile 820	820	Chevron USA	-	-	-	-	-	2.2	14.5	16.7
Mobile 821	821	Shell	-	8.7	10.1	6.0	5.4	4.4	5.5	40.1
Mobile 823	778, 779, 822, 823, 824, 867	MOEPSI	2.7	49.4	44.4	63.1	70.7	65.1	49.8	345.3
Mobile 827	826, 827	Exxon	-	-	0.5	7.0	4.1	11.9	11.0	34.5
Mobile 861	861, 862	Chevron USA	-	-	-	2.0	3.5	3.2	3.3	11.9
Mobile 864	863, 864	Chevron USA	-	-	-	-	-	-	5.1	5.1
Mobile 868	868, 869, 914	MOEPSI	-	-	-	-	-	-	23.3	23.3
Mobile 872	872	Chevron USA	-	-	-	-	-	3.2	4.6	7.8
Mobile 904	904	Unocal	-	-	0.1	3.9	-	0.2	15.9	20.2
Mobile 916	916	Unocal	-	-	-	-	9.7	11.3	7.0	28.0
Mobile 961	917, 961	Unocal/Chevron	-	-	-	-	4.7	13.3	18.7	36.8
Subtotal Jurassic			**2.7**	**58.1**	**55.2**	**82.0**	**98.1**	**114.7**	**158.8**	**569.7**
Total BCF			**3.4**	**86.0**	**86.8**	**119.6**	**142.1**	**150.1**	**188.7**	**776.8**
MMCFD			**63.4**	**247.6**	**265.6**	**347.6**	**404.4**	**456.3**	**518.6**	--

Sources: Dwights/PI, 1998; U.S. Dept. of Interior, MMS, 1998.

[1] Production beginning in 1998.

Chevron initiated its federal Miocene production in 1992 in the 864 Field and started Norphlet production in 1994 in the 861 Field. Unocal started production in the 904 Field in 1993 and the 916/961 Fields in 1995.

Shell and Exxon required 10 and 12 years from the 1981 lease sale to first production, with no significant regulatory delays. MOEPSI took nine years from first discovery to first production, after a ten year regulatory delay. These lead times match Alaska petroleum project lead times. The frontier nature of the Norphlet geology and the associated production engineering and technology challenges closely substituted for the challenges of Alaska's harsh, remote locale. Only the major oil and gas companies could afford the billions of dollars and years of investment necessary to bring the Norphlet into production.

6.5.4 Remaining Recoverable Reserves by Field

Cumulative Norphlet production through year end 1997 totals 1.7 TCF. Shell's Fairway Field and Mobil's 823 Field, both of which initiated production in 1991, have produced the most, over 325 BCF each. Table 6.15 shows that Fairway's 1996 cumulative production amounts to 38 percent of discovered gas in place (GIP); 823 Field 1996 cumulative production amounts to 23 percent of GIP. Fairway Field was shown on Figure 6.9 to have been in decline since mid-1994. Shell, sizing plant and equipment to peak, produced approximately 20 percent of GIP on peak before natural decline set in. Mobil and Exxon, by comparison, have sized plant and equipment to sustain a flat production rate longer, and have produced a substantially lower percentage of discovered reserves over comparable lengths of time. Nonetheless, some wells in 823 are showing signs that natural decline set in during 1996. If so, the 823 Field decline set in at about the same 20 percent of produced GIP as Shell.

Discovered state reservoirs are shown on Table 6.15 to be generally larger than federal reservoirs. Between 4 - 4.4 TCF state recoverable reserves remain. Between 1.3 - 1.9 TCF federal recoverable reserves remain at year end 1996. These GRI estimates are in line with, but somewhat larger than AOGB and MMS estimates shown in Section 2.1. Reserve estimates tend to differ among practitioners.

The 1997 average production rate, 1.02 BCFD, results in a remaining reserve to production ratio (R/P) at year end 1996 of 14 to 17. This is in line with the R/P calculated with AOGB and MMS reserve estimates in Section 2.1, which was 13 - 19. Shell, which has produced their field at the highest recovery rates, has the lowest R/P, 4 - 8. Fairway Field production in 1997 amounted to 56 percent of peak year 1993 production.

Table 6.15
Remaining Recoverable Reserves by Field: Year End 1996
(BCF)

Field	Cumulative Production 12/96	Discovered Gas in Place	Percent Produced 12/96	Remaining Recoverable at 75%	Remaining Recoverable at 55%
Fairway	290	765	38%	284	130
Mary Ann	237	1,400 (excl 95-5 GIP)	17%	813	533
Northwest Gulf	171	1,125	15%	673	448
Bon Secour Bay	102	1,335	8%	899	632
North Central Gulf	98	985	10%	641	444
State 109	3	20	15%	12	8
Aloe Bay	0	1,500	0	1,125	825
Total State	**901**	**7,130**	**13%**	**4,446**	**4,020**
823	297.8	1,325	23%	696	431
821	35.6	125	29%	58	33
827	23.4	275	8%	183	128
916/961	38.2	715	5%	498	355
861	9.4	55	17%	32	21
868	0	315	0%	236	173
904	5	170	3%	123	89
872	3.5	185	2%	135	98
820/864	2.4	>200	1%	148+	108+
Total Federal	**415.3**	**3,365+**	**12%**	**2,109+**	**1,436+**

Source: Production from Tables 6.13 & 6.14; Reserve estimates from GRI, MMS and industry contacts.

6.5.5 Norphlet and Miocene Platforms

A total of 39 fixed structures and platforms are located in Alabama state waters. Twenty five of the structures are platforms; the remainder are single well caissons. Table 6.16 summarizes the types of platforms located in each field by operator. MOEPSI initiated production from the first platforms installed in 1988. Six of the seven structures installed in 1991 are operated by Shell, with the remaining platform operated by Callon Petroleum (originally owned and installed by ARCO). Exxon installed 11 platforms and caisson wells in preparation for first production from its three state fields in 1993.

The number of structures installed on the Mobile OCS near Alabama waters to support production totals 44, comprised of platforms and well caissons. Table 6.17 summarizes the number of structures installed in each field by operators within the Mobile Area OCS. The first Mobile OCS platform was installed by Chevron on Mobile Block 861. The next to be installed was also by Chevron in 1987 on Mobile Block 862.

Table 6.18 shows annual platform installation for Mobile OCS waters compared to those placed in Alabama state waters since 1979.

6.5.6 Forecast of Mobile Bay Gas Development & Production

The forecast for gas production in Coastal Alabama, including total Miocene and Norphlet gas production through 2010, is shown on Table 6.19 along with 1996 and 1997 actuals. Norphlet production for 1998 will increase 10 percent over 1996 levels. Miocene production is declining. Coastal Alabama production will increase about ten percent annually for each of the three years, 1998 - 2000. Destin Dome will supplant declining Coastal Alabama after 2001, and sustain Norphlet production levels above or near 1.4 BCFD through 2005.

To create Norphlet production estimates for 1998 and beyond, wells in production in December, 1997 plus the wells on Table 6.11 that have advanced beyond the planning stages are assumed to be added to existing reservoirs, produce 30 percent of discovered GIP on peak, and then decline at rates of between six and twelve percent annually until between 55 - 75 percent of GIP is produced. (See Table 6.15 for GIP.) The new wells (which are delineation and development wells) are assumed to be successful, and produce at an average rate of 33 MMCFD. Varying decline rates for different fields are specified based on historic and current production data, reserve estimates, and miscellaneous operator intelligence. Production forecasts for Chevron's Destin Dome unit were furnished by the operator.

Miocene production averaged 98 MMCFD for 1997, down from 125 MMCFD for 1996 and 150 MMCFD in 1995. The decline in state and federal fields is assumed to continue at a rate of ten percent annually. No significant new Miocene production has been announced.

Mobile Bay region Norphlet production will rise to near-peak levels of over 1,300 MMCFD (annual average) in 2000. The region's gas treatment capacity of approximately 1,520 MMCFD (excluding forthcoming Destin Dome capacity) may be utilized near capacity during the winter, 1999-2000 and forthcoming years. After 2002, existing Mobile Bay Norphlet production will

Table 6.16
Offshore Structures Located in Alabama State Waters

Offshore Field	Operator	Type of Platform	Installed
Bon Secour Bay	Exxon	Well Platform (1)	1993
		Bridge-Connected Well Platform (1)	
		Production Platform (1)	1993
Fairway	Shell	Well Platform (4)	1991
		Bridge-Connected Well Platform (1)	1991
		Production Platform (1)	1991
Goose Bayou	Legacy	Single Well Caisson (1)	1995
Lower Mobile Bay — Mary Ann	Mobil	Well/Production Platform (4)	1988
		Bridge-Connected Well/ Production Platform (1)	1988
		Production Platform (1)	1988
North Central Gulf	Exxon	Well Platform (1)	1993
		Bridge-Connected Well Platform (1)	1993
		Production Platform (1)	1993
North Dauphin Island	Callon Petroleum	Production Platform (1)	1991
		Single Well Caissons (5)	1991
Northwest Dauphin Island	Offshore Group	Production Platform (1)	1994
		Single Well Caissons (3)	
Northwest Gulf	Exxon	Well Platform (2)	1993
		Production Platform (1)	1993
		Bridge-Connected Living Quarters Platform (1)	1993
		Bridge-Connected Well Platform (1)	1993
Northeast Petit Bois Pass	Offshore Group	Single Well Caisson (1)	1994
South Dauphin Island	Scana	Single Well Caissons (3)	1992
East Mississippi Sound	Legacy	Production Platform (1)	1995
		Single Well Caisson (1)	

Source: AL Oil and Gas Board, 1997.

Table 6.17
Platforms and Caissons in Mobile OCS Waters

Field Name/ Block Number	Operator	Structure Name	Year Installed
MO821			
821	BP	A-QUARTERS	1991
MO823			
822	Scana	A	1993
822	MOEPSI	B	1994
823	MOEPSI	A	1991
MO827			
827	Exxon	CB	1992
MO861			
861	Chevron	A	1985
861	Chevron	AB	1991
MO864			
863	Chevron	#2 CAISSON	1990
863	Chevron	A	1994
864	Chevron	A-5064	1991
864	Chevron	BA(#3)	1994
864	Chevron	B	1995
864	Chevron	BQ	1995
908	Chevron	A-5071	1991
908	Chevron	SAT. #2	1991
MO865			
865	Scana	#3	1994
MO866			
822	OEDC	A	1993
822	OEDC	B	1994
MO868			
868	MOEPSI	A	1992
869	MOEPSI	A	1990
MO870			
870	Enron	#2 PLAT.	1988
870	Enron	A	1994
MO872			
872	Chevron	#1 CAISSON	1996

Table 6.17 (continued)
Platforms and Caissons in Mobile OCS Waters

Field Name/ Block Number	Operator	Structure Name	Year Installed
MO904			
904	Unocal	AP	1993
904	Unocal	AQ	1993
904	Unocal	AW	1993
MO914			
914	Enron	A	1994
MO916			
916	Unocal	#1 CAISSON	1987
916	Unocal	#2	1991
916	Unocal	AP	1994
916	Unocal	AQ	1994
916	Unocal	B	1994
MO945			
945	Apache	#1 CAISSON	1990
MO947			
947	Apache	#1 CAISSON	1990
MO952			
952	Murphy	#1	1992
953	Murphy	#1	1992
MO955			
955	Murphy	#2	1992
MO959			
915	OEDC	#1 CAISSON	1988
959		A	1994
MO960			
960	OEDC	A	1995
MO961			
917	Unocal	A	1994
961	Unocal	#1 CAISSON	1987
MO990			
990	Apache	#1 CAISSON	1990
990	Enron	A	1991

Source: US DOI MMS, 1998.

Table 6.18
Mobile Bay Offshore Structure Installations by Year

	State	Federal
1985	0	1
1986	0	0
1987	0	2
1988	6	2
1989	0	0
1990	0	5
1991	12	8
1992	3	5
1993	11	5
1994	5	12
1995	2	3
1996	0	1
Total to 1997	**39**	**44**

Sources: US DOI MMS, 1998; AL Oil & Gas Board, 1997.

Table 6.19
Mobile Bay Offshore Gas Production Forecast
Annual Average (1996 - 2010)
(MMCFD)

	Year	Norphlet				Miocene			Total Gas Production
		Coastal Alabama		Destin Dome	Total Norphlet	Coastal Alabama		Total Miocene	
		Alabama State	Mobile OCS			Alabama State	Mobile OCS		
HISTORY	1988	26	-	-	**26**	0.5	-	**0.5**	**26**
	1989	35	-	-	**35**	0.4	-	**0.4**	**36**
	1990	55	-	-	**55**	-	-	**-**	**55**
	1991	90	7	-	**97**	0.5	1.7	**2.2**	**99**
	1992	254	159	-	**414**	55	76	**131**	**545**
	1993	313	151	-	**464**	48	87	**134**	**598**
	1994	585	225	-	**809**	47	103	**149**	**959**
	1995	555	269	-	**824**	32	120	**152**	**976**
	1996	548	298	-	**846**	29	97	**126**	**972**
	1997	581	423	-	**1,004**	11	77	**88**	**1,092**

Source: Foster Associates, 1998.

begin a slow decline, falling below 900 MMCFD by 2008, if no other reserves are brought on line. The addition of Chevron's Destin Dome production in 2001 will sustain peak regional production levels for five years over 1.4 BCFD into 2005.

Production of natural gas from the Destin Dome Area located in the Eastern Gulf of Mexico is shown on Table 6.19. Destin Dome gas production will start up in 2001 with estimated production of 42 BCF, or 115 MMCFD, that year. Destin Dome gas production is projected to reach peak at 110 BCF in 2004, producing 300 MMCFD, and to remain on peak for seven years. By 2004, Mobile Bay production (excluding Destin Dome) will have declined to about 1,210 MMCFD from its 2000 - 2001 peak near 1,400 MMCFD. Destin Dome's contribution to total Mobile Bay regional production is shown on Figure 6.16. Destin Dome production will account for a quarter of total regional Norphlet production after 2005.

Combining both the Alabama state and federal OCS baseline offshore production, the forecast for total offshore production in the area is shown on Figure 6.16. This figure plots monthly production data. Coastal Alabama and Florida natural gas production will rise to 1.4 BCFD in 2000 and remain above 1.4 BCFD through 2005—with no more discoveries. The forecast on Figure 6.16 yields over 9.5 TCF cumulative production of Norphlet and Miocene by 2015.

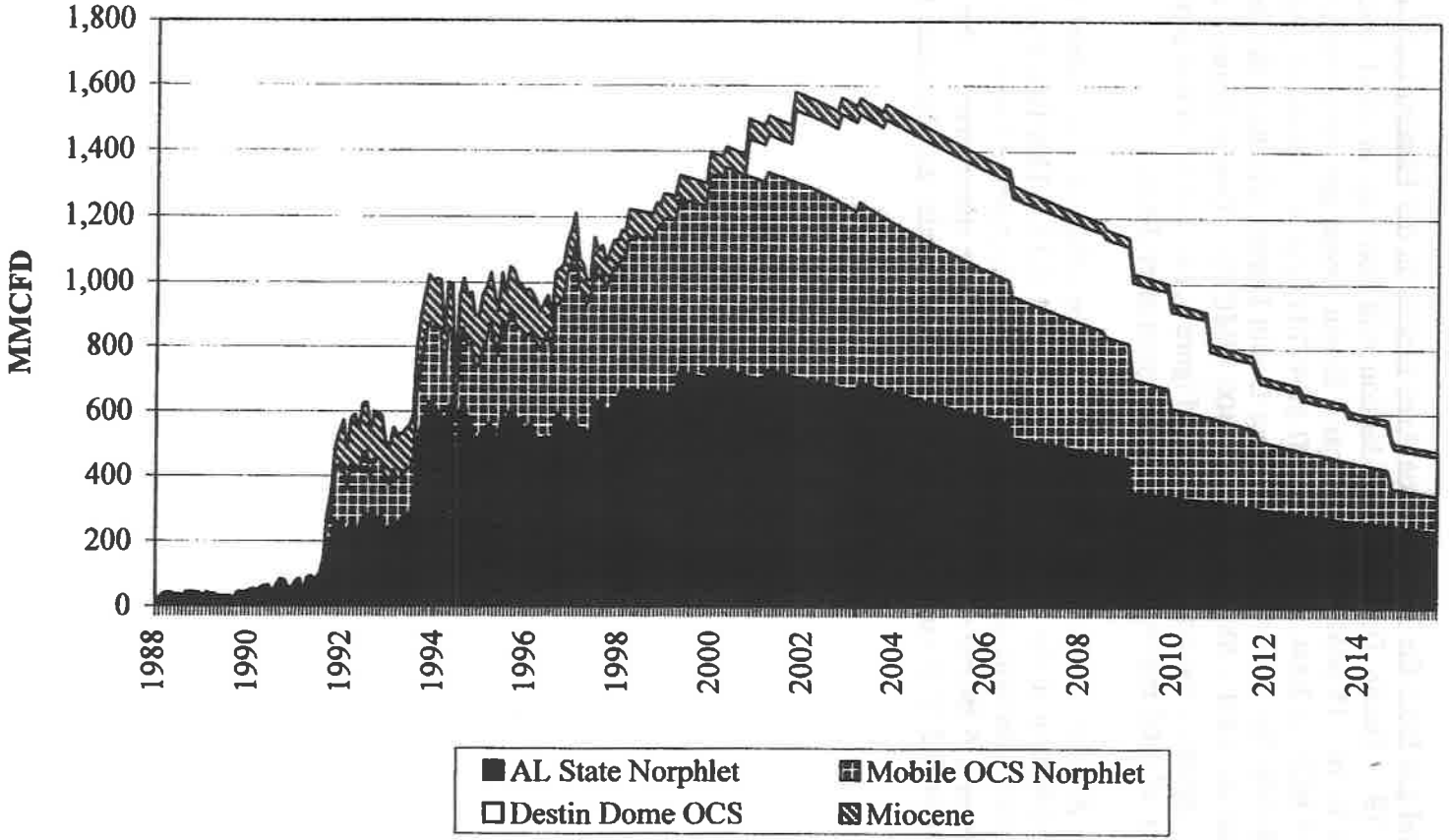


Figure 6.16. Mobile Bay Offshore Gas Production History and Forecast.

Source: Foster Associates, 1998.

APPENDIX

Offshore Gas Forecast Reserve and Decline Rate Assumptions

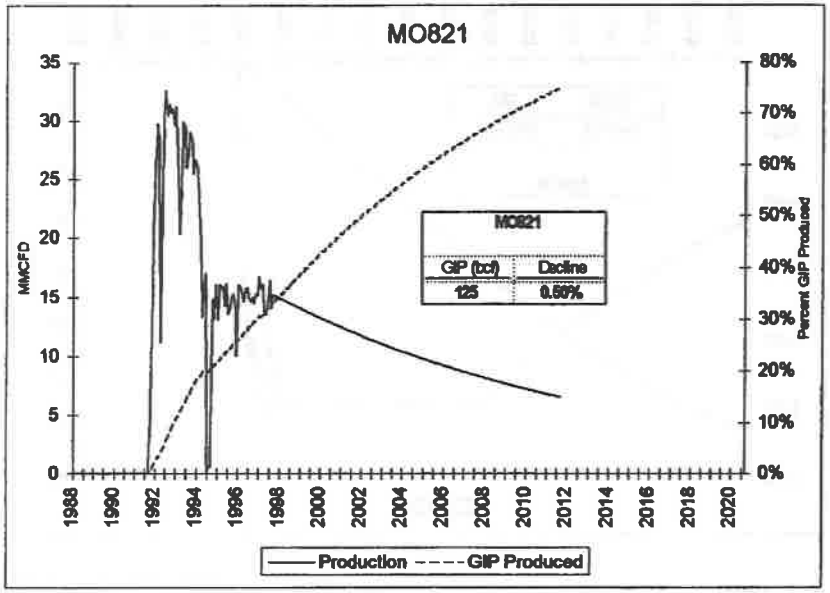
Post -1997 Well Startups Assumed in Mobile Bay Gas Production Forecast

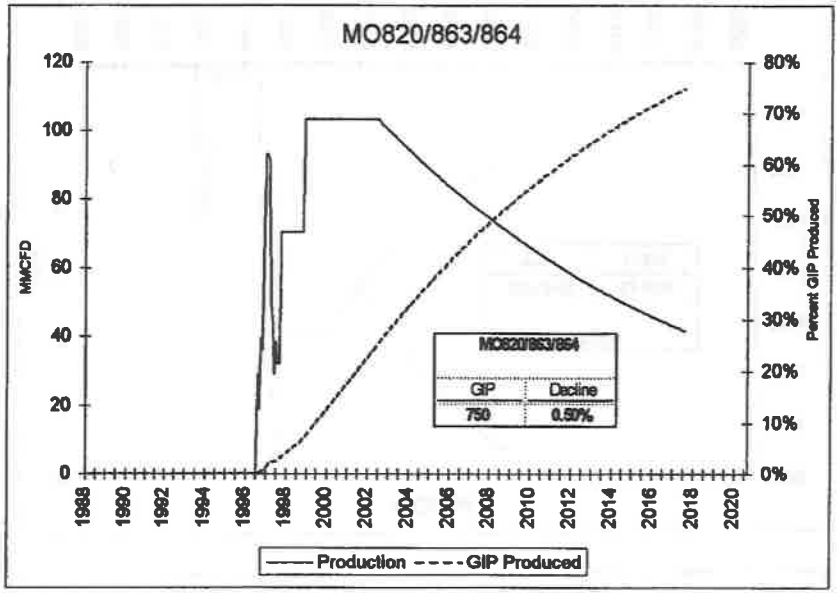
Field Name	Well No.	Startup Date	Production Rate (MMCFD)
Al State			
North Central Gulf	114-3	Feb-98	33
Aloe Bay	75-2	Jul-99	33
Bon Secour Bay	61-1	Jul-99	33
Mary Ann	95-4	Mar-00	33
Aloe Bay	75-3[1]	Jun-01	33
Aloe Bay	75-4[1]	Jun-03	33
Federal			
MO820	819-1	Jan-98	22
MO864	864-4	Dec-97	16
MO823	823-A5	Jun-98	33
MO914	914-4	Jul-98	33
MO861	862-1ST	Jan-99	33
MO864	863-4	Mar-99	33
MO870	870-1	Mar-00	33
MO918	918-1	Mar-00	33
MO871	871-1	Jun-00	33
Total New Wells Through 2001		**15**	**467**

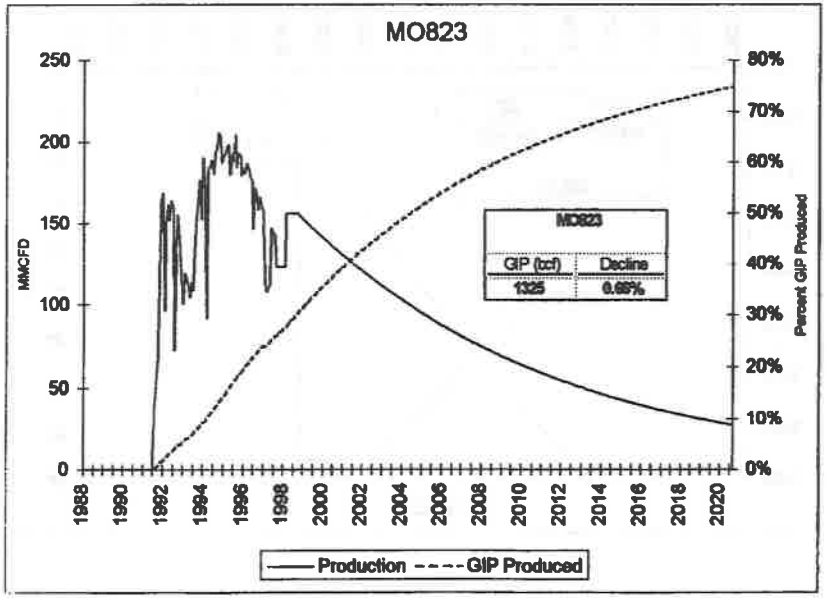
Source: Telcons with operators.

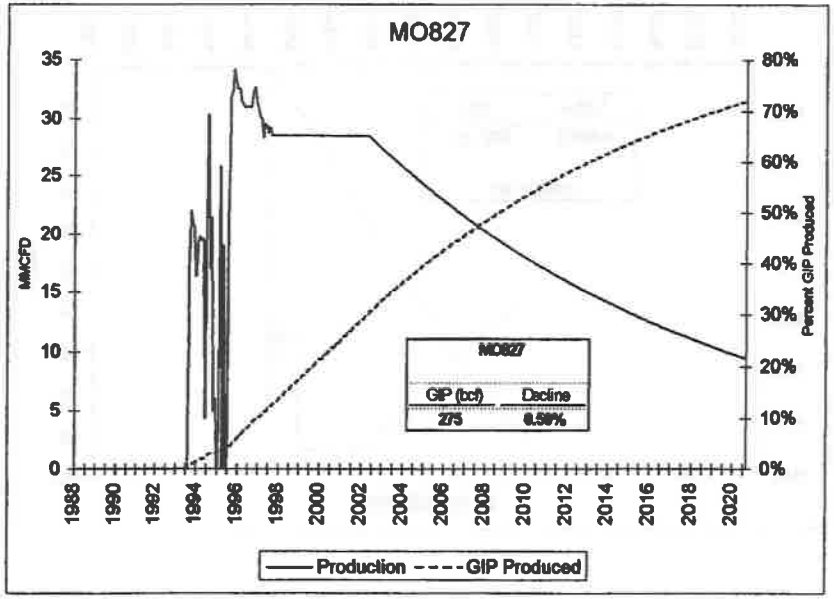
[1] A new well is assumed at some point in the future to utilize large proved reserves in this field.

Offshore Gas Forecast Reserve and Decline Rate Assumptions

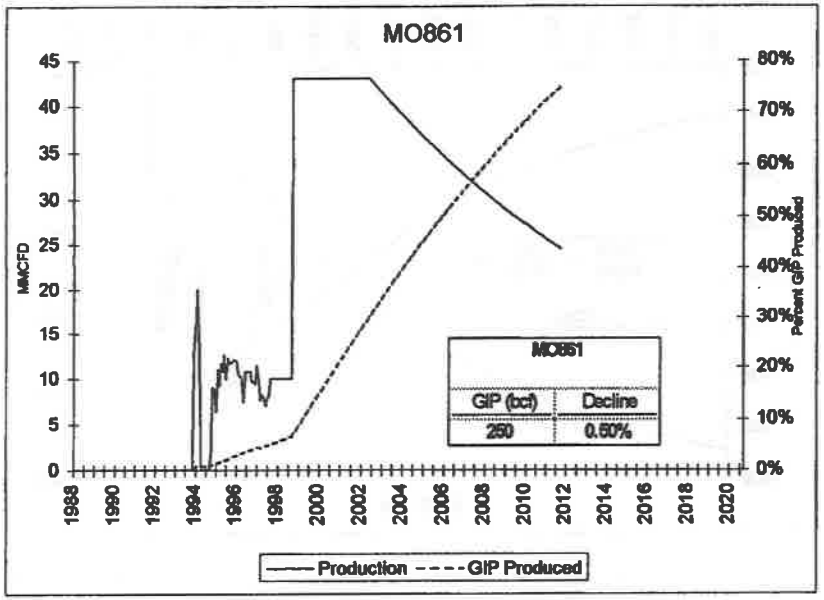


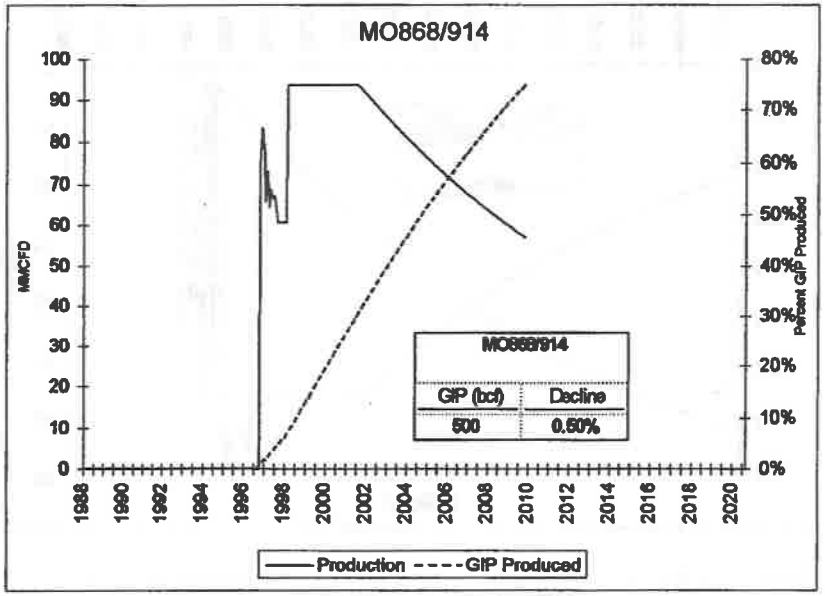


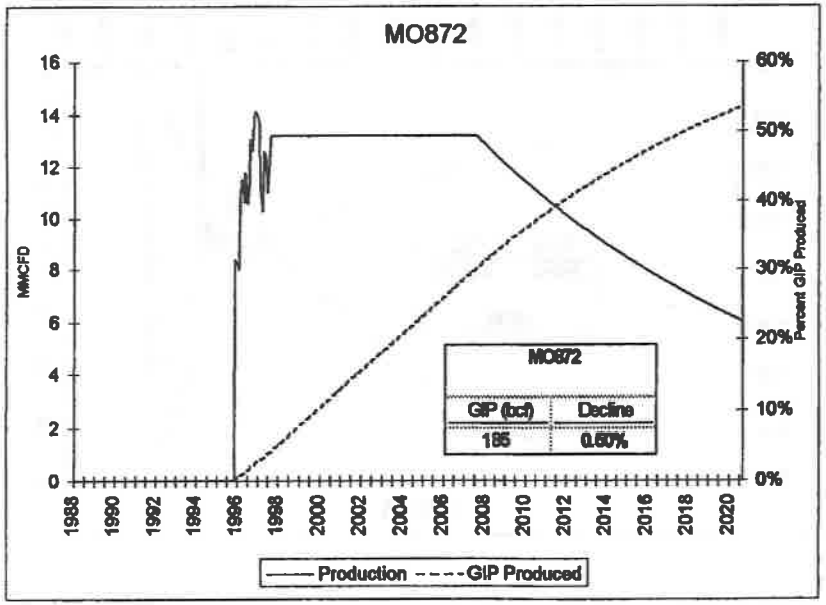


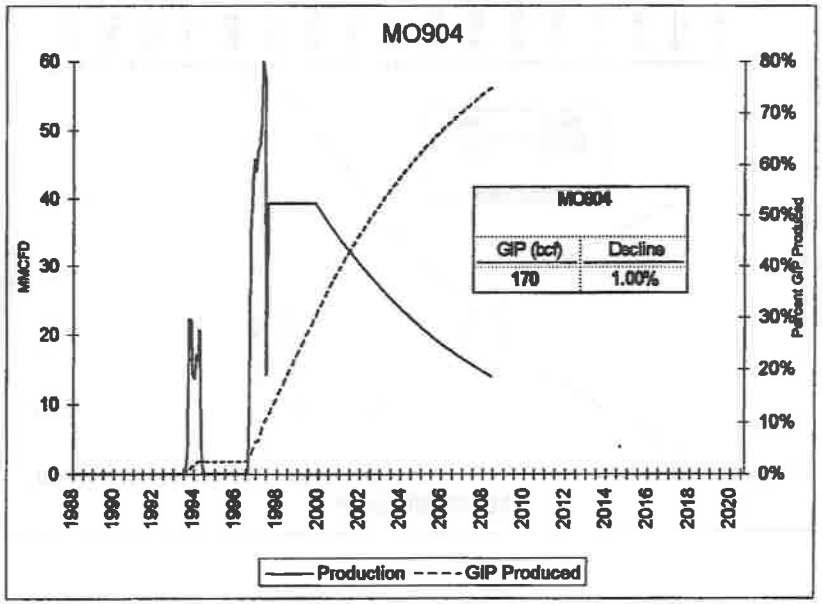


Offshore Gas Forecast Reserve and Decline Rate Assumptions

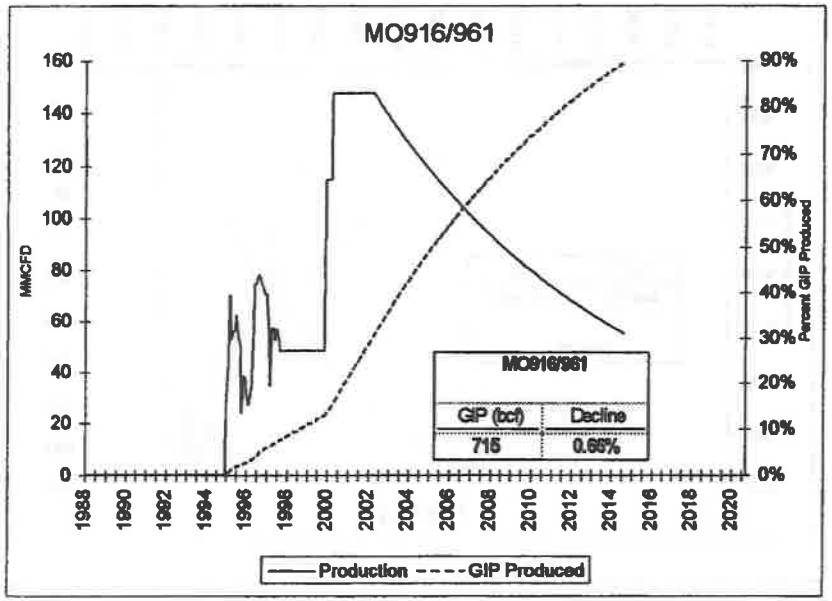


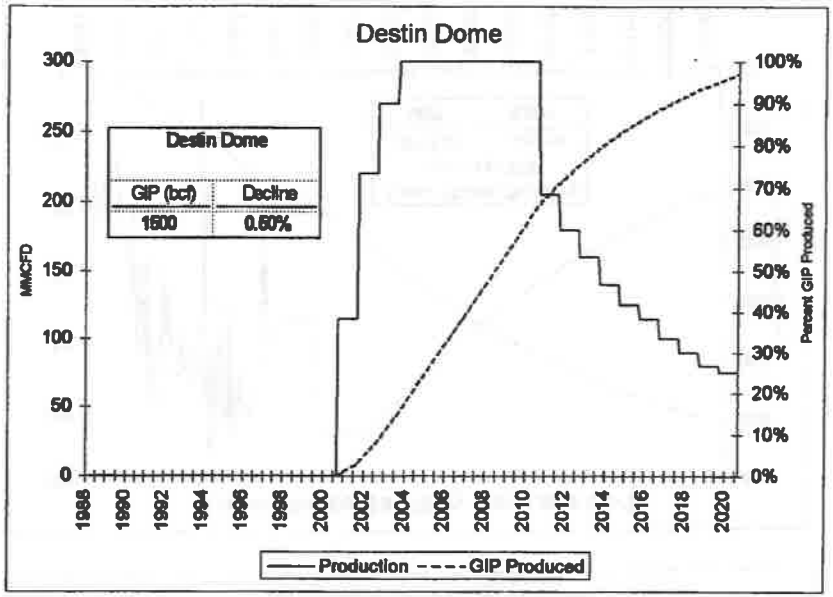


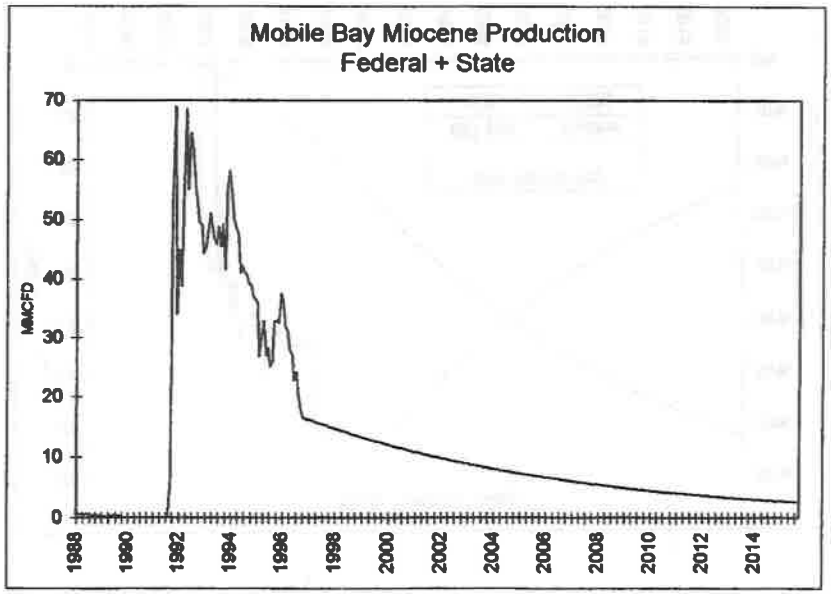




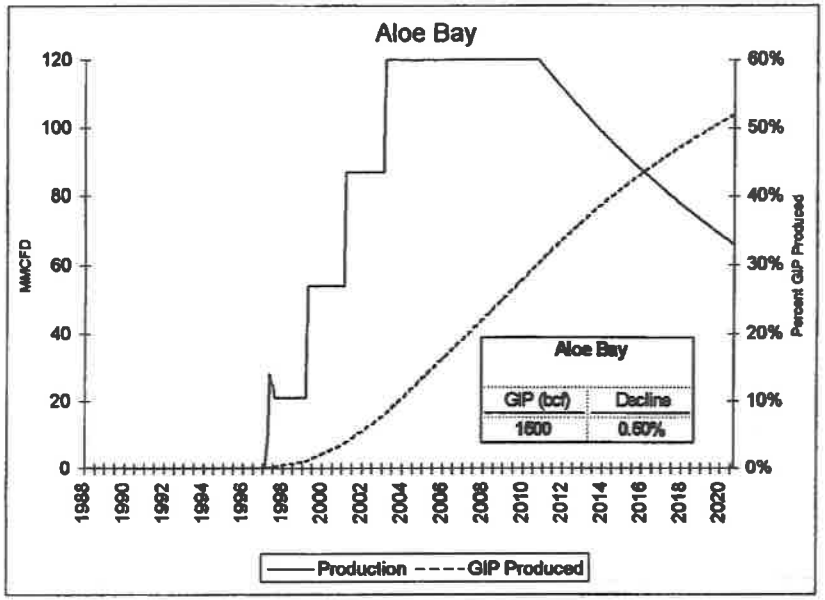
Offshore Gas Forecast Reserve and Decline Rate Assumptions

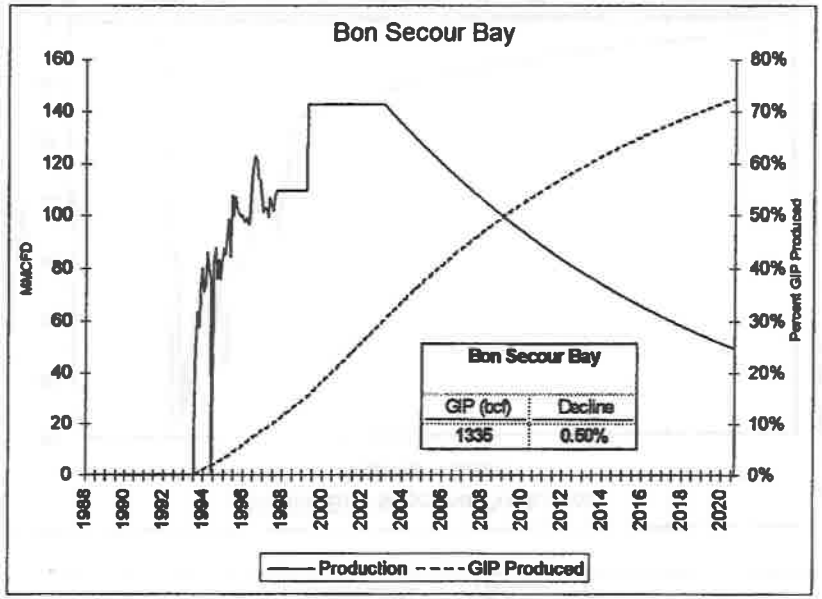


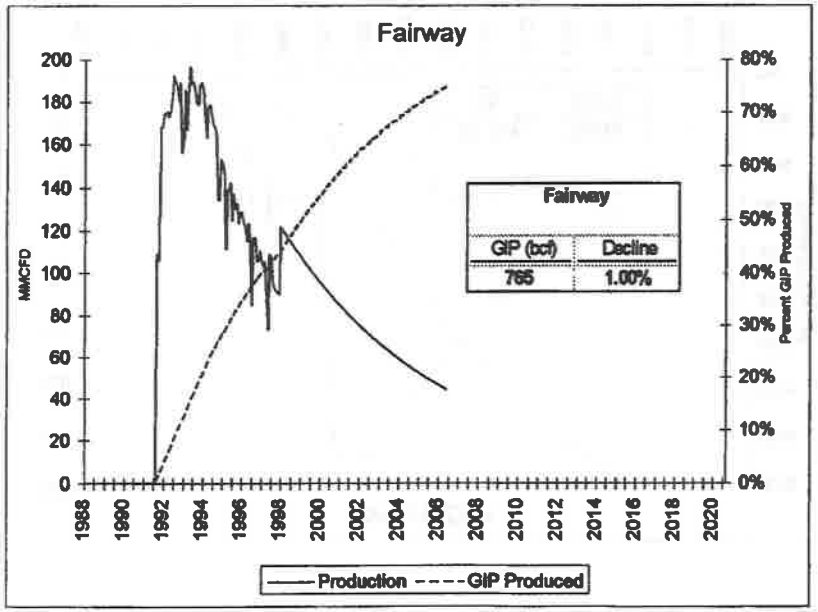


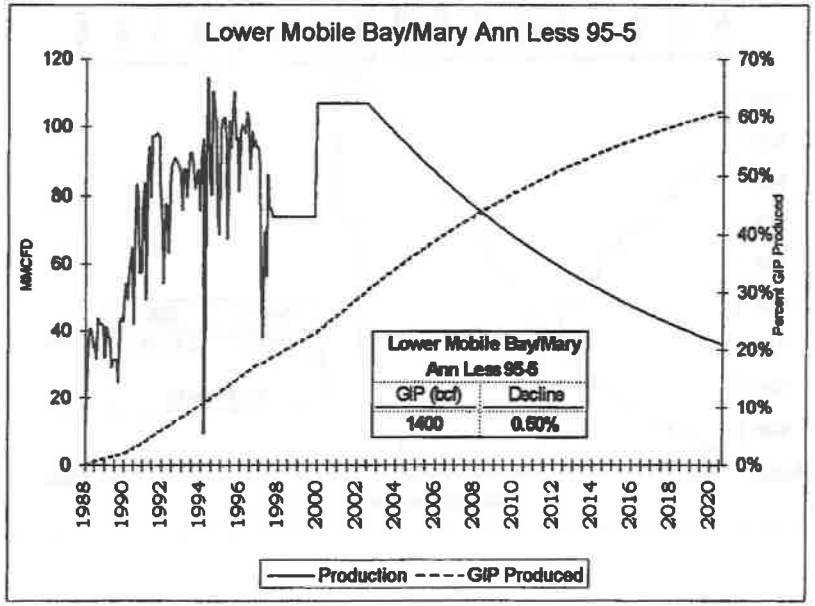


Offshore Gas Forecast Reserve and Decline Rate Assumptions

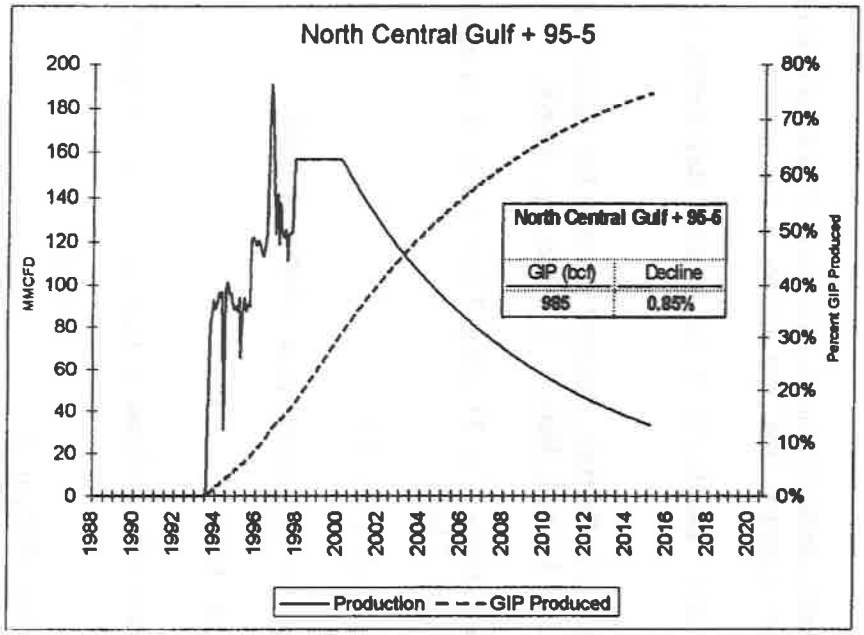


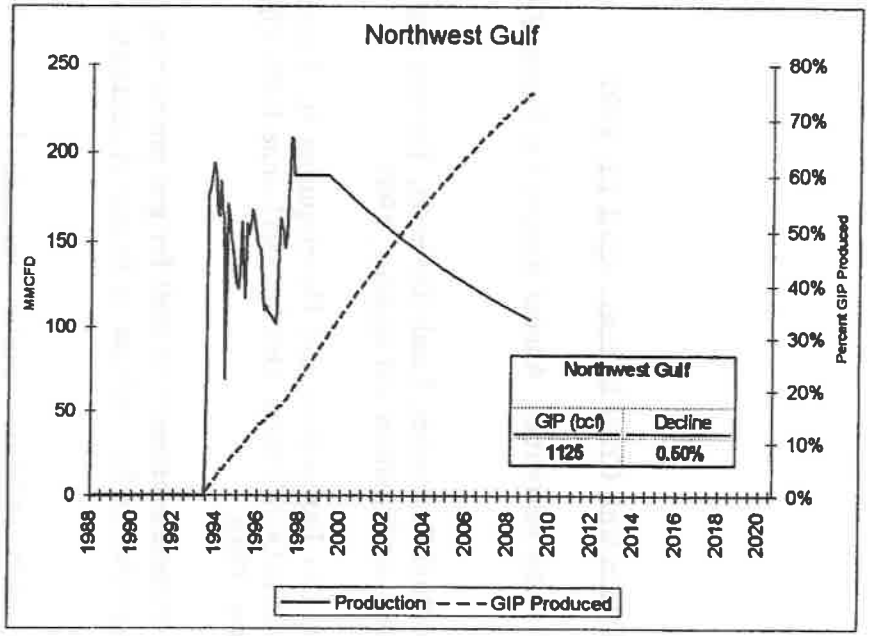






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Oil and Gas Journal, Mobile Bay Gas Flow Rising in Response of E&D Campaigns, January 10, 1994, p. 23.

Oil and Gas Journal, U.S. Gulf, April 25, 1994, p. 74.

Oil and Gas Journal, New Mobile Bay Complex Exploits Major Sour Gas Reserve, May 23, 1994, pp. 49-51.

Oil and Gas Journal, Industry Briefs, October 10, 1994, p. 36.

Oil and Gas Journal, More Norphlet Gas Coming On Line Off Alabama, November 28, 1994, p. 38.

Oil and Gas Journal, Another Mobile Block Production Facility Nears Completion, January 30, 1995, p. 91.

Oil and Gas Journal, Unocal Steps up Gas/Condensate Production, May 29, 1995, p. 24.

Oil and Gas Journal, Economics and Technology Help Spark Gulf Deepwater Projects, March 13, 1995, pp. 25-31.

Pipeline and Gas Journal, Specialized Techniques Developed, March 1987, pp. 38-40.

7.3 Newspaper Articles

Birmingham Post Herald, Bay Oil Drilling Block Asked, January 11, 1972.

Birmingham Post Herald, Storm Brewing Over Fate of Lease Funds, April 3, 1981.

Cullman Times, Oil Bonanza Couldn't Have Come at Better Time for State, April 21, 1981.

Mobile Press, Baxley's Negative Stand on Oil, January 12, 1972.

Mobile Press, Coastal Drilling Plans Shape Up, June 23, 1981.

Oil, Gas Board to Hold Proposed Rules Hearing, undated news clip, 1972 Alabama newspaper.

7.4 Alabama Oil and Gas Board Dockets

Alabama Oil and Gas Board Reference Number:

11-7-808
6-30-83
12-17-879A
9-6-86
11-9-937
7-17-964
4-14-929
12-13-90165
11-9-933
2-6-924



The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission



As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Royalty Management Program** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.

TO ALL EMPLOYEES OF
MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST INC. ("MOBIL")
ASSOCIATED IN ANY MANNER WITH MOBILE BAY PROJECT:

MOBIL is legally obligated by contract, statutes, and/or governmental regulations not to discharge any substance (whether water, drilling fluids, muds or cuttings or other substances) into State of Alabama waters from its oil and gas operations in Mobile Bay.

Because of this legal obligation, Mobil's well-established policy of full compliance with all valid and applicable laws, governmental rules, regulations and orders, and the possibility of criminal and/or civil penalties or charges against Mobil, its officers or directors, or any employee involved in breaching such obligation, you are specifically reminded:

(1) of the "no-discharge" obligation of Mobil, as stated above, and of the potentially serious consequences for breach of these obligations;

(2) that you must not engage in, order or sanction any discharge into Alabama waters;

(3) that you must immediately report to your supervisor and to MOBIL'S Environmental and Regulatory Manager in New Orleans any such discharge (whether accidental or willful) you discover or become aware of;

(4) that any violation of your duties, as set out above, will subject you to appropriate disciplinary action (up to and/or including termination of employment).

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

MOBIL OIL EXPLORATION &
PRODUCING SOUTHEAST INC.

BY: Kenneth F Keller
KENNETH F. KELLER,
President and General Manager

I acknowledge receipt of a copy of this statement and will abide by its provisions.

_____

ALABAMA OIL & GAS BOARD

Exhibit No: 14-13
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Rogers
Received by: EP

RM OGB-1
See instruction on reverse side of form

STATE OIL AND GAS BOARD
STATE OF ALABAMA

Post Office Drawer O
University, Alabama 35486

Numbers of be filled in by Board
2543-OS-3
Permit number

01 097 20135
API number

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR CONVERT

APPLICATION TO DRILL ☒ DEEPEN ☐ CONVERT ☐

Name of operator Mobil Oil Corporation Date June 1, 1978

Address 1030 Plaza Tower City New Orleans State La., 70113

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
State Lease 347	1	Sea Level

Well location * (give footage from section or unit lines) Section-township-range
4350' FEL & 2700' FSL of Block 76, Mobile Bay, Alabama

Field & reservoir (if wildcat, so state) ~~Wildcat~~ Lower Mobile Bay (1980) County Baldwin & Mobile

Distance, in miles, and direction from nearest town or post office 29 miles South of Mobile, Alabama

Distance from proposed location to nearest unit or section line	Distance from proposed location to nearest drilling, completed or applied-for well
2700 feet	Not Applicable feet

Proposed depth	Rotary or cable tools	Drilling contractor (if available)
21,500'	Rotary	Rowan Drilling Co. Inc.

Acres assigned to well	Approx. date work will start	Status of organization report	If wildcat, is well to be drilled on a 640 acre unit as provided for by rule B-2, part B, section 2.
~~640~~ 5165	August 15, 1978	Current ☐ Attached ☒	☒ Yes ☐ No (see below)

If yes, describe 40 acre unit if the well is completed as a oil well: Square 40 acre unit with SE corner located 2040' FSL and 3690' FEL of Blk. 76, Alabama State Lease 347, Mobile Bay

Type of bond	Amount of bond	Bonding company & bond number
☒ Single well ☐ Blanket	$500,000.00	Federal Insurance Co. Bond No. 80675018

*If this is to be a deviated well, please use Form OGB-1B

Executed this the 1st day of June, 19 78

Signature of Affiant: O. J. Ford, Jr.

State of Louisiana
Parish ~~County~~ of Orleans

Before me, the undersigned authority, on this day personally appeared O. J. Ford, Jr. known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states, that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

Subscribed and sworn to before me this 1st day of June, 19 78

Daisy F. Landry

SEAL

My commission expires

Notary Public in and for
County, DAISY F. LANDRY
Notary Public, Parish of Orleans, State of La.
My Commission is issued for life.

ACTION OF BOARD

APPROVED BY: Thomas Joseph
SUPERVISOR, STATE OIL AND GAS BOARD

DATE: 6/21/78

OP ...: Mobil Oil Corp. ...ing Interest, Inc.

NAME OF WELL: State Lease 347 # 1

API 2004 00

PERMIT NO. 2543-05-3-... 01 29 201

FORMS FILED

		STAFF ACTION
*FORM OGB-1	✓	KPH
*PLAT	✓	KPH
*FORM OGB-2	✓	KPH
*FORM OGB-3	R&D. 8/16/89 ~~$00,000~~ 1000,000 ✓ (Single Well Bond)	KPH
*FORM OGB-4	# 80-8591-59 ✓ (Blanket Bond)	
*FORM OGB-5	on file ✓	KPH
*PERMIT FEE	✓	KPH
FORM OGB-6		
FORM OGB-7	✓	
FORM OGB-8	✓	
FORM OGB-9	✓	
FORM OGB-10		
FORM OGB-10A		
FORM OGB-11	✓	
FORM OGB-12		
FORM OGB-20		
GEOLOGIC DIVISION REPORT		(LOGS) ✓
DIRECTIONAL SURVEY		

permitted June 21, 1

OGB-24 ✓

ALABAMA OIL & GAS BOARD

ORDERS

80-209 (11-07-80) Named field & established
82-145 (7-30-82) FORCE INTEGRATION
82-144 (7-30-82) REFORM TO 5165 ACRE UNIT
2016-25 extended TA status

Exhibit No: 14-C

Petitioner: Board

Item No: 1-5 Date: 2-19-26

Witness: Rogers *Documents completed for permit

Received by: EP

PUBLIC HEARING ANNOUNCEMENT

A JOINT PUBLIC HEARING WILL BE HELD BY THE U.S. CORPS OF ENGINEERS, MOBILE DISTRICT, AND THE ALABAMA WATER IMPROVEMENT COMMISSION FOR THE PURPOSE OF DISCUSSING AND RECEIVING PUBLIC COMMENTS ON A REQUEST FOR DEPARTMENT OF THE ARMY PERMITS BY MOBIL OIL CORPORATION TO DRILL FOUR (4) EXPLORATORY AND APPRAISAL OIL/GAS WELLS IN MOBILE BAY, MOBILE AND BALDWIN COUNTIES, ALABAMA.

WHEN ? 7:00 P.M.
6 FEBRUARY 1979

WHERE ? ROOM 3
MOBILE MUNICIPAL AUDITORIUM
MOBILE, ALABAMA

WHO ? ALL INTERESTED PARTIES

SEE ATTACHED PUBLIC NOTICE FOR ADDITIONAL INFORMATION

WEST SAND ... SHEET 1 OF 3

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2288
MOBILE, ALABAMA 36628

REPLY TO
ATTENTION OF:

SAMOP-S

25 January 1979

SPECIAL PUBLIC NOTICE NOS. AL78-00508-W
AL78-00509-W
AL78-00510-W
AL78-00511-W

POSTPONEMENT OF PUBLIC HEARING FOR
MOBIL OIL CORPORATION

TO WHOM IT MAY CONCERN:

At the request of the applicant, the Mobile District Corps of Engineers herewith advises of the postponement of the Public Hearing scheduled for 7:00 P.M., 6 February 1979, Room 3, Mobile Municipal Auditorium. This hearing, as advertised by Public Notice Nos. AL78-00508-W, AL78-00509-W, AL78-00510-W, and AL78-00511-W, was scheduled for the purpose of discussing and receiving public comments on a request for Department of the Army Permits by Mobil Oil Corporation to drill four (4) exploratory and appraisal oil/gas wells in Mobile Bay, Mobile and Baldwin Counties, Alabama.

The Public Hearing, to be held jointly with the Alabama Water Improvement Commission, has been rescheduled to:

7:00 P.M.
25 April 1979

Room 3
Mobile Municipal Auditorium
Mobile, Alabama

All interested parties are invited to attend.

MOBILE DISTRICT
U. S. Army Corps of Engineers

Mobil Oil Exploration & Producing Southeast Inc.

1001 HOWARD AVENUE
NEW ORLEANS, LOUISIANA 70113

PUBLIC HEARING
U.S. CORPS OF ENGINEERS
ALABAMA WATER IMPROVEMENT COMMISSION
APRIL 25, 1979

MOBIL OIL EXPLORATION AND PRODUCING SOUTHEAST INC.

Mobil

PUBLIC HEARING
U.S. CORPS OF ENGINEERS
ALABAMA WATER IMPROVEMENT COMMISSION
APRIL 25, 1979

STATEMENT BY JAMES HELIS ON BEHALF OF
MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST INC.

MY NAME IS JAMES HELIS. I AM ENVIRONMENTAL AND REGULATORY AFFAIRS MANAGER FOR MOBIL OIL EXPLORATION AND PRODUCING SOUTHEAST INC.

IN OBTAINING THE PERMITS TO DRILL THE WELL NOW IN PROGRESS IN MOBILE BAY BLOCK 76 OUR SETTLEMENT AGREEMENT WITH AWIC REQUIRED NO DISCHARGES OF ANY TYPE INTO THE WATERS OF THE BAY, AND DISPOSAL OF WATER, MUD AND CUTTINGS IN AN ACCEPTABLE MANNER. IN ADDITION WE ARE REQUIRED TO CONDUCT A DETAILED ENVIRONMENTAL MONITORING PROGRAM RELATIVE TO OUR OPERATION.

TO MEET THIS FIRST REQUIREMENT WASTE COLLECTION BARGES HAVE BEEN PLACED AT THE DRILL SITE ADJACENT TO THE RIG TO COLLECT ALL DISCHARGES INCLUDING DRILL CUTTINGS, MUD, WASH WATER AND SECONDARY TREATED SEWERAGE. SOME OF THE WATER IS USED AS MAKE UP FOR THE DRILLING MUD IN THIS WELL. THE REMAINDER OF THE WATER IS TRANSPORTED TO A DRILLING RIG IN THE MAIN PASS AREA FOR USE IN THE MUD SYSTEM AT THAT LOCATION. THE EXCESS MUD, OF WHICH THERE IS VERY LITTLE, WAS TRANSPORTED TO THIS SAME DRILLING RIG IN THE MAIN PASS AREA. THE DRILL CUTTINGS AND SOLIDS WERE TRANSPORTED TO A SOUTH LOUISIANA LOCATION AND USED IN AN INDUSTRIAL LAND FILL.

THE DRILLING OPERATION IN MAIN PASS IS COMING TO AN END AND WE LOOKED FOR ANOTHER PLAN FOR HANDLING CLEAR WATER FROM THIS OPERATION. A DISPOSAL

COMPANY IN MOBILE APPROACHED US WITH A PLAN FOR SUBSURFACE DISPOSAL OF THIS WATER INTO A WELL IN GREEN COUNTY, MISSISSIPPI, APPROVED FOR SUCH USE BY THE PROPER AGENCIES OF THAT STATE. WE HAVE EMBARKED ON THAT PROGRAM AND IT IS WORKING VERY WELL.

THE MUD SOLIDS AND CUTTINGS ARE STILL GOING TO AN INDUSTRIAL LANDFILL IN SOUTH LOUISIANA.

AT NO TIME HAS THERE BEEN ANY WASTE DISPOSAL FROM THIS OPERATION INTO THE WATERS OF THE BAY.

WE STATED EARLIER THAT IN OUR AGREEMENT WITH AWIC A DETAILED ENVIRONMENTAL MONITORING PROGRAM WOULD BE CONDUCTED. THIS PROGRAM WAS SPECIFIED AND AUTHORED BY AWIC AND CONSULTANTS FROM SEA-LAB, AND AWIC RESERVED THE RIGHT TO APPROVE THE ORGANIZATION WHICH WOULD CONDUCT THIS PROGRAM. WITH THE APPROVAL OF AWIC, WE RETAINED THE SERVICES OF TECH-CON, INC., OF MOBILE TO CARRY OUT THIS PROJECT. TECH-CON IS A COMBINATION OF VESTER J. THOMPSON, JR., INC., OF MOBILE, AND BARRY A. VITTOR AND ASSOCIATES ALSO OF MOBILE. WE HANDED OUR CONSULTANTS A COPY OF THE WORK PROGRAM WITH ONE INSTRUCTION: DO IT, DO IT RIGHT AND DON'T CUT ANY CORNERS. THE PROGRAM HAS BEEN ON-GOING SINCE EARLY JULY, 1978. THE RESULTS TO DATE INDICATE THAT OUR PRESENCE IN THE BAY HAS NOT IMPACTED ON THE ENVIRONMENT IN ANY MANNER. DR. BARRY A. VITTOR IS THE PROJECT MANAGER FOR THIS EFFORT AND HE IS PRESENT IF YOU WISH TO DISCUSS THIS FURTHER.

IN PROCESSING THE APPLICATIONS FOR THESE FOUR WELLS THE CORPS HAS INFORMED US THAT A SUPPLEMENT TO THE ORIGINAL ENVIRONMENTAL IMPACT STATEMENT WILL BE NEEDED, AND HAS DIRECTED US BY LETTER DATED MARCH 23, 1979 TO FURNISH CERTAIN DATA TOWARDS THIS EIS SUPPLEMENT.

WE HAVE RETAINED THE SERVICES OF COASTAL ECOSYSTEMS MANAGEMENT, INC., TO PREPARE THE NECESSARY INPUT TO THIS PROJECT. YOU MAY RECALL THAT THIS ORGANIZATION SERVED A SIMILAR FUNCTION IN PREPARATION OF DATA FOR THE ORIGINAL EIS. THIS PROJECT IS ON-GOING AND DR. ROBERT H. PARKER, PRESIDENT OF COASTAL ECOSYSTEMS MANAGEMENT, IS PRESENT TONIGHT AND IS AVAILABLE. HIS REPORT WILL REQUIRE ABOUT 3 MONTHS TO COMPLETE AND WILL BE SUBMITTED AS SOON AS AVAILABLE. INFORMATION WHICH RELATES TO DATA FROM THE CURRENT WELL WILL BE AVAILABLE FOR SUBMITTAL AS THE CURRENT WELL PROGRESSES.

ONE INCIDENT WHICH HAS GENERATED MANY QUESTIONS IS THE LOSS OF 700 GALLONS OF HYDROCHLORIC ACID INTO THE WATERS OF THE BAY. I BELIEVE THIS ITEM SHOULD BE DISCUSSED IN MORE DETAIL.

THE MATTER OF STUCK CASING HAS ALREADY BEEN MENTIONED. ONE METHOD OF FREEING CASING OR ANY PIPE WHICH IS STUCK IN THE WELLBORE IS TO PUMP HYDROCHLORIC ACID AROUND THE PIPE IN AN EFFORT TO BREAK DOWN THE MATERIAL HOLDING THE PIPE. WE HAD ORDERED A THOUSAND GALLON TANK OF 15% HYDROCHLORIC ACID FOR THIS PURPOSE AND IN OFF LOADING THIS TANK FROM THE DELIVERY BARGE A WELDED LIFT CONNECTION BROKE, AND APPROXIMATELY 700 GALLONS OF THIS ACID SPILLED INTO THE BAY.

WE PROMPTLY NOTIFIED OUR ENVIRONMENTAL CONSULTANT OF THIS INCIDENT. HE IMMEDIATELY DISPATCHED PERSONNEL FROM HIS STAFF TO THE LOCATION TO SAMPLE THE AREA AND DETERMINE THE IMPACT OF THIS SPILL ON THE ENVIRONMENT. A LARGE NUMBER OF SAMPLES WERE TAKEN AT THE SPILL SITE AND AT POINTS REMOTE FROM THE SITE. AN ANALYSIS OF THESE SAMPLES HAS REVEALED THAT THERE WAS NO DAMAGE TO THE ENVIRONMENT.

A COPY OF DR. VITTOR'S REPORT ON THIS INVESTIGATION WAS FURNISHED TO THE CORPS, AWIC, AND THE OIL AND GAS BOARD.

AT THE OCTOBER 28, 1975 PUBLIC HEARING SEVERAL SPECIALISTS SPOKE RELATIVE TO OUR APPLICATIONS. I WOULD LIKE TO REFER BRIEFLY TO THE REMARKS MADE BY THOSE PERSONS:

1. MR. WILLIAM M. AYERS - HALLIBURTON SERVICES.
   HIS REMARKS WHICH RELATED TO THE ORGANIZATION KNOWN AS CLEAN GULF ASSOCIATES AND EQUIPMENT AVAILABLE TO MEMBERS OF THAT ORGANIZATION ARE STILL VALID. I WOULD LIKE TO INTRODUCE AN UPDATED LIST OF CGA EQUIPMENT, FOR THE RECORD, AS PART OF MY STATEMENT. INCIDENTALLY, SOME OF THE EQUIPMENT ON STANDBY AT OUR LOCATION IS CGA EQUIPMENT AND IT WAS BORROWED BY THE COAST GUARD TO USE IN CONTAINMENT AND CLEANUP OF A 1000 BARREL OIL SPILL IN MOBILE HARBOR ON MARCH 20, 1979, WHICH WAS IN NO WAY CONNECTED TO OUR OPERATIONS IN THE BAY.

2. MR. JOE TYSON OF GULF UNIVERSITIES RESEARCH CONSORTIUM SPOKE AND HIS REMARKS ARE STILL VALID.

3. DR. DALE STRAUGHN, SENIOR RESEARCH SCIENTIST, INSTITUTE FOR MARINE AND COASTAL STUDIES, UNIVERSITY OF SOUTHERN CALIFORNIA DISCUSSED HER STUDY ON THE IMPACT OF THE SANTA BARBARA SPILL OF 1969. DR. STRAUGHN HAS UPDATED HER REMARKS WHICH I WOULD LIKE TO ENTER INTO THE RECORD. THERE IS NO ESSENTIAL CHANGE IN DR. STRAUGHN'S POSITION.

DR. WILLIAM N. SCHROEDER PRESENTED A STATEMENT RELATIVE TO THE SITE SPECIFIC ARCHEOLOGICAL SURVEY FOR THE CURRENT DRILLING WELL. WE HAVE AGAIN RETAINED THE SERVICES OF DR. SCHROEDER TO CONDUCT ADDITIONAL ARCHEOLOGICAL SURVEYS REQUIRED FOR THE FOUR APPRAISAL WELLS. THE RESULTS OF HIS WORK WILL BE SUBMITTED TO THE CORPS AS SOON AS IT IS AVAILABLE.

ALL IN ALL OUR OPERATION IN MOBILE BAY HAS NOT IMPACTED ON THE ENVIRONMENT OF THE BAY AND IT IS OUR INTENTION TO CONTINUE THIS QUALITY OF OPERATION ON THE CURRENT WELL AND ON ALL FUTURE OPERATIONS WE MAY UNDERTAKE IN MOBILE BAY.

QUESTIONS AND ANSWERS ON DRILLING IN MOBILE BAY

1. WHAT IS MOBIL DOING IN MOBILE BAY?

   Mobil is drilling an exploratory or wildcat well in search for oil or natural gas.

2. WHERE IS MOBIL DRILLING?

   Mobil is drilling 1¼ miles east of Dauphin Island and 27 miles south of Downtown Mobile.

3. HOW DEEP IS THE WATER THERE?

   Water is about 14 feet deep.

4. WHEN DID MOBIL START DRILLING?

   November 16, 1978.

5. HOW DEEP WILL MOBIL DRILL?

   Mobil plans to drill to a depth of 21,500 feet.

6. HOW LONG WILL THE DRILLING TAKE?

   We estimate eight or nine months.

7. HOW MUCH WILL THE WELL COST?

   More than $7-million.

8. WHY ARE YOU DRILLING WHERE YOU ARE?

   Our geologists believe there are potentially large gas reserves there, in the Smackover and Norphlet zones at approximately 20,000 feet and 20,200 feet respectively. They are the same geologic formations that are producing considerable amounts of gas 45 miles to the northwest, in the Chunchula and Hatters Pond Fields.

9. HOW DID MOBIL GET THE RIGHT TO DRILL THERE?

   Mobil bought four leases, totaling 19,965 acres, on October 24, 1969 in a competitive lease sale held by the state of Alabama.

10. WHY HAS IT TAKEN SO LONG TO GET STARTED?

Litigation and regulatory delays prevented Mobil from receiving a permit to drill until earlier this year.

11. DOES MOBIL PLAN ANY FURTHER DRILLING IN MOBILE BAY?

Mobil is submitting application to the U.S. Army Corps of Engineers for four additional appraisal wells to be drilled subsequent to the exploratory test if such action is warrented.

12. IF YOU FIND GAS IN COMMERCIAL QUANTITIES, HOW SOON WILL IT BE AVAILABLE TO CONSUMERS?

We estimate a minimum of three to five years.

13. HOW WILL IT BE DISTRIBUTED?

We anticipate we will tie into existing pipeline distribution systems.

14. IF YOU PRODUCE OIL OR GAS, WHAT WILL THE STATE OF ALABAMA GET OUT OF IT?

The state is entitled to royalty of one-sixth of the production, free of costs. Mobil also pays the state nearly $20,000 a year in rental for its four leases and, additionally, the state will accrue severance tax income from oil and gas produced from this area.

15. WHY DO WE NEED TO FIND NEW SOURCES OF OIL AND NATURAL GAS?

The United States cannot continue to use oil at the rate it is, without developing further supplies. Consider:

-- In 1977, in the U.S. we used 18.4 million barrels of oil a day, and nearly 55 billion cubic feet of natural gas. This oil and gas accounted for almost three-fourths of all energy consumed in the nation.

-- In 1977 we imported more than 8 million barrels of oil a day, about 45% of our oil consumption, a higher percentage than at the time of the 1973 embargo. And 84% of our oil imports come from member nations of the Organization of Petroleum Exporting Countries (OPEC).

-- In 1977 we spent $45-billion for imported oil and products, up from $3-billion at the beginning of this decade.

16. WHAT ARE THE NATION'S PRESENT RESERVES OF OIL AND GAS?

First, let's distinguish between proved petroleum reserves and potential oil and gas resources. Proved reserves of crude oil, natural gas and natural gas liquids are those resources which geologic and engineering data demonstrate with reasonable certainty to be recoverable from known reservoirs under present economic and operating conditions.

Proved reserves of U.S. Crude oil as of January 1, 1978 were an estimated 29.5 billion barrels. Domestic natural gas reserves as of that date were 209.0 trillion cubic feet. In addition, there were 6.0 billion barrels of natural gas liquids.

The U.S. Geological Survey estimates the range of undiscovered recoverable resources from 50 to 127 billion barrels of crude oil, from 322 to 655 trillion cubic feet of natural gas and between 11 and 22 billion barrels of natural gas liquids.

Only future exploration over an extended period of time will determine with a reasonable degree of certainty whether or not these resources do, in fact, exist.

ALABAMA
OIL & GAS BOARD

EXHIBIT 15

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

Marvin Rogers

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

STATE OIL AND GAS BOARD OF ALABAMA

OIL AND GAS BOARD
Charles E. (Ward) Pearson, Chairman
Stephen P. French, Vice-Chairman
Jamie N. Ison, Member
Berry H. (Nick) Tew, Jr., Secretary
S. Marvin Rogers, General Counsel

420 Hackberry Lane
P.O. Box 869999
Tuscaloosa, Alabama 35486-6999
Phone (205)349-2852
Fax (205)349-2861
www.ogb.state.al.us

Berry H. (Nick) Tew, Jr.
Oil and Gas Supervisor

August 27, 2025

ALABAMA OIL & GAS BOARD

Exhibit No: 15
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Marvin Rogers
Received by: SP

Mr. William Williford
Executive Vice-President
Chief Operations Officer
W&T Offshore, Inc.
5718 Westheimer Road, Suite 700
Houston, TX 77057

RE: Deficiencies in Offshore Operations

Dear Mr. Williford:

The Board's staff has determined that W&T Offshore has various deficiencies in offshore operations. We trust you will address them in an expeditious manner.

Bottom plugs in temporarily abandoned wells—We note that you have approximately 13 wells in temporarily abandoned status. Rule 400-2-4-.14 (1) (b) of the *State Oil and Gas Board of Alabama Administrative Code* requires a bottom plug on all temporarily abandoned wells. You should submit a schedule for installing these bottom plugs.

Parted casing in State Lease 615 #1 Well—As you are aware, a well with parted tubing cannot be utilized until the well is repaired. Please submit a schedule for repairing the well (or plugging the well).

Unsafe platform; State Lease 537, Tract 112 #4 Well—You should immediately rectify the unsafe platform.

Recent leaks in produced liquids pipeline—Leigh Blake, Manager of South Alabama Field Operations, has noted that W&T has had five leaks in a produced liquids pipeline since November 2024. Such leaks are required to be reported on Form OGB-27, *Notification of Fire, Spill, Leak, or Blowout*. A form has not been filed for all five leaks, and the forms are missing accurate and complete information. Furthermore, on some of the forms, the determination of the estimated volume of the leak has been omitted.

Please determine the amount of the liquid that leaked from the pipeline and obtain an analysis of the contents of the produced liquids line. We assume that the produced liquids transported through the line include saltwater, corrosion inhibitor, scale inhibitor, gas condensate, and diesel fuel as well as traces of other elements.

Recertifications of structural integrity—Rule 400-2-6-.09 (4) of the *State Oil and Gas Board Administrative Code* requires an offshore operator to recertify the structural integrity of offshore platforms every five years. W&T is overdue in submitting these recertifications.

Please address these deficiencies and supply the information requested.

Thank you for your cooperation.

Sincerely yours,

Berry H. (Nick) Tew, Jr.
State Geologist and Oil & Gas Supervisor

CC:

Ms. Kendra Sullivan
5718 Westheimer Road, Suite 700
Houston, TX 77057

Ms. Rebecca Pritchett
1901 Sixth Ave North, Suite 1700
Birmingham, AL 35203

JSt

ALABAMA
OIL & GAS BOARD

EXHIBIT 16

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

Marvin Rogers

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

CONFIDENTIAL BUSINESS INFORMATION - DO NOT DISCLOSE

PURCHASE AND SALE AGREEMENT

BETWEEN

EXXON MOBIL CORPORATION,

MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST INC.,

XH, LLC,

EXXON MOBILE BAY LIMITED PARTNERSHIP,

EXXONMOBIL U.S. PROPERTIES INC.

AND

W&T OFFSHORE, INC.

EFFECTIVE TIME:

JANUARY 1, 2019

ALABAMA OIL & GAS BOARD

Exhibit No: 16
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Marvin Rogers
Received by: EP

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PURCHASE AND SALE AGREEMENT

This Purchase and Sale Agreement ("Agreement") is between Exxon Mobil Corporation, a New Jersey corporation with an address of 22777 Springwoods Village Parkway, Spring, Texas 77389, Mobil Oil Exploration & Producing Southeast Inc., a Delaware corporation with an address of 22777 Springwoods Village Parkway, Spring, Texas 77389, XH, LLC, a Delaware limited liability company with an address of 22777 Springwoods Village Parkway, Spring, Texas 77389, Exxon Mobile Bay Limited Partnership, a Delaware limited partnership with an address of 22777 Springwoods Village Parkway, Spring, Texas 77389, and ExxonMobil U.S. Properties Inc., a Delaware corporation with an address of 22777 Springwoods Village Parkway, Spring, Texas 77389, as sellers, and W& T Offshore, Inc., a Texas corporation with an address of Nine Greenway Plaza, Suite 300, Houston, Texas 77046 ("Buyer"), as buyer, (each a "Party" and collectively, the "Parties") effective on the Execution Date as of the Effective Time. Sellers are hereinafter sometimes referred to collectively as "ExxonMobil" solely for convenience and simplicity; such reference is not intended to in any way affect the corporate separateness of these separate legal entities.

Buyer desires to purchase certain Interests (as defined hereafter) from ExxonMobil, and ExxonMobil desires to sell such Interests to Buyer, subject to the terms and conditions of this Agreement. It is the Parties' intent that Buyer have responsibility and liability for all matters relating to the Interests assigned, whether related to events occurring before or after closing this transaction, except to the limited extent provided in this Agreement.

In consideration of their mutual promises under this Agreement, the benefits to be derived by each Party, and other good and valuable consideration, Buyer and ExxonMobil agree as follows:

ARTICLE 1. DEFINITIONS

The following terms, when used in this Agreement, will have the following definitions:

1.01. Ad Valorem Taxes. Defined in Section 10.01.

1.02. Additional Instruments. The instruments executed by Buyer before Closing and delivered to ExxonMobil in connection with this transaction, including Buyer's investigation of and bid for the Interests.

1.03. Affiliate. In relation to a Person, any Person controlled by, controlling or under common control with, such Person.

1.04. Allocation. The amount allocated by Buyer to each individual part of the Interests.

1.05. Associated Party or Parties. Successors, assigns, directors, officers, employees, agents, contractors, subcontractors, insurers, and Affiliates.

1.06. Base Purchase Price. The amount set forth in Section 3.01.

1.07. Business Day(s). Any day that the offices of ExxonMobil, in Houston, Texas, are scheduled to be and are open for business.

1.08. Claim or Claims. Collectively, claims, demands, causes of action, and lawsuits asserted or filed by any Person; a local, state, or federal governmental entity; a Person holding rights under any Related Agreement; an Associated Party of Buyer or ExxonMobil; or a third party.

1.09. Closing. The delivery of the conveyancing instruments and funds by the Parties to close the purchase and sale of the Interests.

1.10. Closing Date. The date on which Closing is scheduled to and does occur.

1.11. Closing Settlement Statement. Defined in Section 8.04(c).

1.12. Code. The Internal Revenue Code of 1986, as amended.

1.13. Condition. Defined in Section 18.02.

1.14. Effective Time. 7 a.m. local time where the Interests are located, on January 1, 2019.

1.15. Environmental Laws. Applicable federal, state, and local laws, including statutes, regulations, orders and ordinances, previously or currently enacted or enacted in the future, and common law, relating to protection of public health, welfare, and the environment, including those laws relating to storage, handling, and use of chemicals and other hazardous materials; those relating to the generation, processing, treatment, storage, transport, disposal, cleanup, remediation, or other management of waste materials or hazardous substances of any kind; and those relating to the protection of environmentally sensitive or protected areas. "Environmental Laws" includes the Comprehensive Environmental Response, Compensation and Liability Act of 1980, the Resource Conservation and Recovery Act of 1976, the Clean Water Act, the Safe Drinking Water Act, the Hazardous Materials Transportation Act, the Toxic Substance Control Act, and the Clean Air Act, as each is amended from time to time.

1.16. Execution Date. The date on which the last of the Parties executes this Agreement.

1.17. ExxonMobil-operated. The interests and facilities of which ExxonMobil is Operator.

1.18. Final Settlement Statement. Defined in Article 21.

1.19. Interest or Interests. ExxonMobil's interest in the oil and gas leasehold estates or other interests set forth on Exhibits A and B, together with ExxonMobil's interest in the following:

(a) each Well located on the leases and land described on Exhibits A and B;

(b) the easements, permits, licenses, surface and subsurface leases, rights-of-way, servitudes, and other surface and subsurface rights affecting the land and leases described on Exhibit A, including those set forth on Exhibit B;

(c) material, equipment, pipelines, fixtures, personal property, buildings and facilities in and on the leases, units or Properties and (i) used or held for use solely in connection with the use or operation of the leasehold estates and other interests described on Exhibits A and B for oil or gas purposes or (ii) no longer in use but located on or appurtenant to the foregoing material, equipment, pipelines, fixtures, personal property, buildings, facilities or Properties unless expressly excluded from the Interests;

(d) surface fees further described on Exhibit A;

(e) additional rights-of-way granted by ExxonMobil to Buyer, as further described on Exhibit K;

(f) the facilities and pipelines located pursuant to the rights described in (b) and (e);

(g) contracts to which the Interests are subject, including agreements for sale or purchase of oil, gas, and other hydrocarbons, processing agreements, division orders, unit agreements, and operating agreements, including those listed on Exhibits A and B;

(h) 2009 Hankos aluminum boat, Hull No. HK044262J909, two 2018 Yamaha 150 engines, Serial No. 63PX1194294 and 64PX1021493, and utility boat trailer; and

(i) 250 Taylor Forklift, Model No. TE-250M, VIN No. S-H-20915.

Any references to ExxonMobil Accounting Codes are for ExxonMobil use only and are not a part of the description of the Interests.

The following are specifically excluded from the Interests:

(a) reservations, exceptions and exclusions listed in Exhibits A and B;

(b) surface fee properties not listed on Exhibit A;

(c) pipelines, fixtures, equipment, and interests in land owned by third parties such as lessors, purchasers, or transporters of Oil or gas;

(d) computer equipment (including process control software), telecommunications equipment, vehicles, tools, pulling machines, and other equipment and material temporarily located on the Property or expressly excluded from the sale;

(e) any gas processing plant not listed on Exhibit A; and

(f) ExxonMobil inter-Affiliate service agreements and any interest or interests owned by any ExxonMobil Affiliate that is not a party to this Agreement.

1.20. Lender. The financial institution from which Buyer will obtain financing for its purchase of the Interests, which financing Buyer represents to ExxonMobil is a line of credit.

1.21. Liability or Liabilities. Collectively, all damages (including consequential and punitive damages), including those for personal injury, death, or damage to personal or real property (both surface and subsurface) and costs for remediation, restoration, or cleanup of contamination, whether the injury, death, or damage occurred or occurs on or off the Property by migration, disposal, or otherwise, losses, fines, penalties, expenses, costs to remove or modify facilities on or under the Property, plugging liabilities for all Wells, attorneys' fees, court and other costs incurred in defending a Claim, liens, and judgments, in each instance, whether these damages and other costs are foreseeable or unforeseeable.

1.22. Material Difference. Defined in Section 20.02.

1.23 Material Related Agreements. Written agreements or commitments (a) that would, or would reasonably be expected to, cause Buyer to incur an expense or liability in excess of $250,000.00 or (b) without the assignment or transfer of which, Buyer would not be able to own or operate the Interests as a reasonably prudent operator.

1.24. NORM. Naturally occurring radioactive material.

1.25. Occurrence. Defined in Section 18.03(g).

1.26. Oil. Crude oil, distillate, drip gasoline, condensate, and other liquid hydrocarbons, including Raw Make.

1.27. Operator. The Person recognized as operator of an Interest by the applicable regulatory agency.

1.28. PCB. Polychlorinated Biphenyls.

1.29. Performance Deposit. Defined in Section 3.02.

1.30. Person. Any individual, firm, corporation, partnership, limited liability company, joint venture, association, trust, unincorporated organization, government or agency or subdivision thereof, or any other entity.

1.31. Property or Properties. The real property in which and on which the Interests exist or are located, whether in whole or in part.

1.32. Property Sales Accounting Agreement. An agreement substantially in the form of Exhibit D.

1.33. Raw Make. Defined in Section 14.02(a).

1.34. RCRA. The Resource Conservation and Recovery Act of 1976.

1.35. Related Agreements. Defined in Section 7.02

1.36. Strict Liability. Includes strict statutory liability and strict products liability.

1.37. TSCA. The Toxic Substances Contract Act of 1976.

1.38. Title Defect. Defined in Section 6.01.

1.39. Transition Services Agreement. An agreement substantially in the form of Exhibit I.

1.40. Well or Wells. All wellbores, both abandoned and unabandoned, including oil wells, gas wells, injection wells, disposal wells, and water wells, including, without limitation, wells drilled from the leases conveyed pursuant to this Agreement that cross or bottomhole on leases not conveyed under this Agreement.

ARTICLE 2. PURCHASE AND SALE

Pursuant to Buyer's offer, ExxonMobil agrees to sell the Interests to Buyer, and Buyer agrees to buy them from ExxonMobil, for the consideration recited in and subject to the terms of this Agreement.

ARTICLE 3. PURCHASE PRICE

3.01. Base Purchase Price. The Base Purchase Price is two hundred million United States dollars ($200,000,000.00), subject to adjustment only as provided in this Agreement.

3.02. Performance Deposit and Payment.

(a) As evidence of good faith, simultaneous with the execution of this Agreement, Buyer has deposited with ExxonMobil a performance deposit of ten million United States dollars ($10,000,000.00) (the "Performance Deposit"). The Performance Deposit will be credited to the Base Purchase Price at Closing, will not bear interest, and is not refundable except as provided in this Agreement. If Closing does not occur as to any Interest, and this Agreement provides that the Performance Deposit allocable on a pro rata basis to that Interest is to be refunded for any reason, ExxonMobil will deduct any amounts due to it under this Agreement and remit the remainder of the Performance Deposit to Buyer, without interest. Except as provided in Section 3.02(b), the Performance Deposit is not an earnest money deposit or liquidated damages, and forfeiture of the Performance Deposit as provided in this Agreement will be in addition to, and not in lieu of, the rights and remedies ExxonMobil may have under law or in equity for Buyer's failure to perform as provided in this Agreement.

(b) If, prior to the Closing Date, Buyer (i) notifies ExxonMobil, in writing, that the condition precedent relating to Lender's obligation to provide loans to Buyer for this transaction has not been satisfied or waived due to a "Material Adverse Change" in Buyer's consolidated financial condition or business; and (ii) Buyer has used reasonable commercial efforts to obtain a waiver of such condition from Lender; and (iii) Buyer provides ExxonMobil with a copy of Buyer's request for such waiver and Lender's written response denying such waiver, then this Agreement shall terminate and ExxonMobil shall retain the Performance Deposit as liquidated

damages, and notwithstanding anything else to the contrary in this Agreement, ExxonMobil shall have no other rights and remedies against Buyer for failure to perform under this Agreement.

3.03. Allocation of Base Purchase Price. Buyer has delivered to ExxonMobil, either prior to or simultaneous with the execution of this Agreement, an Allocation of the Base Purchase Price to each individual part of the Interests listed on the form (including an Allocation for non-investment account balances such as gas-production-imbalance accounts and, as required for compliance with applicable law, for equipment or other items). Buyer represents that it has made reasonable Allocations, in good faith. ExxonMobil may rely on the Allocations for all purposes. The Allocations will be used (a) to notify holders of preferential rights of Buyer's offer, (b) to collect taxes, to the extent required by law and as provided in Article 10, (c) as a basis for adjustments to the Base Purchase Price, and (d) as otherwise provided in this Agreement. ExxonMobil, solely at its discretion, may rely on the Allocations and reserves the right to review the basis of the allocation and/or use a different allocation for all tax purposes other than those provided in Article 10.

ARTICLE 4. INTENTIONALLY LEFT BLANK

ARTICLE 5. BUYER'S REVIEW

5.01. Buyer's Review before Signing this Agreement. ExxonMobil gathered data relating to the Interests and the Property for Buyer's review before Buyer submitted a bid and signed this Agreement. Buyer must notify ExxonMobil in writing if it wishes to review files, contracts or data in addition to those provided, but ExxonMobil's obligation to provide additional files, contracts or data is limited to files and data that are reasonably available to it through the use of reasonable efforts. **EXXONMOBIL HAS NO OBLIGATION TO PROVIDE ACCESS TO, AND BUYER WAIVES ALL CLAIMS TO INSPECT, EXXONMOBIL'S INTERPRETIVE, PREDICTIVE, CONFIDENTIAL, PRIVATE, PROPRIETARY, OR PRIVILEGED INFORMATION (INCLUDING PERSONNEL RECORDS), OR INFORMATION WHOSE DISSEMINATION IS RESTRICTED BY AGREEMENTS BETWEEN EXXONMOBIL AND THIRD PARTIES.** ExxonMobil has no obligation to provide any information to Buyer that is available to the general public, whether in the public records or from a governmental entity or agency on request.

By entering into this Agreement, Buyer acknowledges and represents that, subject to its rights to conduct an Environmental Assessment under Section 5.03, it has reviewed the Interests and Property to its satisfaction to enable it to make its bid and execute this Agreement and that it may request adjustments to the Allocations and the Base Purchase Price after the Execution Date only for Title Defects, Conditions, and Material Differences, as provided in this Agreement. Buyer has undertaken all appropriate inquiry, to its satisfaction, and has made an informed decision to acquire the Interests on the basis of its own investigations and without reliance on statements or investigations by any other Person, including ExxonMobil and its Associated Parties.

5.02. Access to ExxonMobil-Operated Interests. Subject to its rights to conduct an Environmental Assessment under this Section 5.03, Buyer had the opportunity to inspect and inventory the ExxonMobil-operated Interests and Property before signing this Agreement. On

Buyer's request, ExxonMobil will provide access to the ExxonMobil-operated Interests and Property and associated facilities, at any reasonable time before Closing.

All visits to the premises and facilities by Buyer and on Buyer's behalf will be scheduled by mutual consent of the Parties, subject to Buyer's providing ExxonMobil at least five (5) days written notice of the locations that it wishes to visit and the proposed times. ExxonMobil may accompany Buyer and its Associated Parties during their site visits. Entry onto the ExxonMobil-operated Interests, Property, and facilities will be subject to third-party restrictions, if any, and to ExxonMobil's safety, industrial hygiene, and drug and alcohol requirements and at Buyer's sole risk and expense.

Within two (2) years of Closing, ExxonMobil shall cooperate and grant to a mutually agreeable accounting firm access to ExxonMobil's financial and accounting information directly relating to the Interests as needed for the preparation of certain financial statements that may be required of Buyer pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC") including SEC Regulation S-X and Rule 3-05. Such access shall be limited to information for the calendar years 2016, 2017 and 2018 that exists in ExxonMobil's offices, as may reasonably be required to prepare audited financial statements reflecting gross revenues and direct lease operating expenses related to the Interests. Buyer shall provide at least sixty (60) Business Days prior notice to ExxonMobil before the accounting firm shall commence such review. It is understood that such review will only be required to be carried out one time. Furthermore, unless otherwise agreed by ExxonMobil, the accounting firm shall not disclose information to Buyer that is proprietary to ExxonMobil or its Associated Parties, including gas and liquids sales prices.

5.03. Environmental Assessment. Buyer and its Associated Parties may inspect the premises and conduct an environmental assessment (including a Phase I environmental assessment) of the Interests and Property, including investigations to identify wetlands and sensitive and protected habitats, but Buyer must execute the form of environmental testing and confidentiality agreement attached as Exhibit F before performing an assessment. If Buyer undertakes an environmental assessment, both the consultant (if consultants are employed) and the scope of the proposed assessment, including testing protocols, must be approved in writing by ExxonMobil before the work may begin. If Buyer and ExxonMobil cannot agree on Buyer's proposed environmental assessment plan, then ExxonMobil may, at its sole option, withdraw from this Agreement any of the Interests that Buyer proposes to assess or all the Interests, and the Base Purchase Price will be adjusted by the Allocation for each withdrawn Interest. If ExxonMobil withdraws all the Interests, this Agreement will terminate, and ExxonMobil will refund the Performance Deposit to Buyer. If ExxonMobil withdraws less than all the Interests, then Buyer may terminate this Agreement by providing written notice to ExxonMobil within five (5) Business Days after receipt of ExxonMobil's notice of the Interests so withdrawn and ExxonMobil will refund the Performance Deposit to Buyer.

If Buyer takes samples from the Property, ExxonMobil may require splitting of each sample. Buyer will deliver copies of all draft and final reports, results, data, and analyses of the site visits, inspections, and assessments to ExxonMobil within five days of Buyer's receipt of them, at Buyer's cost. ExxonMobil will have no confidentiality obligation with regard to this information and may disclose it to third parties or use it for any purpose.

5.04. Access to Interests Operated by Others. On request, ExxonMobil will assist Buyer by making initial contact with the Operators of the Interests that are operated by others, but Buyer will be responsible for contacting each Operator to arrange for review of the Interests. ExxonMobil will provide Buyer with access to ExxonMobil file information relating to the Interests operated by others, to the extent described in Section 5.01.

5.05. Material, Facilities, Platforms, and Equipment. By signing this Agreement, Buyer acknowledges that it has had the opportunity to inspect and inventory the material, facilities, platforms, and equipment and, subject to Buyer's rights to an Environmental Assessment under Section 5.03, is satisfied with them. There will be no adjustment on the basis of material, facilities, platforms, and equipment, whether for ExxonMobil-operated Interests or Interests operated by others. Material, facilities, platforms, and equipment observed during Buyer's inspection may be used or replaced before Closing as a result of normal and customary operations.

5.06. No Warranty of Accuracy; Disclaimer. **EXXONMOBIL MAKES NO WARRANTY, AND EXPRESSLY DISCLAIMS ALL WARRANTIES, AS TO THE ACCURACY OR COMPLETENESS OF THE FILES AND OTHER INFORMATION THAT IT MAY PROVIDE TO BUYER OR THAT MAY BE PROVIDED BY OTHERS. If Buyer determines during its review that any ExxonMobil files or data may be incomplete or inaccurate, it will either notify ExxonMobil of its conclusions in writing not later than ten (10) days before the Closing Date or be deemed to have waived complaints as to the incompleteness or inaccuracy of the files or data.**

5.07. Buyer's Confidentiality Obligations. Buyer will keep confidential all information concerning the Interests, except to the extent that information (a) was public knowledge when Buyer received the information; (b) becomes public knowledge without breach of this Agreement by Buyer; (c) was known to Buyer before receipt or discovery of the information in connection with its review of the Interests, from a source that was authorized to disclose the information to third parties; or (d) is required by applicable law or court order to be disclosed. If information is required to be disclosed by law or court order, Buyer will make every reasonable effort to give ExxonMobil notice of the requirement as far in advance of the disclosure as possible. Buyer may not use the information for any purpose other than evaluation of the Interests and may not divulge the information to any Person except those who need to know it in order to evaluate the Interests for Buyer under this Agreement. Buyer will enforce this confidentiality obligation as to all Persons with whom it shares the information and is liable to ExxonMobil for a breach of this obligation by any Person to whom Buyer has disclosed the information. If this transaction does not close, Buyer will return to ExxonMobil all information concerning the Interests that it obtained from ExxonMobil, destroy all of its work papers and analyses that incorporate the information, and be subject to these confidentiality obligations for five (5) years after the Execution Date. Buyer's confidentiality obligation will not, however, survive Closing.

ARTICLE 6. TITLE AND TITLE DEFECTS

6.01. Title Defect. "Title Defect" means any one of the following:

(a) ExxonMobil's title at the Effective Time as to all or any part of the Interests is subject to an outstanding mortgage, deed of trust, lien, or other monetary encumbrance or adverse claim not listed or referenced on Exhibit A or B that, in the

case of that claim, would induce a purchaser to suspend payment of proceeds for the Interest or require the furnishing of security or indemnity;

(b) ExxonMobil's net revenue interest for an Interest at the Effective Time is less than that shown on Exhibit A-1, or ExxonMobil's working interest for an Interest at the Effective Time is greater than shown on Exhibit A-1 without a corresponding increase in the net revenue interest for such Interest;

(c) ExxonMobil's interest would be reduced if a third party were to exercise a reversionary, back-in, or other similar right pursuant to an agreement not listed or referenced on Exhibit A or B;

(d) ExxonMobil is in default under some material provision of a lease, farmout agreement, or other agreement, resulting in loss of all or any part of the Interests; or

(e) There exists any impairment, encumbrance, lien, encroachment, irregularity, defect or dispute concerning ExxonMobil's title to the Interests that would reduce, impair or prevent Buyer from receiving payment from the purchasers of production from the Interests or that would restrict or extinguish Buyer's right to use the Interests or Properties as owner, lessee, licensee or permittee, as applicable.

"Title Defect" does not include (a) a lien or encumbrance in the form of a judgment secured by a supersedeas bond or other security approved by the court issuing the order; or (b) the loss of lease acreage between the Effective Time and the Closing Date, because the lease term expires, unless it is a direct result of ExxonMobil's failure to comply with the terms of said lease.

Buyer must notify ExxonMobil in writing promptly if Buyer determines that ExxonMobil's net revenue interest or working interest for an Interest is greater than shown on Exhibit A-1.

6.02. Adjustments to Base Purchase Price based on Allocations.

(a) Buyer may request an adjustment to the Base Purchase Price based on an Allocation at any time on or before the 10th day before the Closing Date, if the adjustment is based on a Title Defect. ExxonMobil may request an adjustment to the Base Purchase Price based on an Allocation at any time before the 10th day before the Closing Date, if ExxonMobil's net revenue interest for the Interest is greater than that shown on Exhibit A-1. A notice requesting an adjustment must be timely and in writing and include appropriate documentation to substantiate the adjustment, or the claimant will be deemed to have waived its claim to adjust the Base Purchase Price based on an Allocation for the matter stated in the notice.

(b) If either Party gives notice under the previous Section, the Parties will meet and use their best efforts to agree on the validity of the claim and, if applicable, the amount of the adjustment, using the following criteria:

(1) If the claim is based on ExxonMobil's owning a different net revenue interest than that shown on Exhibit A-1, then the adjustment

will be the absolute value of the number determined by the following formula:

Adjustment = A x (1-[B/C])

A = Allocation for the affected Interest

B = correct net revenue interest for the affected Interest

C = net revenue interest for the affected Interest as shown on Exhibit A-1.

(2) If the claim is based on an obligation or burden that is liquidated in amount, then the adjustment will be the sum necessary to remove the obligation or burden from the affected Interest.

(3) If the claim is based on an obligation or burden that is not liquidated, but can be estimated with reasonable certainty, the adjustment will be the sum necessary to compensate Buyer on the Closing Date for the adverse economic effect on the affected Interest.

(c) If the amount of the adjustment for each Title Defect cannot be determined based on the above criteria, and if the Parties cannot otherwise agree on the amount of an adjustment by the Closing Date, ExxonMobil may, upon written notice to Buyer, either:

(1) terminate this Agreement and refund the Performance Deposit; or

(2) remove the affected Interest from this Agreement and adjust the Base Purchase Price by the Allocation for that Interest; provided, however, that in such event Buyer shall be entitled to terminate this Agreement by providing prompt written notice to ExxonMobil. If Buyer elects to so terminate, ExxonMobil shall refund the Performance Deposit to Buyer; or

(3) elect to cure the Title Defect pursuant to Section 6.02(e); or

(4) elect to resolve the dispute pursuant to the provisions of Article 17.

(d) The Base Purchase Price will be adjusted only if the sum (i.e. offsetting of increases and decreases) of all adjustments under this Section 6.02 is greater than two percent (2%) of the Base Purchase Price. If the sum of all such adjustments would result in the Base Purchase Price being reduced by more than ten percent (10%), then ExxonMobil may, upon written notice to Buyer, either:

(1) terminate this Agreement and refund the Performance Deposit; or

(2) remove the affected Interest from the Agreement and adjust the Base Purchase Price by the Allocation for that Interest; provided, however, in such event Buyer shall be entitled to terminate this Agreement by providing prompt written notice to ExxonMobil. If Buyer elects to so terminate, ExxonMobil shall refund the Performance Deposit to Buyer.

(e) ExxonMobil may, at its sole option, notify Buyer before the Closing Date that it elects to cure some or all of the Title Defects, subject to the limitations contained in Section 6.02(d). No adjustment will be made at Closing for the Title Defects that ExxonMobil elects to cure and actually cures by the Closing Date. If any Title Defect is not cured within ninety (90) days after Closing, an adjustment to the Base Purchase Price will be calculated and made under the criteria set forth in this Section 6.02 and subject to the limitations set forth in Section 6.02(d).

6.03. Description and Other Errors.

(a) If either Party determines, either before or within one (1) year after Closing that:

(1) certain Interests were erroneously included in or excluded from the Agreement or the conveyancing instruments, including those owned by an ExxonMobil Affiliate; or

(2) certain gas-production imbalance accounts were erroneously included in or erroneously excluded from this Agreement,

then ExxonMobil and Buyer will meet and use their best efforts to resolve the error. If necessary, the Parties will execute and record (if after Closing) appropriate correction instruments to correct the error.

(b) If ExxonMobil and Buyer cannot resolve an error discovered before the Closing Date, then ExxonMobil may, upon written notice to Buyer, either:

(1) terminate this Agreement and refund the Performance Deposit; or

(2) remove the affected Interest from this Agreement, if applicable, and adjust the Base Purchase Price by the Allocation for such Interest; provided, however, in such event Buyer shall be entitled to terminate this Agreement by providing prompt written notice to ExxonMobil. If Buyer elects to so terminate, ExxonMobil shall refund the Performance Deposit to Buyer; or

(3) elect to resolve the dispute pursuant to the provisions of Article 17.

(c) If ExxonMobil and Buyer cannot resolve such an error with respect to an Interest assigned to Buyer and discovered within one (1) year after the

Closing Date, then the matter shall be resolved pursuant to the provisions of Article 17.

Notwithstanding the foregoing, the Parties will cooperate at all times after Closing to execute and record correction instruments to correct scrivener's errors in the preparation of Closing documents.

6.04. Restrictions on Use. Where any of the Interests include a fee simple interest in real property that has been used for oil, gas, or other mineral operations, the following uses of the affected land, or any portion thereof, are expressly prohibited and forbidden:

(a) any "residential" construction, development, use or purpose, which shall, without limitation, be interpreted to mean and include a prohibition against use for single or multi-family residences, residences for children, the elderly or the infirm, churches and places of worship, schools, nurseries and other pre-school facilities, nursing or convalescent homes, hospitals, health clinics, or other medical facilities, day care facilities, playgrounds, recreational parks, hotels, motels, bed and breakfasts, parks and in addition to the above, and other "Residential land use" restrictions or limitations set forth or described in any and all building, zoning and land use ordinances, laws, regulations and restrictions by municipal or other governmental authorities applicable to the Property;

(b) any purpose that would constitute a "Permitted Use" under any of the residential zones, districts, or classifications set forth in any applicable municipal, county or state zoning laws in effect at the Effective Time,

(c) any agricultural use;

(d) construction or installation of any basements, parking structures or other sub-surface areas; or

(e) any water wells for irrigation or drinking purposes.

6.05. Engineering Controls. Buyer agrees to adopt and use all engineering and related technical assistance available and standard to the industry and any required by Environmental Laws to protect the health and safety of persons and that Buyer will use and implement engineering controls to prevent the migration of vapors and/or liquids containing contamination into any buildings, underground utilities / spaces and / or storm water retention / detention ponds, including without limitation, vapor installation systems, vapor barriers, sealed sumps and storm pond liners as determined to be necessary by a professional engineer license in the state with experience in the field. Buyer shall take measure(s) to isolate building occupants from identified contamination as may be required by Environmental Laws to protect the health of occupants / public.

6.06. Covenants Running with the Land. The covenants contained in provisions 6.04 and 6.05 of this Agreement shall be covenants running with the land, shall be recorded in the real property records, and shall be binding on Buyer and its successors and assigns.

6.07. Retention of Title for Gas. During the period from the Effective Time of this Agreement until the Closing Date, ExxonMobil (or a designated Affiliate) shall be deemed to have title to all gas subject to this Agreement for the purposes of contracting for and scheduling transportation of such gas, subject to reconciliation of the net proceeds between ExxonMobil and Buyer in accordance with Article 21 of this Agreement. Further, as of the Closing Date, Buyer shall have title to all gas subject to this Agreement for purposes of contracting for and arranging transportation of such gas; provided, however, that until ExxonMobil has transferred to Buyer all commercial gas marketing activities related to all gas subject to this Agreement, Buyer agrees that ExxonMobil (or a designated affiliate) shall act as Buyer's agent for purposes of marketing all natural gas subject to this Agreement, including but not limited to the arrangements for transportation of such gas on any interstate or intrastate pipeline. ExxonMobil agrees to provide notification to Buyer when all such marketing activities have been transferred, which transfer shall occur no later than sixty (60) days from the Closing Date, or such date as specified in the Transition Services Agreement.

ARTICLE 7. PRE-CLOSING OBLIGATIONS

7.01. Preferential Rights.

(a) Notice. ExxonMobil will notify the preferential rights holders, if any, of applicable preferential rights to purchase the Interests.

(b) Adjustment to Base Purchase Price. If a third party gives notice of its intent to exercise a preferential right to purchase any of the Interests, the Base Purchase Price will be adjusted by the Allocation for the preferential right property. If Buyer has allocated a positive dollar amount to the preferential right property, the Base Purchase Price will be reduced by the dollar amount of the positive Allocation. If Buyer has allocated a negative dollar amount to the preferential right property, the Base Purchase Price will be increased by the absolute value of the negative Allocation.

(c) Third Party Failure to Purchase. If a third party gives notice of its intent to exercise a preferential right to purchase any of the Interests, but does not close the purchase for any reason either before or within a reasonable time after Closing (which time shall be no sooner than the time allowed such third party under the terms of the preferential right), Buyer will be obligated to acquire the preferential right property under the terms of this Agreement, for the positive dollar Allocation (or if the Allocation is a negative amount, ExxonMobil will refund the absolute value of the negative amount to Buyer, without interest). Closing on the preferential right property will be scheduled to occur within forty-five (45) days after Buyer receives ExxonMobil's notice that the third party has not closed. The effective time for the preferential right property will be the Effective Time under this Agreement and appropriate adjustments will be made for pre and post effective date revenues and expenses.

7.02. Related Agreements. Except as otherwise provided in this Agreement, the sale of the Interests will be subject to all oil, gas, and mineral leases, assignments, subleases, farmout

agreements, unit agreements, joint operating agreements, pooling agreements, letter agreements, easements, rights-of-way, gathering and transportation agreements, sales agreements, and other agreements concerning or pertaining to the Interests ("Related Agreements"), to the extent that they are binding on ExxonMobil or its successors or assigns. Buyer will assume all of ExxonMobil's obligations and liabilities under the Related Agreements as of the Effective Time, insofar as the obligations or liabilities concern or pertain to the Interests, and the Parties will execute all documents necessary for Buyer to assume the Related Agreements. Buyer's obligation applies to all Related Agreements whether recorded or not.

7.03. Third Party Notifications and Approvals. The sale of the Interests may require the approval or consent of lessors, joint interest owners, farmors, sublessors, assignors, grantors, parties to agreements, governmental bodies having jurisdiction (in addition to applicable antitrust, trade and competition law clearances, if any, required under Article 25), or other third parties.

(a) ExxonMobil shall prepare and send notices to the holders of third party approvals or consents required for the transfer or assignment to Buyer of those Related Agreements identified on Schedule 7.03 to Exhibit A and will furnish Buyer with proof of each consent or approval so obtained on or before the Closing Date. Buyer shall cooperate and use reasonable efforts to assist ExxonMobil (at no cost to ExxonMobil) in obtaining all such approvals and consents. If a consent or approval is withheld because there is a request from the consent holder that Buyer provide appropriate collateral or security, then Buyer will use reasonable efforts to provide such collateral or security, in order to obtain the consents or approvals. ExxonMobil shall not be liable to Buyer by reason of any third party's refusal to provide a consent or approval under this Section 7.03(a). ExxonMobil will make reasonable efforts to obtain waivers of maintenance-of-uniform interest provisions, if any, from joint interest owners.

(b) Except as expressly provided in Section 7.03(a), Buyer shall be responsible for obtaining, at its cost and expense, and shall use its reasonable efforts to obtain, all other required consents and approvals for transfer or assignment of an Interest, including but not limited to all required local, state and federal governmental consents and approvals. Provided, however, that ExxonMobil, at is sole discretion, may elect to obtain certain government approvals described in this Section 7.03(b). Other than those governmental consents or approvals that are typically obtained post-Closing (for example, Bureau of Ocean Energy Management assignment approval) or that ExxonMobil agrees may be obtained post-Closing for this transaction, Buyer shall furnish ExxonMobil with proof of each required consent or approval on or before the Closing Date.

(c) If the Parties are unable to obtain all material third party approvals or consents applicable to the assignment of any Interest (other than those governmental consents or approvals typically obtained post-Closing or to transfer the Related Agreements identified on Schedule 7.03 to Exhibit A) in accordance with and as required under Sections 7.03(a) and 7.03(b), then ExxonMobil may, by written notice to Buyer, elect to either:

(1) delay Closing as to any or all of the Interests, with no charge to either Party for the delay; or

(2) with Buyer's written consent (except that Buyer's consent shall not be required for governmental approvals typically obtained post-Closing), close without all third party approvals or consents (except those required under Article 25); provided, however, that if Buyer does not so consent, then each Party shall be entitled to terminate this Agreement, with refund of the Performance Deposit, by providing written notice of termination to the other; or

(3) terminate this Agreement and refund the Performance Deposit; or

(4) with Buyer's written consent, remove the affected Interest from this Agreement and adjust the Base Purchase Price by the Allocation for that Interest. If Buyer does not so consent, then each Party shall be entitled to terminate this Agreement, with refund of the Performance Deposit, by providing written notice of termination to the other.

(d) Except for any antitrust, trade or competition law clearances required under Article 25, which are conditions precedent to Closing as provided in Article 8.06(b), ExxonMobil and Buyer may mutually agree to close without all third party approvals. If the Parties elect to close without such third party approvals, ExxonMobil may require Buyer to reassign the affected Interest to ExxonMobil if the third party refuses to approve the assignment after Closing. The reassignment will be in the manner described in Section 9.05.

7.04. Change of Operator. Unless otherwise provided by applicable law, regulation, or Related Agreement, Buyer, at its sole cost, must apply for and obtain any and all regulatory approvals and permits and satisfy requirements of financial security to operate the Interests either that it will operate or for which it intends to stand for election as Operator, and deliver copies or other evidence of compliance to ExxonMobil before Closing.

7.05. Employees. If Buyer elects to offer employment to the employees of ExxonMobil (or its Affiliates) located on the Interests, the provisions of Exhibit G shall apply.

ARTICLE 8. CLOSING

8.01. Closing Date. The Closing Date will be on or before August 30, 2019, unless delayed as provided in this Agreement, at ExxonMobil's offices at 22777 Springwoods Village Parkway, Spring, Texas, or at another place that ExxonMobil designates. If the Parties agree, Closing may be handled by exchange of documents (by mail or by courier). No price adjustment will be made if Closing is delayed except in accordance with Section 8.04(c) and Article 21.

8.02. Buyer's Right to Delay Closing. Buyer may, at its sole option and for any reason, delay Closing for up to thirty (30) days after the originally-scheduled Closing Date, upon written notice to ExxonMobil. If Buyer elects to delay Closing, ExxonMobil may require Buyer to pay, an additional performance deposit equal to five percent (5%) of the Base Purchase Price within

five (5) days. The additional performance deposit will be treated as part of the Performance Deposit for all purposes under this Agreement.

8.03. ExxonMobil's Right to Delay Closing. In addition to its rights under Article 7.03, ExxonMobil may, at its sole option and for any reason, delay Closing for up to thirty (30) days after the originally-scheduled Closing Date, upon written notice to Buyer.

8.04. Closing Obligations.

(a) Certificates of Authority. Buyer may require ExxonMobil to deliver, at least five (5) days before the Closing Date, a copy of a power of attorney for each individual executing the closing documents as evidence that the individual has authority to act on behalf of ExxonMobil. ExxonMobil may require Buyer to deliver, at least five (5) days before the Closing Date, certificates in form and substance satisfactory to ExxonMobil, effective as of the Closing Date and executed by Buyer's duly authorized officer, partner, or owner, as appropriate, to the effect that:

(1) Buyer has all requisite corporate, partnership, or other power and authority to purchase the Interests on the terms of this Agreement and to perform its other obligations under this Agreement and has fulfilled all corporate, partnership, or other prerequisites to closing this transaction; and

(2) each individual executing the closing documents has the authority to act on behalf of Buyer.

(b) Change of Operatorship. For ExxonMobil-operated Interests, and except to the extent typically obtained post-Closing or waived by ExxonMobil, Buyer will deliver to ExxonMobil on or before the Closing Date evidence of the following:

(1) that Buyer has complied with the requirements of all laws and regulations relating to the transfer of operatorship, including those regarding the assumption of responsibility for the plugging and abandoning of each Well that is included in the applicable Interests or located on the Property, including any financial security requirements; and

(2) that Buyer has, to the extent possible under applicable regulations, obtained all necessary permits or transfers of permits to operate the applicable Interests and Property.

(c) Closing Settlement Statement. Within five (5) days prior to the Closing Date, ExxonMobil will provide a Closing Settlement Statement (the "Closing Settlement Statement") including items such as Base Purchase Price, adjustments to the Base Purchase Price (if any), Performance Deposit, revenue received, costs and expenses as provided in this Agreement, Ad Valorem Taxes, severance taxes, federal excise and energy taxes, gas imbalance adjustments, and copying and recording fees, to the extent this information is available at Closing. ExxonMobil will use reasonable

estimates in the Closing Settlement Statement to the extent that estimates are necessary and may correct the estimates in the Final Settlement Statement.

The Purchase Price will be increased, without duplication, by the following expenses and revenues:

(i) ExxonMobil's share of all actual production and operating costs and expenses, overhead charges under applicable operating agreements, and capital expenditures paid or incurred by ExxonMobil in connection with ownership or operation of the Interests and Properties (including royalties, minimum royalties, rentals, and prepaid charges), to the extent they are attributable to the Interests or Properties for the period on and after the Effective Date;

(ii) ExxonMobil's share of any proceeds from the sale of hydrocarbons produced from or attributable to the Interests and Properties and other income from the Interests and Properties received by Buyer, and the value of any stock tank oil and any pipeline inventory, to the extent they are attributable to the ownership or operation of the Interests or Properties before the Effective Date; and

(iii) Any other increases in the Purchase Price specified in this Agreement or otherwise agreed in writing between ExxonMobil and Buyer prior to or at Closing.

The Purchase Price will be decreased, without duplication, by the following expenses and revenues:

(i) ExxonMobil's share (Buyer's share after Closing) of any proceeds from the sale of hydrocarbons produced from or attributable to the Interests and Properties, and other income attributable to the Interests and Properties and received by ExxonMobil, and the proceeds from any sale by ExxonMobil of any stock tank oil and any pipeline inventory, to the extent they are attributable to the ownership and operation of the Interests or Properties on or after the Effective Date;

(ii) Any other decreases in the Purchase Price specified in this Agreement or otherwise agreed in writing between ExxonMobil and Buyer; and

(iii) Any amounts received or to be received by ExxonMobil for the sale, salvage or other disposition after the Effective Date of any equipment without Buyer having received full payment therefor, unless otherwise adjusted under another provision of this Agreement.

(d) Closing Documents. The Parties, as indicated, will execute the following instruments to close this transaction:

(1) An instrument in the form of the Assignment and Bill of Sale attached as Exhibit C, modified to the extent necessary to conform to the terms of this Agreement. The Assignment and Bill of Sale will be effective as of the Effective Time, be without warranty of any kind (e.g., title, fitness, condition) other than the special warranty expressly described in Article 5 of Exhibit C, and restate the indemnities, releases, and waivers contained in this Agreement. Exhibit A-1 to this Agreement states ExxonMobil's working and net revenue interests, to the best of ExxonMobil's knowledge and belief. The Assignment and Bill of Sale will not, however, state or warrant the working or net revenue interests assigned to Buyer.

If ExxonMobil will own an interest after Closing in any Interest or Property (including overriding royalties, deep rights, and facilities, equipment, or pipelines) or continue to own interests for which ExxonMobil requires access across the Interests or Property in order to exercise its rights, then, in the Assignment and Bill of Sale, ExxonMobil will reserve concurrent interests in the applicable easements, rights-of-way, contracts, and other rights relating to the retained or reserved interests. In the event ExxonMobil retains an overriding royalty interest or other interest in production in the Interests, the Assignment and Bill of Sale shall also grant ExxonMobil the right to audit Buyer's records relating to such retained interest.

ExxonMobil may require the Parties to execute separate instruments for each state or county in which the Interests are located to facilitate timely recording.

(2) Letter-in-lieu-of-transfer order (or other instrument) to give notice of this transaction to remitters of proceeds.

(3) The Property Sales Accounting Agreement, substantially in the form of Exhibit D attached hereto.

(4) Special Warranty Deed(s), substantially in the form of Exhibit J attached hereto.

(5) Right(s)-of-Way, substantially in the form of Exhibit K attached hereto.

(6) Other documents reasonably required to close this transaction and implement the terms of this Agreement, including deeds, bills of sale, and the like and instruments necessary under operating agreements, plans of unitization, laws, and regulations affecting the

Interests to transfer the Interests and related obligations from ExxonMobil to Buyer.

(7) Change-of-operator forms for each Well that Buyer intends to operate after Closing. If the Operator of a Well must be elected or designated after Closing, the applicable instruments will be executed after the election or designation, as applicable.

(8) The Closing Settlement Statement.

(9) A mutually acceptable Transition Services Agreement, substantially in the form of Exhibit I attached hereto.

(10) Subject to Section 7.03(b), any documents and permits necessary or required by the applicable regulatory agency or governmental body to convey the Interests and transfer operations to Buyer.

(e) Third-Party Consents. At Closing, Buyer or ExxonMobil, as applicable, will deliver proof of third-party consents and approvals as required in Section 7.03(a) and Section 7.03(b), unless the Parties agree to close without all required third-party consents and approvals, as provided in Section 7.03(c).

(f) Financial Security. Contemporaneously with the execution of this Agreement, Buyer has delivered to ExxonMobil a Performance Bond in the amount of $27,300,000.00 (the "Penal Sum") in favor of ExxonMobil ("the Performance Bond") as evidence of Buyer's financial security to guarantee Buyer's obligations as provided in Section 9.08, which Performance Bond will become effective if, as and when Closing occurs.

(1) Upon occurrence of any of the following and after prior notice to Buyer of at least ten (10) Business Days, ExxonMobil may draw on the Performance Bond, in whole or in part, but such a draw on the Performance Bond will not release or discharge Buyer from its obligations under this Agreement:

(A) ExxonMobil is required in any manner to perform obligations under Section 9.08, whether pursuant to an order or directive issued by a governmental body or regulatory agency or otherwise; or

(B) Buyer is in default of any of its obligations under Section 9.08 and ExxonMobil has opted to therefore perform any or all such obligations of Buyer (provided however that nothing herein shall be construed as imposing an obligation upon ExxonMobil to so perform).

(2) If Surety has its certificate of suretyship revoked or its Issuer Rating by Standard & Poor's drops below A with a stable outlook, within

thirty (30) days of such occurrence, the Buyer will replace the Performance Bond with another performance bond in a form substantially similar to the form attached as Exhibit H issued by a mutually agreeable financial institution, as replacement Surety, ("Replacement Performance Bond"). In such event, ExxonMobil: (A) shall execute such Replacement Performance Bond within fifteen (15) days after it is provided to ExxonMobil by Principal and the replacement Surety, and (B) release and discharge any prior Performance Bond and the obligations of Buyer and the surety thereunder.

(3) By June 1 of each year, the Penal Sum of the Performance Bond (and Replacement Performance Bond, if applicable) will be increased in accordance with the schedule outlined in Exhibit H-1.

(4) The Parties agree and acknowledge that the Penal Sum does not represent the sum of anticipated costs associated with all P&A Obligations contemplated by this Agreement, nor is it intended to limit Buyer's liability related to the P&A Obligations.

(5) Notwithstanding the above, if Buyer provides to the Bureau of Ocean Energy Management, the Bureau of Safety and Environmental Enforcement, and/or the State of Alabama (collectively "the Regulator") supplemental bond(s) intended for any of the P&A Obligations ("Supplemental Bond(s)") and, with respect to any such Supplemental Bond(s) provided to the Bureau of Ocean Energy Management and/or the Bureau of Safety and Environmental Enforcement, ExxonMobil is named as a co-obligee for such Supplement Bond(s) ("Co-Obligee Bonds"), then the Penal Sum of the Performance Bond (and Replacement Performance Bond, if applicable) will be reduced by the amount of such Supplemental Bond(s), proportionate to ExxonMobil's interest in the Lease(s) assigned to Buyer and to which the Supplemental Bond applies; provided that, if the Regulator does not accept a Co-Obligee Bond after reasonable efforts by Buyer to secure such acceptance, the Penal Sum of the Performance Bond (and Replacement Performance Bond, if applicable) will be reduced by the amount of any Supplemental Bond posted in favor of the Regulator only. However, it is expressly agreed that the Penal Sum of the Performance Bond (and Replacement Performance Bond, if applicable) shall not be reduced or affected in any way by any area wide, base or general bonds (including a State of Alabama Oil & Gas Board operator blanket bond) that Buyer may provide to the Regulator. If the Regulator reduces any Supplemental Bond(s) for reasons not due to a fulfillment of any P&A Obligation (for example if Buyer has attained an exempt status as determined by the Regulator), then the amount of the Performance Bond shall

immediately increase to offset such reduction, but in no event shall such increase be greater than the amount necessary to satisfy the then current obligation under Exhibit H-1, and the new Penalty Sum shall be determined in accordance with this Section 8.04(f).

(6) At any time after January 2020, but no more often than once every twenty four (24) months, Buyer shall have the right to request a review of the P&A Obligations and potential reduction of the Penal Sum and a revision to Exhibit H-1 (each a "Redetermination Review"). Buyer must submit a written request to ExxonMobil for each Redetermination Review, which request shall not be unreasonably denied, conditioned or withheld. The Parties shall schedule a Redetermination Review at a time and place mutually convenient to the Parties. At each Redetermination review, Buyer shall provide P&A Documentation, as described in Section 8.04(f)(8) below.

(7) On or before the date that is thirty (30) days after each Redetermination Review, ExxonMobil shall execute a release of an amount of the Penal Sum of the Performance Bond, if determined necessary in the Redetermination Review.

(8) For purposes of this Section 8.04(f) and Section 9.08, reasonably satisfactory evidence that a P&A Obligation has been performed shall include executed forms or other written documentation as may be provided to any governmental authority under applicable law to reflect the completion of a P&A Obligation (including, without limitations, forms and documentation related to plugging and abandonment activities, site clearance activities and pipeline abandonment or removal activities and completion of remediation activities (collectively, the "P&A Documentation").

(9) Until such time as all of the P&A Obligations have been performed, ExxonMobil reserves, with prior notice to Buyer of at least five (5) Business Days, access rights to the Interests and Property for the limited purpose of documenting and/or verifying the P&A Obligations, as needed.

(g) Payment to ExxonMobil. At Closing, Buyer will pay ExxonMobil the net amount shown on the Closing Settlement Statement by funds transfer as that term is defined in Chapter 4 of the Texas Business and Commerce Code. This amount is subject to further adjustment after Closing as provided in this Agreement. Notwithstanding any other provision of this Agreement, Buyer must make payment by the specific means stated, or ExxonMobil may refuse to proceed with Closing until ExxonMobil, in its sole discretion, is satisfied that it has received full payment. This right is in addition to all other rights and remedies ExxonMobil may have under this Agreement, at law, or in equity.

(h) Delivery of Possession. Subject to the terms of applicable joint operating agreements, if any, the Related Agreements, and this Agreement, ExxonMobil will deliver possession of the Interests to Buyer as soon as practicable after the Closing Date.

8.05. Offset of Amounts Owed to ExxonMobil and Affiliates. Before Closing, ExxonMobil may review all outstanding accounts between Buyer and ExxonMobil and its Affiliates and include any undisputed amounts due to ExxonMobil or any of its Affiliates in the Closing Settlement Statement. Buyer will pay the undisputed amounts due to ExxonMobil or any of its Affiliates, if any, as a condition of Closing.

8.06. Conditions Precedent. The following are conditions precedent to ExxonMobil's obligation to close this transaction:

(a) Buyer's performance of its obligations under this Article 8 is a condition precedent to ExxonMobil's obligation to close this transaction; and

(b) (i) any applicable waiting period under the HSR Act or other applicable competition laws shall have expired or have been terminated; (ii) all applicable waiting and other time periods under other applicable foreign, federal, or state antitrust, competition or fair trade laws or applicable laws have expired, lapsed, or been terminated (as appropriate) and all regulatory clearances and consents in any relevant jurisdiction, and required to be obtained prior to Closing, have been obtained; in each case, in respect of the transaction covered by this Agreement; and

(c) Buyer shall have furnished to ExxonMobil all material consents and approvals under Section 7.03(b) (other than those governmental approvals typically obtained post-Closing or that ExxonMobil agrees may be obtained post-Closing), unless such consents or approvals have been waived under Section 7.03(c)(2) or the affected Interests have been removed pursuant to Section 7.03(c)(4).

The following are conditions precedent to Buyer's obligation to close this transaction:

(a) ExxonMobil's performance of its obligations under this Article 8 is a condition precedent to Buyer's obligation to close this transaction; and

(b) (i) any applicable waiting period under the HSR Act or other applicable competition laws shall have expired or have been terminated; (ii) all applicable waiting and other time periods under other applicable foreign, federal, or state antitrust, competition or fair trade laws or applicable laws have expired, lapsed, or been terminated (as appropriate); and (iii) all regulatory clearances and consents in any relevant jurisdiction, and required to be obtained prior to Closing, have been obtained; in each case, in respect of the transaction covered by this Agreement; and

(c) ExxonMobil shall have furnished to Buyer all material consents and approvals under Section 7.03(a), unless Buyer has agreed to waive such consents or approvals under Section 7.03(c)(2) or the affected Interests have been removed pursuant to Section 7.03(c)(4).

8.07. Buyer's Representation by Closing. By closing this transaction, Buyer will be deemed to represent to ExxonMobil that all Buyer's representations under this Agreement and the Additional Instruments are true as of the Closing Date.

8.08. Insurance.

(a) ExxonMobil and Buyer acknowledge that Exxon Mobil Corporation maintains a worldwide program of property and liability insurance coverage for itself and its Affiliates, including ExxonMobil. This program has been designed to achieve a co-coordinated risk management package for the entire ExxonMobil corporate group. The program consists principally of four types of policies:

(1) policies issued to Exxon Mobil Corporation or its predecessors;

(2) policies issued directly to Affiliates by ExxonMobil's wholly-owned insurance company, Ancon Insurance Company, Inc., (herein referred to as "ExxonMobil's Captive Insurer");

(3) policies issued to Affiliates by locally admitted insurers which are reinsured by ExxonMobil's Captive Insurer; and

(4) policies issued to Affiliates by locally admitted insurers which are self-insured by way of retrospective premiums paid by the relevant Affiliate.

All of the insurance policies through which the worldwide program of coverage is presently or has previously been provided by or to Exxon Mobil Corporation, its predecessors or Affiliates are herein referred to collectively as the "ExxonMobil Policies."

(b) It is understood and agreed by Buyer that from and after the Closing Date:

(1) No insurance coverage shall be provided under the ExxonMobil Policies to Buyer ; and

(2) Any and all policies insured or reinsured by ExxonMobil's Captive Insurer which, but for this provision, would have insured the transferred asset shall be deemed terminated, commuted and cancelled *ab initio*; and

(3) No Claims regarding any matter whatsoever, whether or not arising from events occurring prior to the Closing, shall be made by Buyer against or with respect to any of the ExxonMobil Policies regardless of their date of issuance.

If the Effective Time is before the Closing Date, the termination of insurance will be retroactive to the Effective Time.

(c) **BUYER SHALL INDEMNIFY AND DEFEND EXXONMOBIL, ITS PARENTS AND AFFILIATES AGAINST, AND SHALL HOLD THEM HARMLESS FROM, ANY CLAIM MADE AFTER THE CLOSING DATE AGAINST ANY OF THE EXXONMOBIL POLICIES BY BUYER OR ITS AFFILIATES OR ANY COMPANY OR PERSON CLAIMING ANY RIGHT TO COVERAGE UNDER THE EXXONMOBIL POLICIES, INCLUDING ALL COSTS AND EXPENSES (INCLUDING ATTORNEYS' FEES) RELATED THERETO. SUCH INDEMNITY SHALL COVER, WITHOUT LIMITATION, ANY CLAIM BY AN INSURER FOR REINSURANCE, RETROSPECTIVE PREMIUM PAYMENTS OR PROSPECTIVE PREMIUM INCREASES ATTRIBUTABLE TO ANY SUCH CLAIM.**

Notwithstanding any provision of this agreement to the contrary, Buyer's insurance policy(ies) shall: (1) cover ExxonMobil and its Affiliates as additional insureds for liabilities arising from or assumed under this Agreement; and (2) be primary as to all other policies (including any deductibles or self-insured retentions). It is further agreed that Buyer and its insurer(s) providing coverage shall waive all rights of subrogation and/or contribution against ExxonMobil and its Affiliates to the extent liabilities are assumed by the Buyer.

8.09. Right to Terminate. Notwithstanding anything herein to the contrary, in the event that Closing has not occurred on or before February 28, 2020 for reasons not within the control of ExxonMobil, ExxonMobil shall have a continuing right thereafter to terminate this Agreement by providing written notice of termination to Buyer. In the event of such termination, ExxonMobil shall refund the Performance Deposit, however, ExxonMobil's obligation to return the Performance Deposit shall be subject to Article 24. Notwithstanding anything herein to the contrary, in the event that Closing has not occurred on or before February 28, 2020 for reasons not within the control of Buyer, Buyer shall have a continuing right thereafter to terminate this Agreement by providing written notice of termination to ExxonMobil. In the event of such termination, ExxonMobil shall refund the Performance Deposit, however, ExxonMobil's obligation to return the Performance Deposit shall be subject to Article 24.

ARTICLE 9. POST-CLOSING OBLIGATIONS

9.01. Filing and Recording. ExxonMobil will decide which Party will file or record the conveyancing documents in the appropriate governmental records. The recording Party will provide either the original or photocopies of the filed or recorded document, including the recording data, as agreed by the Parties, to the non-recording Party. Buyer will reimburse ExxonMobil for the filing, recording, and other reasonable fees that ExxonMobil incurs if ExxonMobil files or records the documents.

9.02. Copies. Within sixty (60) days after the Closing Date, ExxonMobil will deliver to Buyer, at Buyer's cost and request, copies of data and records relating to the Interests and Property (including, but not limited to, geophysical data (subject to third party licensing obligations), well files, seismic data, field surveys, field tapes and notes, and reprocessed data, if available). ExxonMobil is not obligated to provide copies of any data or records that would not have been made available to Buyer under Section 5.01. Buyer must advise ExxonMobil before Closing which data and records that it wants to be copied. If Buyer requests geophysical data and if ExxonMobil is not restricted from releasing the data to Buyer, Buyer's execution of a licensing agreement satisfactory to ExxonMobil will be a condition of ExxonMobil's delivering the data to Buyer. For leases subject to the jurisdiction of the Bureau of Ocean Energy Management and/or Bureau of Safety and Environmental Enforcement, and to the extent requested by Buyer or as required by applicable law or regulation, ExxonMobil will sign and deliver to Buyer a list of the copies of data and records delivered to Buyer (with omissions noted and explained for records required under federal regulations, but which are not available). Buyer will sign the list and submit it to the Bureau of Ocean Energy Management and/or Bureau of Safety and Environmental Enforcement in accordance with applicable regulations. ExxonMobil retains the right to use and disclose any data and records provided to Buyer.

If originals or the last-remaining copies of any data or records are provided to Buyer, ExxonMobil may have access to them at reasonable times and upon reasonable notice during regular business hours for as long as any Interest is in effect after the Effective Time (or for 21 years in the case of a mineral fee or other non-leasehold interest or a longer period if required by law or governmental regulation). ExxonMobil may, during this period and at its expense, make copies of the data and records pursuant to a reasonable request. Without limiting the generality of the two preceding sentences, for as long as any Interest is in effect after the Effective time (or for 21 years in the case of a mineral fee or other non-leasehold interest or for a longer period if required by law or governmental regulation), Buyer may not destroy or give up possession of any original or last-remaining copy of the data or records without first offering ExxonMobil the opportunity, at ExxonMobil's expense, to obtain the original or a copy. After this period expires, Buyer must offer to deliver the data and records (or copies) to ExxonMobil, at ExxonMobil's expense, before giving up possession or destroying them.

9.03. Further Assurances. Buyer and ExxonMobil each will, from time to time after Closing and upon reasonable request, execute, acknowledge, and deliver in proper form any conveyance, assignment, transfer, or other instrument reasonably necessary to accomplish the purposes of this Agreement.

9.04. Post-Closing Third-Party Consents. If the Parties elect to close without all third-party consents and approvals pursuant to Article 7.03 (except for those governmental consents or clearances required to be obtained prior to Closing under Article 25), ExxonMobil and Buyer will proceed diligently after Closing to obtain them. If any third party (including any governmental or regulatory agency) having a right to approve or reject assignment of any Interest by ExxonMobil to Buyer in order for title to transfer does not approve the assignment, or if Buyer does not meet conditions imposed for approval of the assignment, after Buyer has made a good faith effort to obtain the approval or permits or to satisfy the conditions, then ExxonMobil may require reassignment of either (a) all the Interests, or (b) those Interests for which approval or consent was not received. The Interests and Property must be in the same condition on the reassignment date

as they were on the Closing Date, reasonable wear and tear excepted. Upon reassignment, ExxonMobil will refund to Buyer the Allocation for each reassigned Interest, without interest, but adjusted for operating expenses and revenue attributable to the period before reassignment. Buyer will be responsible for all amounts due under contracts, including the Related Agreements, as to any Interest that requires approval for assignment, from the Effective Time forward. This obligation will end only if an Interest is reassigned under this Section 9.04.

9.05. Reassignment. For reassignment of any Interest under this Agreement, Buyer will execute and deliver to ExxonMobil a reassignment by special warranty, in a form satisfactory to ExxonMobil and sufficient to place ExxonMobil in the same position it occupied before the assignment to Buyer. Buyer's release and discharge of ExxonMobil and its Associated Parties, its covenant not to sue ExxonMobil or its Associated Parties, and its obligations to indemnify, defend, and hold ExxonMobil and its Associated Parties harmless will apply to Interests that are reassigned for the period of Buyer's ownership, and the reassignment instrument will restate Buyer's obligations.

9.06. Buyer's Compliance. Buyer will comply with all rules, regulations, statutes, and laws applicable to Buyer's ownership or operation of the Interests or Property and with all Related Agreements, insofar as they concern or pertain to the Interests.

9.07. Property Sales Accounting Agreement. Buyer will perform all its obligations under the Property Sales Accounting Agreement, including payment of rentals, shut-in payments, and minimum royalties.

9.08. Plugging and Abandoning Wells; Remediation. Buyer recognizes, and will either perform or assure that performance is accomplished properly and in accordance with applicable law and the Related Agreements, all obligations to abandon, restore, and remediate the Interests and Property, whether arising before or after the Effective Time, including obligations, as applicable, to:

(a) obtain plugging exceptions in Operator's name for each Well with a current plugging exception, or permanently plug and abandon the Well;

(b) plug, abandon, and if necessary, re-abandon each Well;

(c) remove all equipment and facilities, including flowlines, pipelines, and platforms;

(d) close all pits; and

(e) restore the surface, subsurface, and offshore sites associated with the Interests or Property.

Buyer will pay all costs and expenses associated with the obligations assumed under this Section 9.08. Buyer shall obtain a performance bond as described in Section 8.04(f) to guarantee Buyer's obligations under this Section. Pursuant to 8.04(f), Buyer will deliver the required performance bond at execution of this Agreement.

ARTICLE 10. TAXES

10.01. Ad Valorem Taxes. Ad valorem taxes (including production-based ad valorem taxes), real property taxes, and similar obligations imposed on the Interests and Property according to their value ("Ad Valorem Taxes") with respect to the tax period in which the Effective Time occurs shall be apportioned as of the Effective Time between ExxonMobil and Buyer. The Parties will make settlement of all Ad Valorem Taxes by estimating the Ad Valorem Taxes to be due for the tax period in which the Effective Time occurs based on the Ad Valorem Taxes assessed and paid for the immediately prior tax period. Such settlement of taxes shall be part of the Closing Settlement Statement. Buyer will be responsible for all Ad Valorem Taxes and interest that are applied to the Interests retroactively after the Effective Time.

10.02. Production Taxes. All taxes (other than Ad Valorem Taxes and income taxes) imposed on or with respect to the production of Oil, gas, or other hydrocarbons or minerals, or the receipt of proceeds from their sale (including severance, production, and excise taxes) will be apportioned between the Parties as of the Effective Time. ExxonMobil will be responsible for paying or withholding all taxes that have accrued before the Effective Time or as otherwise provided in the Property Sales Accounting Agreement and for filing all statements, returns, and documents pertinent to them. Buyer will be responsible for paying or withholding all taxes that accrue or are applied retroactively after the Effective Time or as otherwise provided in the Property Sales Accounting Agreement; for filing all statements, returns, documents incident to them; and for obtaining reimbursements, if any, relating to those taxes.

10.03. Other Taxes. At Closing, ExxonMobil will collect, and Buyer will pay, all applicable state and local sales taxes, use taxes, gross receipts taxes, business license taxes, other taxes (except taxes imposed by reason of income to ExxonMobil), conveyance, transfer and recording fees, and real estate transfer stamps or taxes imposed on the transfer of the Interests pursuant to this Agreement. The taxes collected will be based on Buyer's Allocations, as adjusted under this Agreement. Buyer will pay all state and local taxes, including penalty and interest, if any, assessed after the Effective Time against either Party with respect to this transaction or, if paid by ExxonMobil, Buyer will promptly reimburse ExxonMobil for amounts paid.

10.04. Tax-Deferred Exchange. If applicable and if requested by a Party, each Party agrees to reasonably cooperate to structure the transaction as a like-kind exchange under Section 1031 of the Code of all or part of the Interests (a "***Like-Kind Exchange*** Transaction") including executing escrow instructions, documents, agreements or other instruments as reasonably requested by a Party. Each Party may assign its rights and obligations under this Agreement to its affiliate or a Qualified Intermediary (as that term is defined in Section 1.1031(k)-1(g)(4)(v) of the Treasury Regulations) and/or to an Exchange Accommodation Titleholder (as that term is defined in Rev. Proc. 2000-37) in connection with a Like-Kind Exchange Transaction.

However, ExxonMobil and Buyer acknowledge and agree that any assignment of this Agreement to an affiliate or a Qualified Intermediary or Exchange Accommodation Titleholder does not release either party from any of its respective liabilities and obligations to the other party under this Agreement. If a Like-Kind Exchange Transaction occurs, the parties recognize that IRS Form 8824, Like-Kind Exchanges, will be required to be filed, and each party consents to the filing of

such Form and will fully cooperate, to the extent, necessary, with the other party in filing such Form.

ARTICLE 11. OIL IN STORAGE, PROCEEDS, COSTS, EXPENSES, CLAIMS, AND DISBURSEMENTS

11.01. Oil in Storage.

(a) All Oil in storage at the Effective Time, including working inventory, belongs to ExxonMobil. Title to Oil in storage for both ExxonMobil-operated Interests and Interests operated by others will transfer to Buyer as of the Effective Time.

(b) ExxonMobil, at its sole option, may include as "Oil in storage" all Oil in the system downstream of the wellhead at the Effective Time, including Oil in stock tanks, wash tanks, heater treaters, flowlines, and pipelines. For ExxonMobil-operated Interests, at the Effective Time ExxonMobil will:

(1) at its sole option, either run or gauge the Oil in storage; and

(2) read and replace all gas meter charts.

If the Effective Time is after the Execution Date, Buyer may be present for these operations.

(c) ExxonMobil will use measured Oil inventories in the Closing Settlement Statement, if available or, if not available, then estimated Oil inventories. The estimates will be based on the average month-end inventories of the three most recent calendar months prior to the Effective Time. If there is a difference between the value of the estimated Oil in storage and the value of inventories run or gauged at the Effective Time, ExxonMobil may include the difference in the Final Settlement Statement.

(d) Oil inventories will be credited in the Closing Settlement Statement. The assessed value of the Oil in Storage will be priced at the price received for the most recent full month of production preceding the Effective Time.

11.02. Proceeds, Costs, and Expenses.

(a) Except as otherwise provided in this Agreement and without prejudice to the provisions of the Property Sales Accounting Agreement:

(1) ExxonMobil reserves all rights to proceeds, receipts, reimbursements, credits, and income attributable to the Interests and accruing before the Effective Time; and

(2) all proceeds, receipts, credits, income, and charges attributable to the Interests and accruing after the Effective Time will be Buyer's property and responsibility.

For accounts held in suspense or escrow at Closing, ExxonMobil will disburse funds to Buyer at Closing and Buyer shall assume the obligation to make payment of such amounts as they become due and payable following Closing.

(b) Except as otherwise provided in this Agreement and without prejudice to the provisions of the Property Sales Accounting Agreement, ExxonMobil will make all disbursements for:

(1) payment of charges and invoices for costs and expenses accruing before the Effective Time and attributable to the Interests; and

(2) payments necessary as the result of sales of production from the Interests occurring before the Effective Time (including disbursements out of proceeds held in suspense or escrow).

(c) Buyer will be responsible for all payments and disbursements after the Effective Time but if ExxonMobil makes any of these payments or disbursements (including rentals paid prior to the Effective time, but covering periods after the Effective Time), Buyer will reimburse ExxonMobil for the amounts paid. ExxonMobil will be responsible for all payments and disbursements before the Effective Time but if Buyer makes any of these payments or disbursements (including rentals paid after the Effective time, but covering periods before the Effective Time), ExxonMobil will reimburse Buyer for the amounts paid. All amounts due from one Party to the other under this Section 11.02 may be made by debits and credits in the Closing Settlement Statement and Final Settlement Statement.

11.03. Notice to Remitters of Proceeds. ExxonMobil will make reasonable efforts to notify all remitters of proceeds from the sale of production of this transaction. Except as otherwise provided in the Property Sales Accounting Agreement, ExxonMobil is responsible for obtaining from the remitters revenues accrued before the Effective Time, and Buyer is responsible for obtaining from the remitters revenues accruing after the Effective Time. The Parties will inform the remitters that this transaction has closed by letter-in-lieu-of-transfer order or other documents required by each remitter.

11.04. Reservation of Claims. ExxonMobil reserves all Claims and rights of any kind concerning the Interests or Property against third parties that accrue before the Effective Time (including those against overriding royalty owners, royalty owners, working-interest owners, and gas purchasers), whether discovered before or after Closing. Buyer reserves all Claims and rights of any kind concerning the Interests or Property against third parties that accrue after the Effective Time (including those against overriding royalty owners, royalty owners, working-interest owners, and gas purchasers), whether discovered before or after Closing.

ARTICLE 12. EXXONMOBIL-OPERATED INTERESTS

12.01. Operation by ExxonMobil. ExxonMobil will operate the ExxonMobil-operated Interests and Properties (i) from the Execution Date and until the later of: (1) the Closing Date, or (2) such time as the applicable operating agreement, plan of unitization or law requires, or (3) the

time specified in the Transition Services Agreement, subject always to the requirements of applicable operating agreements; (ii) in a manner consistent with its past practices; and (iii) will not, without Buyer's prior approval (which approval shall not be unreasonably withheld), enter into any single commitment for capital expenditure with respect to any of the ExxonMobil-operated Interests or Property that would be binding on Buyer after Closing and that would commit Buyer to spend more than five hundred thousand dollars ($500,000.00) on such Interest or Property, except for expenditures required or necessitated under the applicable operating agreements and emergency expenditures. Subject to the Transition Services Agreement, as soon as practicable thereafter, operations will be turned over to, and become the responsibility of, ExxonMobil's successor as Operator. Notwithstanding anything to the contrary in this Agreement but subject to the Transition Services Agreement, ExxonMobil may cancel its applicable regulatory permits at any time and for any reason after it ceases to operate an Interest, unless such permits are transferable to Buyer, in which case the Parties shall meet to discuss such permits and the potential transferee of the permits to Buyer. ExxonMobil will not sell, transfer, dispose or encumber any of the Interests or Properties (whether operated by ExxonMobil or not) without the prior written consent of Buyer, except for sales of hydrocarbons in the ordinary course of business.

12.02. Charges Paid by Buyer. For the period of operation by ExxonMobil after the Effective Time, subject to the approvals required under Section 12.01, Buyer will pay ExxonMobil as follows:

(a) Operation and Maintenance Expenses. Operation and maintenance expenses in accordance with upward adjustments to the Purchase Price as reflected in Section 8.04(c).

(b) Other Costs. Reimbursement for workover costs, plugging, abandoning, and re-abandoning costs, CO2 purchases, prepaid items (e.g., utility charges, rentals, deposits and any other prepays excluding taxes) prorated before and after the Effective Time, and other major costs incurred by ExxonMobil incidental to the operation, protection, and maintenance of the Interests and Property, on an actual-cost basis (but not duplicative of amounts reflected in Section 8.04(c). The only exception to Buyer's obligation for reimbursement under this Section 12.02(b) is for fifty percent (50%) of the costs incurred pursuant to ExxonMobil AFE No. XW.2019.73799.EXP and directly attributable to the workover of the Mobile Bay 827 No. 1 well (API No. 608154003000). ExxonMobil will be responsible for the remaining fifty percent (50%) of such costs.

(c) Overhead. Overhead at a rate equal to $180,000.00 per month pro rata.

These charges will be included in the Closing Settlement Statement or Final Settlement Statement, as applicable.

12.03. Risk of Loss. Unless this Agreement is terminated as to an Interest, the risk of loss for damage to or destruction of the ExxonMobil-operated Interests and Property associated with that Interest will pass from ExxonMobil to Buyer as of the Effective Time, **EVEN IF SUCH DAMAGE OR DESTRUCTION IS CAUSED IN WHOLE OR IN PART BY THE GROSS, SOLE, JOINT, CONCURRENT, ACTIVE OR PASSIVE NEGLIGENCE OF EXXONMOBIL OR ANY OF ITS ASSOCIATED PARTIES OR ANY**

THIRD PARTY AND REGARDLESS OF WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY OTHER CONTRACT OR ANY STATUTE, RULE OR THEORY OF LAW INCLUDING THEORIES OF STRICT LIABILITY, and any such damage or destruction will not be cause for Buyer to delay Closing or terminate this Agreement.

12.04. Selection of Operator. ExxonMobil may elect to poll the parties to applicable joint operating agreements or plans of unitization before Closing to select a successor Operator. The poll may stipulate that ExxonMobil will not resign as Operator unless Closing occurs. ExxonMobil may resign as Operator under applicable regulations if Buyer does not diligently pursue its designation as Operator of the Interests that it will operate. If ExxonMobil does not poll, then it will be Buyer's responsibility to do so immediately after Closing. Buyer's selection as Operator, whether under a joint operating or similar agreement or pursuant to applicable regulations, is not a condition of Buyer's performance under this Agreement.

12.05. Removal of Signs. ExxonMobil may either remove its name and signs from the ExxonMobil-operated Interests and Property or require Buyer to do so for those Interests that it will operate. Once Buyer has become Operator, Buyer must:

(a) remove any remaining signs and references to ExxonMobil from the Property or Interests promptly, but no later than the time required by applicable regulations or forty-five (45) days after ExxonMobil ceases to be Operator, whichever occurs first;

(b) install signs complying with applicable governmental regulations, including signs showing Buyer as Operator of the Interests it operates; and

(c) notify ExxonMobil of the removal of signs and references to ExxonMobil and installation of new signs.

ExxonMobil reserves a right of access to the Interests and Property after it ceases to be Operator to remove its signs and name from all Wells, facilities, and Property, or to confirm that Buyer has done so for the Interests operated by Buyer. If ExxonMobil removes signs because Buyer has not done so, ExxonMobil will charge its costs to Buyer, and Buyer will pay the invoice within 15 days of receipt.

ARTICLE 13. INTERESTS OPERATED BY OTHERS

13.01. Charges Paid by Buyer. Buyer will reimburse ExxonMobil for charges made by the Operator of Interests not operated by ExxonMobil after the Effective Time and paid by ExxonMobil and will pay overhead to ExxonMobil at a rate equal $5,000 per month pro rata.

13.02. Risk of Loss. Unless this Agreement is terminated as to an Interest, the risk of loss for damage to or destruction of each Interest operated by others and the Property associated with that Interest will pass from ExxonMobil to Buyer as of the Effective Time, **EVEN IF SUCH DAMAGE OR DESTRUCTION IS CAUSED IN WHOLE OR IN PART BY THE GROSS, SOLE, JOINT, CONCURRENT, ACTIVE OR PASSIVE NEGLIGENCE OF EXXONMOBIL OR ANY OF ITS ASSOCIATED PARTIES OR ANY THIRD PARTY AND REGARDLESS OF WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY OTHER CONTRACT OR ANY STATUTE, RULE OR THEORY OF LAW INCLUDING THEORIES OF**

STRICT LIABILITY. Any such damage or destruction will not be cause for Buyer to delay Closing or terminate this Agreement.

ARTICLE 14. PREFERENTIAL RIGHT TO PURCHASE RAW MAKE

14.01. Preferential Right to Purchase Or Transport And Fractionate Option Raw Make. ExxonMobil reserves, for a period of twenty-one (21) years from the Closing Date, the preferential right to enter into a contract to purchase or transport and fractionate the Option Raw Make subject to the following:

(a) Definitions.

(1) "Raw Make" shall mean a mixture of liquid hydrocarbons consisting predominantly of ethane (C2), propane (C3), isobutane (IC4), normal butane (NC4), and pentanes plus (C5+) which are condensed from, absorbed from, or separated from natural gas at the Mobile Bay Gas Plants and which meets the specifications of the Raw Make Pipelines.

(2) "Mobile Bay Gas Plants" shall mean the natural gas processing plants located in Mobile Bay, Alabama, which, as of the date of this Agreement, are operated by Williams Midstream and DCP Midstream for the purpose of extracting Raw Make.

(3) "Option Raw Make" shall mean Raw Make processed at the Mobile Bay Gas Plants from natural gas produced from or allocated to the lands, leases, wells or production being sold or traded hereunder that may be capable of reasonable commercial delivery to the Raw Make Pipelines.

(4) "Raw Make Pipelines" shall mean Tri-States NGL Pipeline, LLC or any other pipeline capable of receiving and transporting Raw Make from the Mobile Bay Gas Plants where Option Raw Make is extracted.

(5) "Model Raw Make Agreement" provided upon request.

(b) ExxonMobil's right will be subject to any preferential rights to purchase Option Raw Make previously granted under Related Agreements.

(c) Third Party Offers and Notice Requirements.

(1) If Buyer elects to produce Option Raw Make and receives a bona fide third-party offer acceptable to Buyer for the purchase or transportation and fractionation of all or part of such Option Raw Make, Buyer shall promptly furnish ExxonMobil with written notice (unless ExxonMobil has waived the applicable preferential purchase right in writing) of such offer, with full information about the offer,

including the name of the prospective purchaser or transporter and fractionater (which must be ready, willing and able to purchase or transport and fractionate the Option Raw Make according to the terms of its offer), the full consideration offered for the purchase or transport and fractionate, and all other terms of the offer.

(2) ExxonMobil (or any one of its Affiliates or subsidiaries) shall have fifteen (15) Business Days after receipt of such notice to provide written notice to Buyer of its election to enter into an agreement with Buyer to purchase or transport and fractionate such Option Raw Make on the same terms and conditions as were contained in the third party offer; provided however, that unless material differences exist between the third-party offer and the terms and provisions contained in the Model Raw Make Agreement, as reasonably determined by Buyer, Buyer agrees to enter into a sale or transport and fractionate agreement with ExxonMobil (or any Affiliate or subsidiary of ExxonMobil) under the terms and provisions contained in the Model Raw Make Agreement.

(3) If ExxonMobil (or any Affiliate or subsidiary of ExxonMobil) should fail to notify Buyer within such fifteen (15) Business Day period of its election to exercise its preferential rights hereunder, then Buyer shall be free to enter into an agreement with such prospective purchaser to sell or transport and fractionate Option Raw Make on the terms contained in its notice to ExxonMobil.

(d) ExxonMobil will not have any obligation to purchase or transport and fractionate Option Raw Make or furnish a market for all or any part of the Option Raw Make.

(e) Upon not less than thirty (30) days prior written notice to Buyer ExxonMobil may assign or otherwise transfer, in whole or in part, its preferential rights under this Section 14.01 to any subsidiary or Affiliate of ExxonMobil. Upon assignment or transfer, the assignee or transferee will have the same rights as ExxonMobil under this Section 14.01.

(f) The addresses for notice under this Section 14.01 are:

ExxonMobil:

Exxon Mobil Corporation
22777 Springwoods Village Parkway
Spring, TX 77389
Attention: NGL Supply & Logistics Manager

Buyer:

W&T Offshore, Inc.
Nine Greenway Plaza, Suite 300
Houston, TX 77046
Attention: Director,
Market Development

The provisions of this Section 14.01 will be incorporated into the Assignment and Bill of Sale.

ARTICLE 15. INTENTIONALLY LEFT BLANK

ARTICLE 16. RELEASE, DISCHARGE, AND COVENANT NOT TO SUE; OBLIGATIONS TO INDEMNIFY, DEFEND, AND HOLD HARMLESS; LIMITATION OF DAMAGES

16.01. Buyer's Release and Discharge of ExxonMobil and its Associated Parties. Buyer releases and discharges ExxonMobil and its Associated Parties from each Claim and Liability relating to the Interests, Property, or this transaction, regardless of when or how the Claim or Liability arose or arises or whether the Claim or Liability is foreseeable or unforeseeable. **BUYER'S RELEASE AND DISCHARGE OF EXXONMOBIL AND ITS ASSOCIATED PARTIES INCLUDES CLAIMS AND LIABILITIES CAUSED IN WHOLE OR IN PART BY THE GROSS, SOLE, JOINT, CONCURRENT, ACTIVE OR PASSIVE NEGLIGENCE OF EXXONMOBIL OR ANY OF ITS ASSOCIATED PARTIES OR ANY THIRD PARTY AND APPLY REGARDLESS OF WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY OTHER CONTRACT OR ANY STATUTE, RULE OR THEORY OF LAW INCLUDING THEORIES OF STRICT LIABILITY.** The only exception to Buyer's release and discharge of ExxonMobil and its Associated Parties is stated in Sections 16.03(b), and 16.04(e), and the release and discharge are binding on Buyer and its successors and assigns.

16.02. Buyer's Covenant Not to Sue ExxonMobil or its Associated Parties. Buyer covenants not to sue ExxonMobil or its Associated Parties with regard to any Claim or Liability relating to the Interests, Property, or this transaction, regardless of when or how the Claim or Liability arose or arises or whether the Claim or Liability is foreseeable or unforeseeable. **BUYER'S COVENANT NOT TO SUE EXXONMOBIL OR ITS ASSOCIATED PARTIES INCLUDES CLAIMS AND LIABILITIES CAUSED IN WHOLE OR IN PART BY THE GROSS, SOLE, JOINT, CONCURRENT, ACTIVE OR PASSIVE NEGLIGENCE OF EXXONMOBIL OR ANY OF ITS ASSOCIATED PARTIES OR ANY THIRD PARTY AND APPLIES REGARDLESS OF WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY OTHER CONTRACT OR ANY STATUTE, RULE OR THEORY OF LAW INCLUDING THEORIES OF STRICT LIABILITY.** The only exception to Buyer's covenant not to sue ExxonMobil or its Associated Parties is stated in Section 16.04 (e), and the covenant is binding on Buyer and its successors and assigns.

16.03. Obligations to Indemnify, Defend, and Hold Harmless; Limitation of Damages.

(a) Buyer will indemnify, defend, and hold ExxonMobil and its Associated Parties harmless from each Claim and Liability relating to the Interests, Property, or this transaction, regardless of when or how the Claim or Liability arose or arises or whether the Claim or Liability is foreseeable or unforeseeable. **BUYER'S OBLIGATIONS TO INDEMNIFY, DEFEND, AND HOLD EXXONMOBIL AND ITS ASSOCIATED PARTIES HARMLESS INCLUDE CLAIMS AND LIABILITIES CAUSED IN WHOLE OR IN PART BY THE GROSS, SOLE, JOINT, CONCURRENT, ACTIVE OR PASSIVE NEGLIGENCE OF EXXONMOBIL OR ANY OF ITS ASSOCIATED PARTIES OR ANY THIRD PARTY AND APPLY REGARDLESS OF WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY OTHER CONTRACT OR ANY STATUTE, RULE OR THEORY OF LAW INCLUDING THEORIES OF STRICT LIABILITY.** The only exceptions to Buyer's obligations to indemnify, defend, and hold ExxonMobil and its Associated

Parties harmless are stated in Sections 16.03(b), 16.04(c) and 16.04(e), and the obligations are binding on Buyer and its successors and assigns.

(b) ExxonMobil will release, discharge, indemnify, defend, and hold Buyer and its Associated Parties harmless from any breaches of the covenants, representations and warranties of ExxonMobil in Section 19.05. **EXXONMOBIL'S OBLIGATIONS TO INDEMNIFY, DEFEND, AND HOLD BUYER AND ITS ASSOCIATED PARTIES HARMLESS INCLUDE CLAIMS AND LIABILITIES CAUSED IN WHOLE OR IN PART BY THE SOLE, JOINT, CONCURRENT, ACTIVE OR PASSIVE NEGLIGENCE OF BUYER OR ANY OF ITS ASSOCIATED PARTIES OR ANY THIRD PARTY AND APPLY REGARDLESS OF WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY OTHER CONTRACT OR ANY STATUTE, RULE OR THEORY OF LAW INCLUDING THEORIES OF STRICT LIABILITY.** Notwithstanding the foregoing, ExxonMobil shall not be required to indemnify, defend or hold harmless Buyer or its Associated Parties: (i) with respect to any Claim or Liability unless Buyer has provided ExxonMobil with a Claim notice specifying the particulars of such Claim within twelve (12) months after the Closing Date; and (ii) for any individual Claim or Liability of less than TWO HUNDRED FIFTY THOUSAND DOLLARS ($250,000.00); and (iii) unless, and then only to the extent that, the aggregate amount of Claims and Liabilities pursuant to this Section 16.03(b) exceeds two percent (2%) of the Purchase Price; and (iv) for any amount of Claims and Liabilities that are, singularly or in the aggregate, in excess of twenty percent (20%) of the Purchase Price.

(c) **EXCEPT FOR THIRD-PARTY CLAIMS AND LIABILITIES FOR WHICH A PARTY HAS AN INDEMNIFICATION OBLIGATION TO ANOTHER PARTY UNDER THIS SECTION 16.03, NO PARTY SHALL BE LIABLE TO ANOTHER PARTY UNDER THIS AGREEMENT FOR INDIRECT DAMAGES, CONSEQUENTIAL LOSS, PUNITIVE DAMAGES, EXEMPLARY DAMAGES OR SPECIAL DAMAGES, AND EACH PARTY HEREBY WAIVES ITS RIGHT TO ASSERT SUCH LOSSES OR DAMAGES, HOWSOEVER CAUSED AND REGARDLESS OF FAULT, INCLUDING THE NEGLIGENCE, GROSS NEGLIGENCE OR WILFULL MISCONDUCT OF A PARTY.**

16.04. Buyer's Obligations.

(a) In each instance of Buyer's obligations to release, discharge, indemnify, defend, and hold ExxonMobil and its Associated Parties harmless and its covenant not to sue ExxonMobil or its Associated Parties, the Claims and Liabilities subject to the obligations include the following:

(1) the ownership of the Interests by ExxonMobil, their operation by ExxonMobil or its Associated Parties, and the acts or omissions of ExxonMobil or its Associated Parties in connection with the Interests or the Related Agreements;

(2) the ownership of the Interests by Buyer, their operation by Buyer or its Associated Parties, and the acts or omissions of Buyer or its Associated Parties in connection with the Interests or under this Agreement or the Related Agreements; and

(3) the acts or omissions of third parties relating to the Interests.

(b) Buyer's obligations under this Agreement to release, discharge, indemnify, defend, and hold ExxonMobil and its Associated Parties harmless and its covenant not to sue ExxonMobil or its Associated Parties include Claims and Liabilities arising in any manner from the following:

(1) Buyer's Allocations;

(2) preferential and similar rights held by third parties to purchase any portion of the Interests;

(3) the review, inspection, and assessment of the Interests and Property by Buyer and its Associated Parties;

(4) an error in describing the Interests or an error in the conveyancing instruments;

(5) rights and obligations of the parties or third parties under the Related Agreements;

(6) closing without a third party consent or approval;

(7) failure by third parties to approve or consent to any aspect of this transaction after Closing;

(8) obligations to plug and abandon Wells and remediate the Interests and Property;

(9) payment of Real Property Taxes or other taxes applicable to the Interests and Property;

(10) payments or disbursements paid or payable by ExxonMobil or Buyer to third parties;

(11) a physical or environmental condition relating to the Interests and Property, including Claims and Liabilities under the Environmental Laws, or failure to comply with the Environmental Laws;

(12) remediation activities, including damages incurred by Buyer or its Associated Parties during or arising from remediation activities; and

(13) lawsuits filed before the Effective Time, but amended after the Effective Time to include the Interests or Property or ExxonMobil's ownership of or activities regarding the Interests or Property.

(c) Buyer's obligations to release, discharge, indemnify, defend, and hold ExxonMobil and its Associated Parties harmless do not apply, however, to Claims or Liabilities that result from a judgment rendered or settlement reached in a lawsuit filed before the Effective Time, but only to the extent that acts or omissions that gave rise to the cause of action are attributable to the conduct or operation or ownership of ExxonMobil or its Associated Parties before the Effective Time.

(d) The Parties recognize that certain lawsuits may have been filed before the Effective Time, but concern activities continuing after the Effective Time, so that after Closing Buyer may be a proper party to the lawsuit. For these lawsuits, Buyer's obligations to release, discharge, indemnify, defend, and hold ExxonMobil and its Associated Parties harmless will apply to activities occurring after the Effective Time. ExxonMobil will continue to defend its own interests and provide principal counsel, all at its own cost and expense, in an action under this paragraph for which it remains a party after the Effective Time.

(e) Buyer's release, discharge, indemnify, defend, and hold harmless ExxonMobil and its Associated Parties and its covenant not to sue do not include Claims that Buyer may enforce against contractors and subcontractors for work regarding the Interests and the Properties. Notwithstanding anything in this Agreement to the contrary, Buyer's release and discharge of ExxonMobil and its Associated Parties and its obligation to indemnify, defend and hold ExxonMobil and its Associated Parties harmless under this Agreement and its covenant not to sue ExxonMobil and its Associated Parties does not include Claims that ExxonMobil breached this Agreement. Any such Claims will be resolved in accordance with Article 17.

16.05. Buyer's Duty to Defend. Buyer acknowledges that its obligations to indemnify, defend, and hold ExxonMobil and its Associated Parties harmless under this Agreement include obligations to pay the attorneys' fees and court and other costs incurred by ExxonMobil and its Associated Parties in defending all Claims. As to each Claim and Liability, ExxonMobil, at its sole option, may elect to:

(a) manage its own defense, in which event Buyer will reimburse ExxonMobil and its Associated Parties for all attorneys' fees and court and other costs reasonably incurred in defending a claim, upon delivery to Buyer of invoices for these fees and costs; or

(b) tender its defense as to any Claim to Buyer, in which event Buyer will be responsible for all aspects of defending the Claim at issue and resulting Liabilities.

16.06. Buyer's Waiver of Consumer Rights Under the Texas Deceptive Trade Practices Consumer Protection Act and Other Consumer Protection Laws. **AS PARTIAL CONSIDERATION TO EXXONMOBIL TO ENTER INTO THIS AGREEMENT, TO THE EXTENT THAT THE TEXAS**

DECEPTIVE TRADE PRACTICES CONSUMER PROTECTION ACT IS APPLICABLE TO THIS TRANSACTION, BUYER CAN AND DOES EXPRESSLY WAIVE ITS RIGHTS UNDER THE TEXAS DECEPTIVE TRADE PRACTICES CONSUMER PROTECTION ACT, SECTIONS 17.41 THROUGH 17.63, TEXAS BUSINESS AND COMMERCE CODE, A LAW THAT GIVES CONSUMERS SPECIAL RIGHTS AND PROTECTIONS. AFTER CONSULTATION WITH AN ATTORNEY OF ITS OWN SELECTION, BUYER VOLUNTARILY CONSENTS TO THIS WAIVER. IN ADDITION, BUYER WAIVES ITS RIGHTS UNDER ALL OTHER CONSUMER PROTECTION LAWS IN OTHER STATES APPLICABLE TO THIS TRANSACTION THAT MAY BE WAIVED BY THE PARTIES.

16.07. Retroactive Effect. Buyer acknowledges that its obligations to release, discharge, defend, and hold ExxonMobil and its Associated Parties harmless and its covenant not to sue ExxonMobil or its Associated Parties apply to matters occurring or arising before the Execution Date to the extent provided in this Agreement.

16.08. Inducement to ExxonMobil. **BUYER ACKNOWLEDGES THAT IT EVALUATED ITS OBLIGATIONS UNDER THIS ARTICLE 16 BEFORE IT DETERMINED AND SUBMITTED ITS BID FOR THE INTERESTS AND THAT ITS ASSUMPTION OF THESE OBLIGATIONS IS A MATERIAL INDUCEMENT TO EXXONMOBIL TO ENTER INTO THIS AGREEMENT WITH, AND CLOSE THE SALE TO, BUYER.**

ARTICLE 17. ALTERNATE DISPUTE RESOLUTION AND ARBITRATION

17.01. General.

(a) This Article 17 applies to any dispute between the Parties, arising at any time, that is not subject to Buyer's release and discharge of ExxonMobil and its Associated Parties or Buyer's covenant not to sue ExxonMobil or its Associated Parties or is not specifically excluded under this Article 17. Whether a dispute is subject to Buyer's release, discharge, or covenant not to sue or to this Article (or is excluded from this Article by its terms), and whether there is a contract between the Parties, are issues that will be resolved under the alternate dispute resolution and arbitration provisions of this Article 17.

(b) As to the disputes subject to this Article 17, any Claim or controversy of whatever nature, including an action in tort or contract or a statutory action ("Disputed Claim"), or the arbitrability of a Disputed Claim, will be resolved under the terms, conditions, and procedures of set forth in this Article 17 and will be binding on both Parties and their respective successors and assigns. Neither Party may prosecute or commence any suit or action against the other Party relating to any matters that are subject to this Article 17, except as provided in this Article 17.

(c) ExxonMobil will determine, at its sole option, whether a Claim filed by a third party against Buyer or ExxonMobil will be subject to this Article. If Buyer has notified ExxonMobil before Closing of a Disputed Claim by Buyer before Closing and the Disputed Claim is not resolved before Closing, the Disputed Claim will not be subject to this Article unless agreed by the Parties.

17.02. Negotiations. The Parties agree to attempt to resolve any dispute arising out of or relating to this Agreement through negotiation. Within thirty (30) days after one Party gives the other Party written notice describing the dispute and requesting negotiations, representatives of the Parties with authority to resolve the dispute shall meet at a mutually agreed upon location to attempt to resolve the dispute. Negotiations shall continue until the Parties have resolved the dispute or until one of the Parties gives written notice that it will no longer continue to negotiate. If for any reason, the Parties' representatives fail to meet within the thirty (30) day deadline or if a Party gives written notice that it is no longer willing to continue negotiations, either Party may commence binding arbitration of the dispute pursuant to Section 17.03.

17.03 Arbitration. Any dispute arising out of or relating to this Agreement that the Parties fail to resolve by negotiation as set forth in Section 17.02 shall be resolved by arbitration before three arbitrators pursuant to the CPR Institute for Dispute Resolution Rules for Non-Administered Arbitration as modified herein. Each Party shall appoint one arbitrator as provided in CPR Rules 3.3 and 3.5, and the two arbitrators so appointed shall appoint the third, who shall chair the tribunal, selected as provided in CPR Rule 5.2. The place of arbitration shall be Houston, Texas. The arbitrators shall apply the substantive law of Texas to the merits of the dispute, except that the arbitrators shall not apply any choice of law rules that would call for the application of the substantive law of any other jurisdiction. The Federal Arbitration Act shall apply to the arbitration. The arbitrators' award shall be final and binding on the Parties. Judgment on the award may be entered in any court of competent jurisdiction.

17.04. Notice. The addresses for notice under this Article 17 are:

ExxonMobil:	Buyer:
ExxonMobil Upstream Business Development Company	W&T Offshore, Inc.
22777 Springwoods Village Parkway	Nine Greenway Plaza
Spring, TX 77389	Houston, TX 77046
Attention: Divestments Manager	Attention: Land Manager

ARTICLE 18. ENVIRONMENTAL MATTERS

18.01. Buyer's Acknowledgment Concerning Possible Contamination of the Interests and Property. Buyer is aware that the Interests and Property have been used for exploration, development, and production of oil and gas and that there may be petroleum, produced water, wastes, or other materials located on or under the Property or associated with the Interests. Equipment and sites included in the Interests or Property may contain asbestos, PCBs, hazardous substances, TSCA / RCRA regulated substances and / or NORM. NORM may affix or attach itself to the inside of Wells, materials, and equipment as scale, or in other forms; the Wells, materials, and equipment located on the Property or included in the Interests may contain NORM and other wastes or hazardous substances; and NORM-containing material and other wastes or hazardous substances may have been buried, come in contact with the soil, or otherwise been disposed of on the Property. Special procedures may be required for the remediation, removal, transportation, or disposal of wastes, asbestos, PCBs / TCSA / RCRA regulated substance, hazardous substances, and NORM from the Interests and the Property.

BUYER WILL ASSUME ALL LIABILITY FOR THE ASSESSMENT, REMEDIATION, REMOVAL, TRANSPORTATION, AND DISPOSAL OF WASTES, ASBESTOS, PCB'S, HAZARDOUS SUBSTANCES, TSCA / RCRA REGULATED SUBSTANCES AND NORM FROM THE INTERESTS AND PROPERTY AND ASSOCIATED ACTIVITIES AND WILL CONDUCT THESE ACTIVITIES IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS, INCLUDING ENVIRONMENTAL LAWS.

18.02. Adverse Environmental Conditions.

(a) Buyer will have until twenty (20) days after the Execution Date to notify ExxonMobil of any material adverse environmental condition of the Interests or Property that Buyer finds unacceptable and provide evidence of the condition to ExxonMobil. Buyer's notice shall include a report that includes analytical data, proposed remediation criteria, remediation methods, and costs reasonably estimated to remediate. An environmental condition is a material adverse environmental condition ("Condition") only if all the following criteria are met:

(1) the environmental condition is required to be remediated on the Execution Date under the Environmental Laws in effect on the Execution Date; and

(2) the total of the cost to remediate all environmental conditions identified by Buyer to levels required by the Environmental Laws in effect on the Execution Date is reasonably estimated to be more than two percent (2%) of the Base Purchase Price; and

(3) the environmental condition was not disclosed to Buyer before the Execution Date.

(b) ExxonMobil will have thirty (30) days after receipt of Buyer's notice under the preceding paragraph, or until five (5) days before the Closing Date if it determines that an adverse environmental condition (whether material or not) may exist with respect to an Interest or Property, to elect any of the following:

(1) adjust the Base Purchase Price based on an Allocation for an Interest by a mutually acceptable amount reflecting ExxonMobil's proportionate share, based on its working interest, of the cost reasonably estimated to remediate a Condition affecting the Interest;

(2) remove the affected Interest from this Agreement and adjust the Base Purchase Price by the Allocation for the affected Interest;

(3) remediate, or agree to remediate, the Condition, as provided below in 18.03 herein;

(4) terminate this Agreement and return the Performance Deposit to Buyer; or

(5) negotiate an alternative agreement that is acceptable to both Parties.

ExxonMobil may delay Closing until the end of this thirty-day period, which delay will be in addition to and under the same terms as ExxonMobil's right to delay Closing under Section 8.03.

(c) If ExxonMobil and Buyer agree to adjust the Base Purchase Price based on an Allocation because of a Condition, the amount of the adjustment will be the cost reasonably estimated to remediate the Condition, but only to the level required by the Environmental Laws in effect on the Execution Date. ExxonMobil may require Buyer to remit the full Allocation at Closing, without adjustment for the Condition, but if it does so, it will pay the amount of the adjustment to Buyer when the remediation is complete under applicable law within a defined timeframe agreed to by the Parties. If the cost to remediate exceeds the amount of the adjustment, Buyer will pay the additional costs to remediate the Condition as required by applicable law.

18.03. Remediation. If ExxonMobil agrees with Buyer to remediate a Condition, the following will govern the remediation:

(a) ExxonMobil will be responsible for all negotiations and contacts with federal, state, and local agencies and authorities with regard to the Condition. Buyer may not make any independent contacts with any agency, authority, or other third party with respect to the Condition and will keep all information regarding the Condition confidential, except in each instance to the extent required by applicable law.

(b) ExxonMobil will remediate the Condition to the level required by the Environmental Laws in effect on the Execution Date.

(c) Buyer will grant access to the Interests and entry on the Property after Closing, at no cost to ExxonMobil, its Associated Parties, and third parties conducting assessments or remediation, to the extent and as long as reasonably necessary to conduct and complete the assessment or remediation work, to remove equipment and facilities, and to perform any other activities reasonably necessary in connection with assessment or remediation.

(d) Buyer will use reasonable efforts not to interfere with ExxonMobil's ingress and egress or assessment or remediation activities. ExxonMobil will make reasonable efforts to perform the work so as to minimize disruption to Buyer's business activities and to the Interests and the Property. In addition Buyer will provide the relevant regulatory agency any land use restrictions that may be necessary for ExxonMobil to remediate the Condition to the level required by the Environmental Laws in effect on the Execution Date.

(e) ExxonMobil will continue remediation of the Condition until the first of the following occurs: the appropriate governmental authorities provide written notice to ExxonMobil or Buyer that no further remediation of the Condition is required; or ExxonMobil has reasonably determined that the Condition has been remediated to the level required by the Environmental Laws or as agreed by the Parties.

Upon such occurrence, ExxonMobil will notify Buyer that remediation of the Condition is complete and provide a copy of the government notification described above, if applicable. Upon delivery of ExxonMobil's notice, ExxonMobil will be released from all liability and have no further obligations under any provisions of this Agreement in connection with the Condition covered by the notice to the same extent as described in Article 16.

(f) Until ExxonMobil completes remediation of a Condition, ExxonMobil and Buyer will each notify the other of any pending or threatened Claim, action, or proceeding by any authority or private party that relates to or would affect the environmental condition, the assessment, or the remediation of the Interests or Property.

(g) After delivery of possession or Closing (whichever occurs first) and before ExxonMobil has completed remediation of a Condition, if a leak, spill, or discharge of any material or substance ("Occurrence") occurs on the Property or Interests, or any part of them, Buyer will promptly notify ExxonMobil, notify appropriate regulatory authorities, and act promptly to minimize the effects of the Occurrence. If a spill, leak or discharge occurs and ExxonMobil determines that it may affect the area where ExxonMobil is conducting remediation or assessment, Buyer will hire a consultant (who must be acceptable to ExxonMobil) to assess the effect of the Occurrence on the environmental condition of the Property, Interest, and ExxonMobil's remediation work and the cost of the additional work required as the result of the Occurrence. Unless the Occurrence was caused solely by ExxonMobil, Buyer will be responsible for the incremental cost of remediating the impact of the Occurrence. If ExxonMobil elects to expand the remediation to incorporate the remediation of the Occurrence, Buyer will promptly pay its share of costs and expenses to ExxonMobil as the work is performed, within thirty (30) days of receipt of invoices for the work (with supporting documentation). Payments not made timely will bear interest at a rate of 5% per annum or the maximum lawful rate, whichever is less, compounded daily from the date of Buyer's receipt of the invoice until paid.

If the cost of the additional work equals or exceeds the cost which would have been incurred but for the Occurrence, ExxonMobil may elect to pay Buyer the cost that would have been incurred by ExxonMobil to complete the remediation but for the Occurrence. As consideration for this payment, Buyer will accept the Condition and environmental Condition of the Property and Interests as they exist on the date of the payment, assume full responsibility for remediating the Property and Interests and related off site contamination in accordance with this Agreement, and agree to release, not to sue, indemnify, hold harmless, and defend ExxonMobil and its Associated Parties as to Claims and Liabilities arising from the Occurrence to the same extent as described in Article 16.

(h) If ExxonMobil undertakes remediation as to any Interest in which ExxonMobil's ownership was less than 100%, Buyer will bill the other working interest owners for their share of the remediation expenses (following receipt by Buyer of appropriate documentation). Regardless of whether Buyer recoups any amount from the other

working interest owners, Buyer will refund to ExxonMobil, within sixty (60) days of each ExxonMobil invoice, with documentation, any amounts expended by ExxonMobil over the amount formerly attributable to ExxonMobil's working interest share.

(i) If ExxonMobil will assess or remediate the Interests or Property after Closing, the Assignment and Bill of Sale or other recordable instrument will restate the rights and obligations of this Section 18.03.

18.04. Disposal of Materials, Substances, and Wastes; Compliance with Law. Buyer will store, handle, transport, and dispose of or discharge all materials, substances, and wastes from the Interests and Property (including produced water, drilling fluids, NORM, asbestos, PCBs, and other wastes), whether present before or after the Effective Time, in accordance with applicable local, state, and federal laws and regulations. Buyer will identify themselves as the generator of the waste on all required regulatory documents and / or manifests and be responsible for any reporting requirements. Buyer will keep records of the types, amounts, and location of materials, substances, and wastes that are stored, transported, handled, discharged, released, or disposed of onsite and offsite. When any lease terminates, an interest in which has been assigned under this Agreement, Buyer will undertake additional testing, assessment, closure, reporting, or remedial action with respect to the Interests or Property affected by the termination as is necessary to satisfy all local, state, or federal requirements in effect at that time and necessary to restore the Property or Interests.

ARTICLE 19. BUYER'S AND EXXONMOBIL'S REPRESENTATIONS

19.01. Representations Not Exclusive. Buyer's representations under this Article are in addition to its other representations under this Agreement and the Additional Instruments.

19.02. Securities Laws.

(a) Buyer acknowledges that the solicitation of an offer for and the sale of the Interests by ExxonMobil has not been registered under any securities laws.

(b) Buyer intends to acquire the Interests for its own benefit and account and is not acquiring the Interests with the intent of distributing fractional undivided interests in them or otherwise selling them in a manner that would be subject to regulation by federal or state securities laws. If Buyer sells, transfers, or otherwise disposes of the Interests or fractional undivided interests in them in the future, it will do so in compliance with applicable federal and state laws.

(c) Buyer represents that at no time has it been presented with or solicited by or through any public promotion or other form of advertising in connection with this transaction.

19.03. Basis of Buyer's Decision. Buyer represents that:

(a) subject to its rights to conduct an Environmental Assessment under Section 5.03, it has reviewed and investigated the Interests and Property to its satisfaction in order to enter into this Agreement;

(b) subject to its rights to conduct an Environmental Assessment under Section 5.03, it has evaluated the Interests and Property to its satisfaction and has made an informed decision, as a prudent and knowledgeable purchaser, to acquire the Interests and Property;

(c) it is knowledgeable and experienced in the evaluation, acquisition, and operation of oil and gas properties;

(d) it has evaluated the merits and risks of purchasing the Interests and has formed an opinion based solely upon its knowledge and experience and not in reliance on any statements or actions by ExxonMobil or its Associated Parties except the representations and warranties of ExxonMobil set forth herein;

(e) it will acquire the Interests and Property "as is, where is," and with all faults; and

(f) it has incurred no brokerage fees, finder's fees, agent's commissions or other similar forms of compensation to an intermediary as a result of undertakings or agreements of Buyer or any Affiliate of Buyer in connection with the negotiation, execution or delivery of this Agreement or any agreement or transaction contemplated hereby for which ExxonMobil will have directly, indirectly, any responsibility, liability or expense.

19.04. Material Factor. Buyer acknowledges that its representations under this Article, the rest of this Agreement, and the Additional Instruments are a material inducement to ExxonMobil to enter into this Agreement with, and close the sale to, Buyer.

19.05. ExxonMobil's Representations. Each of the ExxonMobil entities represents that as of the Execution Date:

(a) Organization. It is a duly organized entity, validly existing and in good standing, is duly qualified to carry on its business in connection with the interests has full power and authority to enter into and perform pursuant to this Agreement according to its terms.

(b) No Conflict. Its execution, delivery and performance of this Agreement and the transactions contemplated hereby have been duly authorized by all necessary action in accordance with the terms of the applicable organizational agreements and it will not violate or conflict with any agreement, law, rule, regulation, or charter.

(c) Validity of Agreement. It has the corporate or limited partnership power to carry on its business as presently conducted, to execute and deliver this

Agreement and the other agreements and documents contemplated hereby and to perform its obligations under this Agreement and the other agreements and documents contemplated hereby. This Agreement has been duly executed and delivered and constitutes a valid and binding obligation on ExxonMobil, duly authorized and enforceable against it in accordance with the terms hereof.

(d) Bankruptcy. There are no bankruptcy, reorganization or receivership proceedings pending, being contemplated or threatened against ExxonMobil.

(e) Liability for Brokerage Fees. There are no brokerage fees, finder's fees, agent's commissions or other similar forms of compensation to an intermediary as a result of undertakings or agreements of ExxonMobil or any Affiliate of ExxonMobil in connection with the negotiation, execution or delivery of this Agreement or any agreement or transaction contemplated hereby for which Buyer will have directly, indirectly, any responsibility, liability or expense.

(f) Material Related Agreements. Based on ExxonMobil's information and belief, after reasonable inquiry to appropriate personnel, all Material Related Agreements are identified on Exhibit A, Exhibit A-1, Exhibit B or Exhibit K.

ARTICLE 20. GAS IMBALANCES

20.01. ExxonMobil's and Buyer's Respective Obligations. For those Interests with cumulative gas-production-imbalance accounts among working interest owners, Buyer acknowledges that the amounts (i) are derived from either Operator's statements or ExxonMobil's estimates based upon current production, prior sales history, and contract information, (ii) were provided to Buyer before the Execution Date, and (iii) were taken into consideration in Buyer's calculation of the Base Purchase Price and the Allocations. After the Effective Time, all benefits, obligations, and liabilities associated with these gas-production-imbalance accounts and related agreements will accrue to and become Buyer's responsibility. Buyer will assume ExxonMobil's overproduced or underproduced position as of the Effective Time. If there is a cash settlement due ExxonMobil at the time of Closing under any operating agreement, plan of unitization, or gas balancing agreement for an Interest, ExxonMobil shall retain all rights to the cash settlement.

Buyer represents that in calculating the Base Purchase Price and its Allocations, it has considered ExxonMobil's procedures for paying royalties and severance taxes with regard to each gas-production-imbalance account.

20.02. Settlement.

(a) If either (1) before Closing, or (2) on the later of ExxonMobil's preparation of the Final Settlement Statement or one hundred fifty (150) days after Closing, either Party determines that a Material Difference (as defined below) exists between the

total of the gas-production-imbalance accounts represented in Exhibit E and the total of the gas-production-imbalance accounts as of the Effective Time, then the Base Purchase Price will be adjusted if there is a Material Difference. The value of the difference will be calculated by multiplying the volume difference by $2.50 per Mcf (thousand cubic feet). A "Material Difference" exists if the absolute value of the difference exceeds $100,000.00.

(b) Regardless of whether a Material Difference exists, if the difference between the represented and actual gas-production imbalance account for an Interest exceeds $100,000.00, then each Party shall have the election of withdrawing that Interest from this Agreement and adjusting the Base Purchase Price by the Allocation for the Interest. The difference in the gas-production-imbalance account for the withdrawn Interest will not be used to determine whether a Material Difference exists.

(c) If a Material Difference identified before Closing exceeds ten percent (10%) of the Base Purchase Price, then either Party may, upon written notice to the other, terminate this Agreement, in which case, the Performance Deposit will be returned to Buyer. Before terminating this Agreement, however, ExxonMobil and Buyer will each make a good-faith effort to negotiate a settlement.

ARTICLE 21. FINAL SETTLEMENT STATEMENT

ExxonMobil will prepare a final settlement statement and submit it to Buyer within one hundred fifty (150) days after the Closing Date (the "Final Settlement Statement"). The Final Settlement Statement will deduct royalties, operating expenses, taxes, overhead, and other amounts due to ExxonMobil from amounts due to Buyer as provided in this Agreement, with adjustments as necessary for items identified after Closing. Upon Buyer's request, ExxonMobil will provide information reasonably necessary to support the amounts set forth in the Final Settlement Statement. ExxonMobil may set off any resulting amount due to Buyer against amounts that Buyer may otherwise owe to ExxonMobil or its Affiliates when the Final Settlement Statement is prepared.

Buyer must respond in writing with objections and proposed corrections within thirty (30) days of receiving the Final Settlement Statement. If the Parties cannot resolve their differences within ninety (90) days of ExxonMobil's receipt of Buyer's objections, then the alternate dispute resolution and arbitration procedures of Article 17 will be triggered. If Buyer does not respond to the Final Settlement Statement by signing or objecting in writing within the 30-day period, the statement will be deemed approved by Buyer. After approval of the Final Settlement Statement, ExxonMobil will send payment or invoice to Buyer for the net amount. If payment is not made within thirty (30) days of Buyer's receiving the invoice, the amount due may, at ExxonMobil's option, bear interest at a rate of twelve percent (12%) per annum or the maximum lawful rate, whichever is less, compounded daily from the date of Buyer's receipt of the invoice until paid. Inquiries regarding the Final Settlement Statement must be in writing, addressed to:

ExxonMobil Upstream Business Development Company
22777 Springwoods Village Parkway
Spring, TX 77389
Attention: Divestments Manager

ARTICLE 22. INTENTIONALLY LEFT BLANK

ARTICLE 23. COMMUNICATIONS

Unless otherwise provided in this Agreement, communications (including notices) under this Agreement that must be in writing and delivered by a specified date will be deemed to have been made when received at the following addresses by registered or certified mail, postage prepaid, or by messenger:

ExxonMobil:	Buyer:
ExxonMobil Upstream Business Development Company P.O. Box 2180 Houston, Texas 77252-2180 22777 Springwoods Village Parkway Spring, Texas 77389 Attention: Divestments Manager	W&T Offshore, Inc. Nine Greenway Plaza Houston, TX 77046 Attention: Land Manager

ARTICLE 24. BUYER'S DEFAULT

Except as provided in section 3.02(b), if Buyer defaults under this Agreement in a material way, including Buyer's failure to perform its obligations to close this transaction, ExxonMobil may, at its sole option, terminate this Agreement and retain the Performance Deposit, in addition to all of its other rights at law or in equity. For avoidance of doubt, except as provided in in Section 3.02(b), ExxonMobil's election to retain the Performance Deposit under this Article 24 shall not be considered as liquidated damages nor as an election of remedies.

ARTICLE 25. HART-SCOTT-RODINO ANTITRUST IMPROVEMENTS ACT OF 1976; REQUIRED FILINGS IN FOREIGN JURISDICTIONS

25.01 Obligation to Make Filings. Each Party shall make all necessary filings for which it is responsible pursuant to the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (the "HSR Act"), the EU Merger Regulation and any other law that requires a mandatory merger control filing with respect to the transaction covered by this Agreement, if applicable, within fifteen (15) Business Days of the Execution Date and shall supply promptly all additional information and documentary material requested by any government entity in connection with such filings or as otherwise required under the HSR Act or other applicable law.

Each Party shall be responsible for and shall timely pay all filing fees required of such Party in connection with HSR Act filings and any other antitrust, trade or competition law filings required in any other jurisdiction.

25.02 Cooperation on Making Filings. Each Party to this Agreement shall promptly notify the other Parties of any communication it or any of its Affiliates receives from any governmental entity relating to the matters that are the subject of this Agreement and permit the other Parties to review in advance, to the extent permitted by law, any proposed communication by such Party to any governmental entity. No Party to this Agreement shall agree to participate in any meeting with any governmental entity in respect of any filings, investigation or other inquiry unless it consults with the other parties in advance and, to the extent permitted by such governmental authority, gives the other parties the opportunity to attend and participate at such meeting. The Parties will coordinate and cooperate fully and promptly with each other in exchanging such information and providing such assistance as the other parties may reasonably request in connection with the foregoing and in seeking early termination of any applicable waiting periods, including those under the HSR Act. To the extent permitted by law, the Parties will provide each other with copies of all correspondence, filings or communications between them or any of their representatives, on the one hand, and any governmental entity or members of its staff, on the other hand, with respect to this Agreement and the transactions contemplated by this Agreement.

Buyer agrees to use reasonable commercial efforts and to take promptly any and all steps necessary to avoid or eliminate each and every impediment under any antitrust, competition, or trade regulation law that may be asserted by any governmental entity or any other person with respect to the transaction contemplated by this Agreement so as to enable the Closing to occur expeditiously, but in no case later than the scheduled date of Closing, including providing information, proposing, negotiating, committing to and/or effecting, by consent decree, hold separate orders, or otherwise, the sale, divestiture or disposition of, or holding separate (through the establishment of a trust or otherwise) such of its assets, properties or businesses or of the assets, properties or businesses of the Interests to be acquired by it under this Agreement as are required to be divested in order to avoid the entry of, or to effect the dissolution of, any decree, order, judgment, injunction, temporary restraining order or other order in any suit or proceeding, which would otherwise have the effect of materially delaying or preventing the consummation of the transaction or that would make the consummation of the transaction in accordance with the terms of this Agreement unlawful. In addition, Buyer shall use reasonable commercial efforts to defend through litigation on the merits any claim asserted in court by any party in order to avoid entry of, or to have vacated or terminated, any decree, order or judgment (whether temporary, preliminary or permanent) that would restrain or prevent the Closing by the scheduled date of Closing.

Buyer shall use reasonable commercial efforts in making any settlement offers and negotiating any consent decree or consent order with any governmental entity in order to permit the transaction under this Agreement to be consummated prior to the scheduled date of Closing. Buyer agrees that, at any time in an investigation, if a governmental entity suggests or proffers a settlement of the investigation to permit the transactions contemplated by this Agreement to close, the Buyer shall promptly (and in any event within one (1) Business Day) communicate the terms of the offer to ExxonMobil. Buyer, in its sole discretion, may accept or reject any settlement of the investigation proposed by any governmental entity.

The parties agree, pursuant to Article 8.06(b), that receipt of all required competition law or merger control consents or clearances, or expiration of applicable waiting period under the HSR

Act or any other applicable competition laws, is a condition precedent to Closing. In the event that all required such consents or clearances required under this Article 25 are not obtained, or any such waiting periods have not expired, prior to the scheduled date of Closing, then subject to Article 8.09 the Closing date will be extended until all such consents and clearances are received or waiting periods have expired.

ARTICLE 26. EXXONMOBIL'S DISCLAIMER OF WARRANTIES AND REPRESENTATIONS

EXCEPT AS EXPRESSLY SET OUT IN SECTION 19.05 HEREIN AND IN ARTICLE 5 OF EXHIBIT C, EXXONMOBIL HAS NOT MADE, AND WILL NOT MAKE, ANY WARRANTY OR REPRESENTATION, EXPRESS, IMPLIED, OR STATUTORY, WHATSOEVER IN CONNECTION WITH THIS AGREEMENT OR THE TRANSACTION CONTEMPLATED BY IT, INCLUDING THE ACCURACY OR COMPLETENESS OF DATA, INFORMATION, OR MATERIALS FURNISHED AT ANY TIME TO BUYER IN CONNECTION WITH THE INTERESTS OR PROPERTY, OR THE QUALITY (INCLUDING THE PRESENCE OF HYDROGEN SULFIDE) OR QUANTITY OF HYDROCARBON RESERVES (IF ANY) ATTRIBUTABLE TO THE INTERESTS, OR THE ABILITY OF THE INTERESTS TO PRODUCE HYDROCARBONS. NONE OF EXXONMOBIL'S ASSOCIATED PARTIES IS AUTHORIZED TO MAKE ANY WARRANTY OR REPRESENTATION ON EXXONMOBIL'S BEHALF. ALL DATA, INFORMATION, AND OTHER MATERIALS FURNISHED BY EXXONMOBIL ARE PROVIDED TO BUYER AS A CONVENIENCE, AND RELIANCE ON OR USE OF THEM IS AT BUYER'S SOLE RISK.

ARTICLE 27. MISCELLANEOUS

27.01. No Joint and Several Obligations. In the event that there are multiple sellers under this Agreement, the obligations of each seller are several, and not joint and several.

27.02. Entire Agreement. This Agreement and the Additional Instruments constitute the entire agreement between the Parties as to the transaction described in this Agreement. All previous negotiations and communications between the Parties as to these matters are merged into this Agreement and the Additional Instruments.

27.03. Successors and Assigns; Amendment; Survival.

(a) This Agreement is binding on and inures to the benefit of the Parties and their respective successors, heirs, representatives, and assigns and may be supplemented, altered, amended, modified, or revoked only in writing signed by both Parties. Neither the assignment of this Agreement nor of the Interests or any part of them will relieve Buyer of its obligations under this Agreement unless and to the extent ExxonMobil consents in writing to release Buyer, which consent may be withheld for any reason.

(b) All provisions of this Agreement and the Additional Instruments that cannot be performed before Closing and all representations, promises, releases, and indemnities under this Agreement and the Additional Instruments will survive Closing.

(c) The following provisions survive the termination of this Agreement:

(1) Section 5.02 (Access to ExxonMobil-Operated Interests);

(2) Section 5.03 (Environmental Assessment), including Exhibit F;

(3) Section 5.07 (Buyer's Confidentiality Obligations);

(4) Article 16 (Release, Discharge, and Covenant not to Sue and Obligations to Indemnify, Defend, and Hold Harmless);

(5) Article 17 (Alternate Dispute Resolution and Arbitration);

(6) Article 18 (Environmental Matters);

(7) Article 19 (Buyer's Representations);

(8) Article 22 (Broker's and Finder's Fees);

(9) Article 23 (Communications);

(10) Article 26 (ExxonMobil's Disclaimer of Warranties and Representations); and

(11) Article 27 (Miscellaneous).

27.04. Choice of Law. This Agreement and its performance will be construed in accordance with, and enforced under, the internal laws of the State of Texas, without regard to choice of law rules of any jurisdiction, including Texas.

27.05. Assignment. Neither this Agreement nor the rights and obligations under it may be assigned or delegated by Buyer without ExxonMobil's prior written consent, which consent may be withheld for any reason, and an attempted assignment or delegation is void.

27.06. No Admissions. Neither this Agreement, nor any part of it, nor any performance under this Agreement, nor any payment of any amount under this Agreement will constitute or may be construed as a finding, evidence of, or an admission or acknowledgment of any liability, fault, past or present wrongdoing, or violation of law, rule, regulation, or policy, by either ExxonMobil or Buyer or their respective Associated Parties.

27.07. No Third-Party Beneficiaries. There are no third party beneficiaries of this Agreement.

27.08. Public Communications. Unless provided otherwise in this Agreement, Buyer will not make any press release or public communication concerning this transaction or ExxonMobil's operation of the Interests without ExxonMobil's prior written consent, which consent may be withheld for any reason. ExxonMobil shall not require remuneration of any kind for such consent. Without prejudice to the foregoing, Buyer shall provide ExxonMobil with any proposed press release or public communication at least ten (10) Business Days prior to its proposed release date. Notwithstanding the foregoing, if Buyer determines in good faith after consultation with legal

counsel that it is required by law, rule or stock exchange requirement to make a prompt public comment, statement or communication or any other disclosure with respect to this Agreement or any other disclosure with respect to this Agreement, it will use reasonable best efforts to provide written notice as soon as reasonably practicable to ExxonMobil specifying the content of the proposed disclosure, the reason that such disclosure is required, and the time and place that the disclosure will be made prior to its proposed disclosure date and provide ExxonMobil with reasonable opportunity to comment on same.

27.09. Audit Clause. If ExxonMobil will own an interest after Closing in any Interest or Property (including overriding royalties, deep rights, and facilities, equipment, or pipelines) or continue to own interests for which ExxonMobil requires access across the Interests or Property in order to exercise its rights, then, ExxonMobil will reserve concurrent interests in the applicable easements, rights-of-way, contracts and other rights relating to the retained or reserved interests. ExxonMobil reserves the right to perform an audit as stated below.

If the immediately preceding sentence is applicable, ExxonMobil, upon notice in writing to Buyer, shall have the right to access the buyer's offices, facilities, work sites, warehouses, books, records, correspondence, instructions, plans, drawings, receipts, vouchers, financial accounts, data stored in computer files or microfiche and personnel to audit Buyer's accounts and records relating to the retained royalty interest, including any hedge agreements, facilities used for the measurement of production from the properties, for any calendar year within the twenty-four (24) month period following the end of such calendar year. The same audit rights are to extend to subcontractors. Buyer shall maintain supporting data and accounting records consistent with generally accepted accounting principles, and the employees and agents of ExxonMobil shall have the right to reproduce and retain for the purpose of audit, any of these documents. ExxonMobil shall not be liable for any of Buyer's Contractor's or Subcontractor's costs resulting from an audit hereunder.

27.10. Headings and Titles. The headings and titles in this Agreement are for guidance and convenience of reference only and do not limit or otherwise affect or interpret the terms or provisions of this Agreement.

27.11. Exhibits. All exhibits referenced in and attached to this Agreement are incorporated into it.

27.12. Includes. The word "includes" and its syntactical variants mean "includes, but is not limited to" and corresponding syntactical variants. The rule *ejusdem generis* may not be invoked to restrict or limit the scope of the general term or phrase followed or preceded by an enumeration of particular examples.

27.13. Severability. If a court of competent jurisdiction finds any part of this Agreement to be void, invalid, or otherwise unenforceable, then ExxonMobil may decide whether to enforce this Agreement without the void, invalid, or unenforceable parts or to terminate this Agreement.

27.14. Counterparts. This Agreement may be executed in multiple counterparts, all of which together will be considered one instrument.

27.15. Conflicts. If the text of this Agreement conflicts with the terms of any exhibit to this Agreement, then the text of this Agreement will control.

27.16. Not to Be Construed against the Drafter. Buyer acknowledges that it has read this Agreement, has had opportunity to review it with an attorney of its choice, and has agreed to all of its terms. Under these circumstances, the Parties agree that the rule of construction that a contract be construed against the drafter may not be applied in interpreting this Agreement.

27.17. No Waiver. No waiver by either Party of any part of this Agreement will be deemed to be a waiver of any other part of this Agreement or a waiver of strict performance of the waived part in the future.

27.18. Conspicuousness. **BUYER ACKNOWLEDGES THAT THE PROVISIONS OF THIS AGREEMENT THAT ARE PRINTED IN THE SAME MANNER AS THIS SECTION ARE CONSPICUOUS.**

27.19. Execution by the Parties. Neither the submission of this instrument or any information concerning the Interests for Buyer's examination, nor discussions or negotiations between the Parties constitutes an offer to sell, a reservation of, or an option for the Interests or Property, and this instrument and the underlying transaction will become enforceable and binding between the Parties only upon execution and delivery of this instrument by both ExxonMobil and Buyer.

The Parties have executed this Agreement on the date below their signatures, to be enforceable and binding as of the Execution Date.

W&T OFFSHORE, INC.

By: _____

Name: Tracy W. Krohn

Title: Chief Executive Officer

Date: 6-26-19

EXXON MOBIL CORPORATION

By: _____

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST INC.

By: _____

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

XH, LLC

By: _____

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

EXXON MOBILE BAY LIMITED PARTNERSHIP

Exxon Mobil Corporation, General Partner,
on behalf of Exxon Mobile Bay Limited Partnership

By: Jarod M. Rolland

Name: Jarod M. Rolland

Title: Agent and Attorney-in-Fact

Date: June 26, 2019

EXXONMOBIL U.S. PROPERTIES INC.

By: Mickey D. Johnson

Name: Mickey D. Johnson

Title: Agent and Attorney-in-Fact

Date: 6-26-19

ALABAMA
OIL & GAS BOARD

EXHIBIT 17

Docket Nos. 2-19-26-01 through 2-19-26-05

Grid Map, Marine Resources,
Alabama Department of Conservation and Natural Resources

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION



Exhibit No: 17

Petitioner: Board

Item No: 1-5 Date: 2-19-26

Witness: John Maresko

Received by:

Marvin Rogers

From: Marvin Rogers
Sent: Monday, February 2, 2026 5:00 AM
To: Marvin Rogers
Subject: Fw: oyster resourses
Attachments: AMRD_Bulletin#14_Tatum_etal_1995.pdf; alabama_oys_reefs.jpg; Coastal Alabama Comprehensive Oyster Restoration Strategy.pdf

Get map of all resources.
Shrimping areas.

Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

From: Mareska, John <John.Mareska@dcnr.alabama.gov>
Sent: Thursday, January 15, 2026 11:47:42 AM
To: Marvin Rogers <mrogers@ogb.state.al.us>
Subject: oyster resourses

Marvin,
See attached file of lower mobile reefs (Bulletin 14) and the link is to our grid map Marine Resources uses to manage the active reefs during the season. Also a jpg file of additional reef resources. This does not include relic reefs and shell deposits. Page 18 of Comprehensive Restoration Strategy will give you a better idea of those resources.

https://aldcnr.maps.arcgis.com/apps/webappviewer/index.html?id=ac816b5cdcd2442ba46efdd2d86e141e

John Mareska
Alabama Marine Resources Division
Direct: 251-968-9737
Mobile: 251-233-0560

ALABAMA
OIL & GAS BOARD

EXHIBIT 18

Docket Nos. 2-19-26-01 through 2-19-26-05

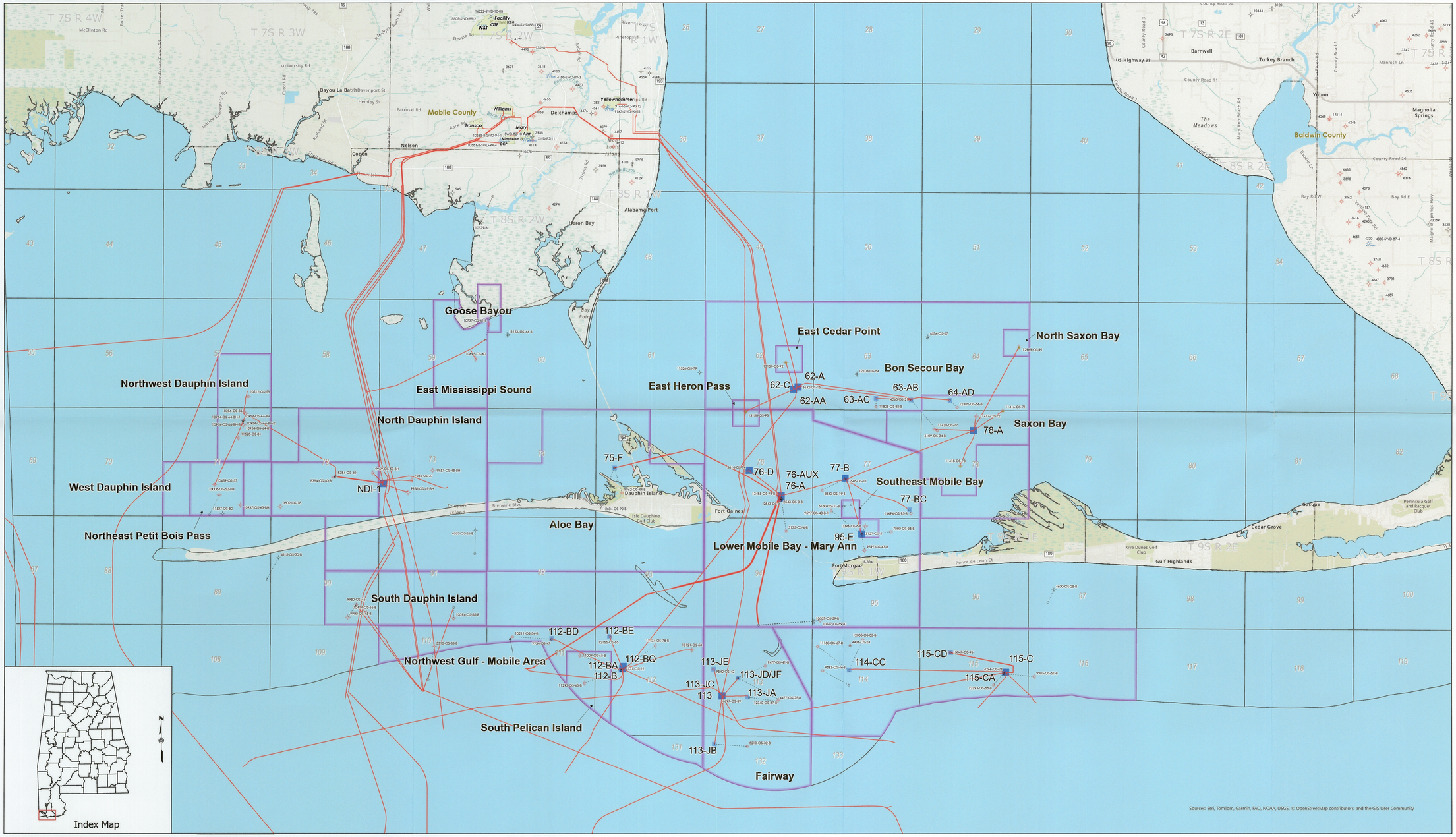
Prepared by Eric St. Clair



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Received
JAN 29 2026
LEGAL DIVISION

STATE OF ALABAMA OIL AND GAS BOARD

OFFSHORE INFRASTRUCTURE



Legend

- Offshore Pipelines
- Onshore Facilities

Offshore Structures

Type

- Caisson
- Minor Template
- Template
- Platform
- Offshore Fields
- Alabama Lease Blocks

0 0.75 1.5 3 Miles

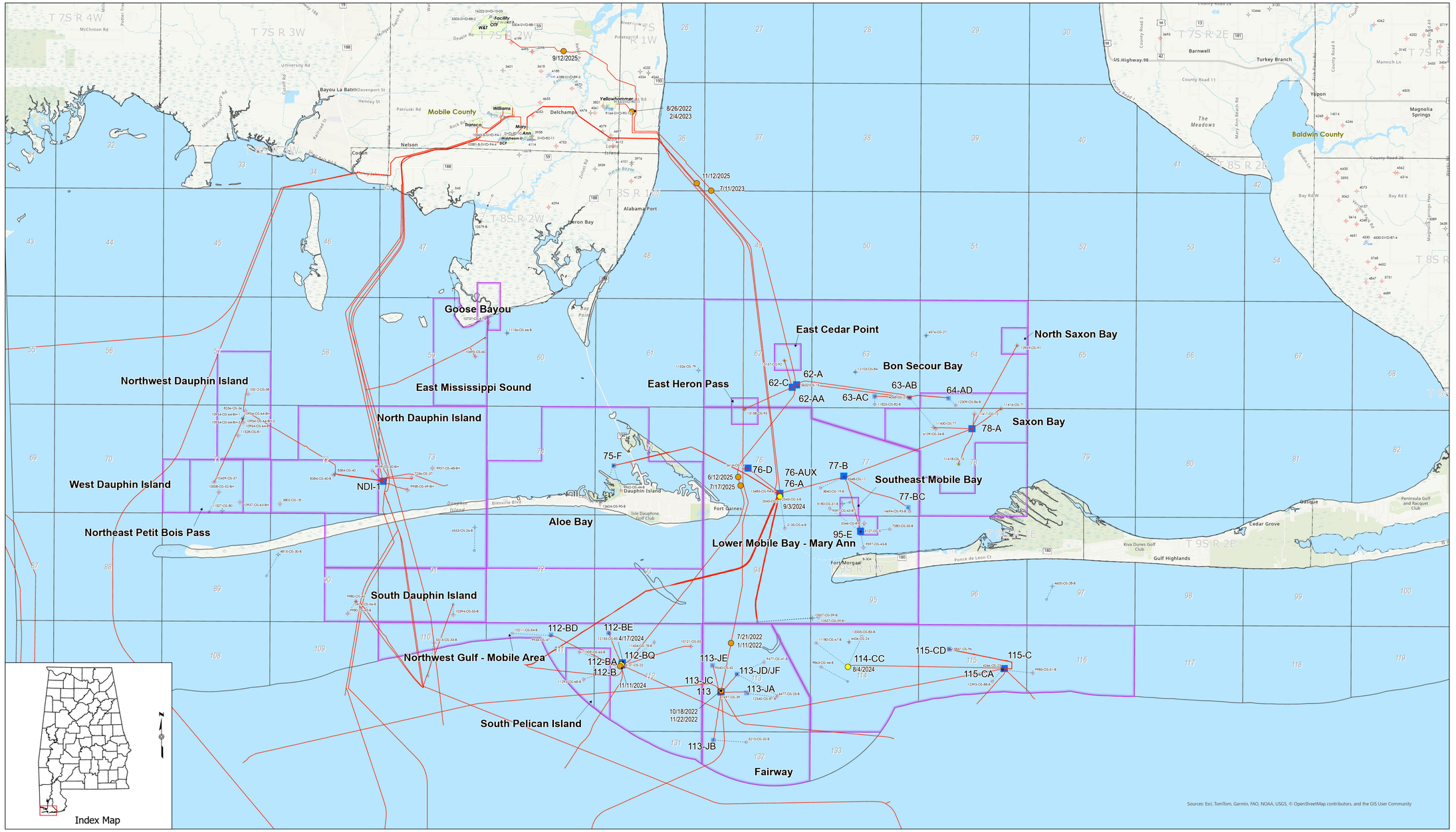
ALABAMA OIL & GAS BOARD

Exhibit No: 18 A
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Eric St. Claire
Received by: EP

Berry H. (Nick) Tew, Jr.
State Oil and Gas Supervisor

STATE OF ALABAMA OIL AND GAS BOARD

OFFSHORE INFRASTRUCTURE



Legend

Label
- Incident Location
- Corrected Incident Location
- <all other values>
- Offshore Pipelines
- Onshore Facilities

Offshore Structures

Type
- Caisson
- Minor Template
- Template
- Platform
- Offshore Fields
- Alabama Lease Blocks

0 0.75 1.5 3 Miles

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

STATE OIL AND GAS BOARD OF ALABAMA
Founded 1945

Berry H. (Nick) Tew, Jr.
State Oil and Gas Supervisor

ALABAMA
OIL & GAS BOARD

EXHIBIT 19

Docket Nos. 2-19-26-01 through 2-19-26-05

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ExxonMobil Production

Mobile Bay Pipelines

South Mobile County, Alabama
Platform & Well Area Map

Scale 1" = 2640' (1/2 mile)

2640 0 2640 5280 7920

Revised April 24, 2019

Legend

- Water Feature
- Highway
- Paved Road

Note: Platform locations are approximate for legibility

Maintained by
Hale Consulting, LLC
9273 WHF Rd Ext
Bay Minette, AL 36507
251.422.1244
www.hcllc.net

Product Legend

Service	Line Type
Diesel/Dilution Water (D/DW)	
Produced Water/Oil (PW/O)	
Produced Water (PW)	
Full Well Stream (FWS)	
Fuel Gas (FG)	
Produced Gas (PG)	
Dilution Water (DW)	
Well Service (WS)	
Nitrogen (N)	
Instrument Air (IA)	
Glycol (GL)	
Out of Service	
Abandoned	
Third Party	

Line Identification

APSC hMobil 16" PG 026 RTP

- RTP: Reinforced Plastic Pipe
- 026: Segment #
- PG: Product (See Legend above)
- 16": Line Size
- hMobil: hExxon or hMobil
- APSC: APSC or DOT or BSEE or BSEE/DOT

Cathodic Protector Identification Legend

76A 035

- 035: Pipeline Number
- 76A: Pipeline/Cathodic Read Station

Pipeline Safety Devices

	Segment	Line size	Status	MOP/ MAOP	Over Pressure Protection	Outgoing SDV	Boarding SDV
MB 01	20	6.625"	Active	1415	KAA-8218/PSH1350	XV-2002	SDV-8219A
	21	6.625"	Active	1415	PSH-8218A/PSH-07121	SDV-8218A	SDV-8232A
	22	6.625"	Active	350	PSH-8232	SDV-9347A	SDV-8280A
	25	5"	Active	1415	PSV-8219A PSH-8216/07121	SDV-8219C	SDV-8248A
	28	6.625"	Active	1415	PSV-8252 PSH-82511/PSH8249A	SDV-8280A	SDV-8249A
MB02	197	4.5"	Active	1770	PSH-771B	SDV-771	SDV-771
	198	4"	Active	1480	PSH-765	SDV-795 SDV-794A&B	SDV-795 SDV-793A&B
	239	6"	Active	1480	PSH-130A/PSH-FA1	SSTI	SDV-796 SDV-793A&B
	252	6"	Active	1480	PSH-130A/PSH-FA1	HV-5730 HV-5707 HV-3004 HV-2004	SSTI
	277	3"	Active	1480	PSH-130A/PSH-FA1	SSTI	SDV-797
	500	4"	Active	1480	PSH-130A/PSH-FA1	None	SDV- 3033
MB03	18	10.75"	Active	1600	PSV-03184 PSH GAY-0318	SDV-9326A	XV-2006&XV 2008
	19	12.75"	Active	1600	PSV-93404 PSH-0338A	SDV-0339A	SDV-0321A
	23	6.625"	Active	1600	PSH-0378A/PSH-03784	SDV-0378A	SDV-0336A
	26	16"	Active	1425	PSH-0318	SDV-0319	SDV-2022A
	27	20"	Active	1600	PSH-0326A	SDV-0326A	SDV-0317
	29	20"	Active	1600	PSH@823	SDV-0320	SDV-SSY80001
	31	8.625"	Active	1600	PSH-777C6/94	SDV-775 & SDV-777A&B	SDV-0334A
	35	12.75"	Active	2100	PSH-07011	SDV-0701ABC	SDV-03931
	37	5.563"	Active	6000	PSV-03961 PSH-010221/PSH-03942	SDV-03951	SDV-03961
	401	8.625"	Active	3500	PSV-4078A&B PSEL-705/PSH45381	SDV-705A&B	SDV-03961
MB04	102	4.5"	Active	8300	PSH707-B	SDV-721A&B	SDV-707
	106	4"	Active	8000	PSH-706	SSV-721A&B	SDV-706
	194	4"	Active	5897	PSV-706A&B PSH-745A&B	SDV-745@CC	SDV-745@NCG
	195	4"	Active	8700	PSH-705B	SSV-CC	SDV-705B
	213	4"	Active	8700	PSV-704A&B PSH-704A&B	SSV-721A&B	SDV-704A
	224	16"	Active	1520	PSH-029A	SDV-760A,SDV-763A&B	SDV-760,SDV-764A&B
	227	4"	Active	11000	PSH-707A/A705B	SSV-722A&B	SDV-705A
	228	4"	Active	5897	PSH-706A	SDV-746A	SDV-746
	229	4"	Active	11000	PSV-706A&B PSH-706A&B	SSV-721A&B	SDV-706
	244	24"	Active	1600	PSH-029A	SDV-761A,763A&B	HV2001,HV153, HV3001,HV103
	254	24"	Active	1600	PSH-029A	SDV-761A,763A&B	HV2001,HV153, HV3001,HV103
	255	4"	Active	6170	PSV-705A&B PSH-705A&B	SDV-705	SDV-705A
	256	4"	Active	8700	PSV-705A&B PSH-705A	AC-SSV	SDV-705
	257	4"	Active	8100	PSV-704A&B PSH-704A	SSV-721A&712B	SDV-704A
	279	10"	Active	1600	PSH-028A	SDV-762A	SSTI
	313	8"	Active	6000	PSV-706A&B PSH-706B	SSV-CC	SDV-706
	314	4"	Active	7500	PSH-709A&B	SSV-721A&B	SDV-709A
	400	8"	Active	6000	PSH-708A&B	SDV-708B&C,708E	SDV-708B&C,708D
	403	8"	Active	2826	PSH-708A&C	SDV-708	SDV-708A
	501	12"	Active	1647	PSH-029A & 3031	HV-3031	HV15017, 15016, 15015
MB05	1	6.625"	Active	2160	PSV-19244 PSH-1924	SDV-1925A	SDV-6MBV
	3	6.625"	Active	2100	PSV-93401 PSH-1940&1924	SDV-1945A	SDV-1922A
	5	4.5"	Active	1900	PSV 19783&19793 PSH-4574	SDV-1984A	SDV-1941A
MB06	223	6"	Active	1480	PSH-765B	SDV-765, SDV-768A&B	SDV-765, SDV-769A&B
	243	8"	Active	1480	PSV-365 366 370 PSH-766B	SDV-765, SDV-768A&B	SSTI
	253	8"	Active	1480	PSH-766B	SSTI	HV-116
	278	4"	Active	1480	PSH-767B	SDV-767	SSTI
	502	6"	Active	2100	PSV-365, 366, 370 PSH-766B and GAZ-1924	SDV-1925A,766,768A&B	SDV-6MBV, 765, 769A&B
MB07	4	8.625"	Active	2100	PSV-9322 PSH-9313	SDV-9320A	SDV-9345A
	6	4.5"	Active	2000	PSV-93404 PSH-9340	SDV-8233A	SDV-9388A
	8	8.625"	Active	2160	PSV-93282 PSH-9318	8MBV	SDV-9317A
	10	2.375"	IDLE	10000	PSV-934818/9349 1 PSH-9348	SDV-93511	SDV-03131
	12	2.375"	Active	5000	PSH-98521	SDV-93521	SDV-03121
	402	4.5"	Active	6000	PSV-9333 PSH-745B	SDV-9390	SDV-745A&B
MB08	101	3.5"	Active	6238	PSV-747B PSH-747B	SDV-747	SDV-747
	105	3"	Active	6239	PSV-746 PSH-746	SDV-746	SDV-746
	238	4"	Active	1480	PSV-4036A 4036B 4036C PSH-771	SSTI	SDV-772
	251	4"	Active	1480	PSV-4036A 4036B 4036C PSH-771	HV-4001	SSTI
	258	4"	Active	6170	PSV-744A PSH-744	SDV-744	SDV-744B
	260	3"	Active	1480	PSV-4036A 4036B 4036C PSH-773-B	SSTI	SDV-773
	503	4"	Active	2100	PSV-4036A 4036B 4036C PSH-9318& 771	HV-4001&SDV-8MBV	SDV-773&9317A
OOS/UR	214	NR	Active				
	226	NR	Active				
	234	NR	Abnd				
	315	NR	Active				
	32	NR	Active				
	36	2.375"	OOS				
	24	6.625"	OOS				
	104	3.5"	OOS				
	11	4.5"	OOS				
	9	4.5"	OOS				
	2	4.5"	OOS				
	233	4"	ABD				
	103	4"	OOS				
	34	6.625"	OOS				
	30	5.7"	OOS				
	33	10.75"	OOS				

ALABAMA OIL & GAS BOARD

Exhibit No: 19
Petitioner: Board
Item No: 1-S Date: 2-19-26
Witness: Eric St. Clair
Received by: EP

ALABAMA
OIL & GAS BOARD

EXHIBIT 20

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

Marvin Rogers

OIL & GAS BOARD
Received
JAN 29 2026
LEGAL DIVISION

BEFORE THE STATE OIL AND GAS BOARD OF ALABAMA

PURSUANT TO A DECISION RENDERED FOLLOWING A REGULAR SESSION OF THE STATE OIL AND GAS BOARD OF ALABAMA ON DECEMBER 12, 2024, THE FOLLOWING ORDER IS HEREBY PROMULGATED:

IN RE: ORDER NO. 2024-45 **DOCKET NO. 9-17-24-04**

THIS CAUSE came on for hearing before the State Oil and Gas Board of Alabama (hereinafter referred to as "Board") on the petition of W&T OFFSHORE, INC. (hereinafter referred to as "W&T"), a foreign corporation authorized to do and doing business in the State of Alabama, requesting the Board to enter an order approving the temporarily abandoned status for the State Lease 701 #2 Well, Permit No. 12604-OS-90-B and the State Lease 701, Tract 75 #1 Well, Permit No. 9962-OS-44-B, in the Aloe Bay Field, Mobile County, Alabama, in accordance with Rule 400-2-4-.14(1) of the *State Oil and Gas Board of Alabama Administrative Code*.

The Board, after receiving and considering the evidence, finds that notice of the hearing of said cause has been given in the manner and form and for the time required by law and the rules and regulations of this Board and that proofs of publication of notice and evidence of the service of required personal notice are on file with the Board and that the Board has full jurisdiction of this case; and the Board being fully informed and being fully advised in the premises further finds as follows:

I.

That on a Petition by Mobil Oil Exploration & Producing Southeast Inc. (hereinafter referred to as "MOEPSI"), the Board established the Aloe Bay Field in Order No. 92-17, dated February 7, 1992.

II.

That W&T is the current Operator of the State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well, located in the Aloe Bay Field, Mobile County, Alabama. Both wells utilize the same offshore platform.

III.

That in 2002, MOEPSI drilled the State Lease 701 #2 Well in the Aloe Bay Field, Mobile County, Alabama. The well was determined to be non-productive and was then partially plugged. MOEPSI drilled and completed the State Lease 701, Tract 75 #1 Well as a productive well in 1991.

ALABAMA OIL & GAS BOARD
Exhibit No: 20
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Marvin Rogers
Received by: ES

IV.

That upon Application for Change of Operator filed by W&T and MOEPSI, the Board on December 16, 2019, approved W&T as operator of both wells.

V.

That said State Lease 701 #2 Well has previously been granted temporarily abandoned status in accordance with Rule 400-2-4-.14(1) of the *State Oil and Gas Board of Alabama Administrative Code* because the well utilizes the same platform as State Lease 701, Tract 75 #1 Well. Upon Petition filed by W&T, the Board, by Order No. 2023-48 issued on September 21, 2023, extended the temporarily abandoned status for the State Lease 701 #2 Well.

VI.

That W&T presented evidence concerning the State Lease 701 #2 Well that "W&T will start evaluating necessary permitting and logistics for the abandonment of the facility and well. We will propose a decommissioning plan and schedule in 2025."

VII.

That concerning the State Lease 701, Tract 75 #1 Well, W&T presented evidence that the well has not produced since January, 2024. W&T further presented evidence that the well is unable to produce, and the lease has expired. W&T stated in a questionnaire "the well does not have future utility and will be permanently abandoned." At the hearing, W&T stated the company might attempt to acquire a new lease for additional operations.

FINDINGS OF FACT

VIII.

That MOEPSI drilled the State Lease 701 #2 Well in 2002. The well was non-productive and partially plugged. The operator did not complete the plugging process because the well is a part of an offshore platform that continued to be utilized.

IX.

That W&T committed to the final plugging and abandonment of the State Lease 701 #2 Well and decommissioning of the platform in 2025. The State Lease 701 #2 Well is due to be plugged and abandoned and the platform removed.

X.

That the lease covering the State Lease 701, Tract 75 #1 Well has expired, and the subject well is due to be plugged and abandoned and the platform removed. W&T asserts that it may discuss with the Alabama Department of Conservation and Natural Resources the possibility of acquiring a lease as appropriate.

CONCLUSIONS OF LAW

XI.

That W&T is due to plug and abandon the State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well and remove the platform.

XII.

That the Order of the Board as set forth hereinbelow will prevent waste, protect correlative rights and protect the environment.

XIII.

That the W&T offshore wells are located in one of the most visible and environmentally sensitive areas in our State. The wells are located in Mobile Bay in State waters. The wells are located in the midst of one of our State's principal population centers. The entire area around Mobile Bay is the State's biggest source of tourism. The Port of Mobile is one of the largest and busiest in the U.S., and the shipping channel passes through these offshore wells. The wells, platforms, and equipment must be operated at the highest level of safety and maintenance in order to protect the public.

Based on the Findings of Fact and Conclusions of Law set forth hereinabove, **IT IS THEREFORE, HEREBY ORDERED, ADJUDGED AND DECREED** by the State Oil and Gas Board of Alabama that W&T Offshore, Inc. is hereby ordered to (1) plug and abandon the State Lease 701 #2 Well; and (2) plug and abandon the State Lease 701, Tract 75 #1 Well and remove the platform by December 31, 2025.

It is further ordered that W&T Offshore, Inc. report to the Board at the Board's hearing on May 8, 2025, on the plugging and abandonment operations and the removal of the platform.

It is further ordered that in the event W&T Offshore, Inc. obtains new leases, W&T may petition the Board accordingly.

ORDERED this 12th day of December, 2024.

STATE OIL AND GAS BOARD OF ALABAMA

BY: _____
Charles E. (Ward) Pearson, Chairman

BY: _____
Stephen P. French, Vice-Chairman

BY: _____
Jamie N. Ison, Member

ATTEST:

_____
Berry H. (Nick) Tew, Jr., Secretary

BEFORE THE STATE OIL AND GAS BOARD OF ALABAMA

PURSUANT TO A DECISION RENDERED FOLLOWING A REGULAR SESSION OF THE STATE OIL AND GAS BOARD OF ALABAMA ON DECEMBER 12, 2024, THE FOLLOWING ORDER IS HEREBY PROMULGATED:

IN RE: ORDER NO. 2024-46 **DOCKET NO. 9-17-24-05**

THIS CAUSE came on for hearing before the State Oil and Gas Board of Alabama (hereinafter referred to as "Board") on the petition of W&T OFFSHORE, INC. (hereinafter referred to as "W&T"), a foreign corporation authorized to do and doing business in the State of Alabama, requesting the Board to enter an order extending the temporarily abandoned status for the State Lease 539 #1 Well, Permit No. 9985-OS-51-B, the State Lease 538, Tract 115, Well No. 3, Permit No. 15847-OS-96, and the State Lease 538 (Tract 115) Well #1, Permit No. 4266-OS-23, in the North Central Gulf Field-Mobile Area, Baldwin County, Alabama.

The Board, after receiving and considering the evidence, finds that notice of the hearing of said cause has been given in the manner and form and for the time required by law and the rules and regulations of this Board and that proofs of publication of notice and evidence of the service of required personal notice are on file with the Board and that the Board has full jurisdiction of this case; and the Board being fully informed and being fully advised in the premises further finds as follows:

I.

That on a Petition by Exxon Corporation, the Board established North Central Gulf Field-Mobile Area in Order No. 86-239, dated September 12, 1986.

II.

That Exxon Mobil Corporation previously operated the State Lease 539 #1 Well, the State Lease 538, Tract 115, Well No. 3, and the State Lease 538 (Tract 115) Well #1 in the North Central Gulf Field-Mobile Area, Baldwin County, Alabama. Upon Application for Change of Operator filed by W&T and Exxon Mobil Corporation, the Board on December 6, 2019, approved W&T as operator of said wells.

III.

That the State Lease 539 #1 Well, State Lease 538, Tract 115, Well No. 3 and the State Lease 538 (Tract 115) Well #1 have previously been granted temporarily abandoned status.

IV.

That the Board, by Order No. 2022-51 issued on September 15, 2022, addressed wells in North Central Gulf Field-Mobile Area. Although the Board granted the W&T Petition in Order No. 2022-51, the Board also ordered, "W&T Offshore, Inc. to plug and abandon and restore the wellsite or produce the State Lease 538, Tract 115, No. 3 Well within one (1) year." W&T failed to comply with Order No. 2022-51. A year later in Order No. 2023-49, the Board again ordered W&T "to plug and abandon the State Lease 538, Tract 115, No. 3 Well and remove the platform by the end of 2024."

V.

That in this petition, W&T requests approval of temporarily abandoned status for the three wells.

VI.

That the expert witness testified that the State Lease 539 #1 Well is an integral part of the North Central Gulf platform, which currently has six wells producing through its facilities and is the hub for production operations in the North Central Gulf Field. The expert witness further testified that the well is braced to the North Central Gulf platform as well as to the State Lease 538, Tract 115 #2 Well.

VII.

That the expert witness testified that postponing the permanent plugging and abandonment of the State Lease 539 #1 Well will allow production operations on the North Central Gulf platform to continue without disruption and possible damage. The expert witness testified that the temporarily abandoned status for said well should be extended in order to allow W&T to postpone the completion of the permanent plugging and abandonment until said platform is removed.

VIII.

That the expert witness testified that the State Lease 538, Tract 115, Well No. 3, has been non-productive since October 2010 because of water production and scale in the wellbore. The expert witness testified that an acid stimulation was performed in January 2012 in an attempt to restore production, but thereafter, the well produced a low rate of gas. The expert witness further testified that a workover was performed in January 2018, but the work was unsuccessful. W&T

presented evidence that the well is due to be plugged and abandoned.

IX.

That the expert witness presented evidence that W&T will conduct additional operations in order to produce the State Lease 538 (Tract 115) Well #1. The witness testified that the well has future utility.

FINDINGS OF FACT

X.

That the State Lease 539 #1 Well and the State Lease 538 (Tract 115) Well #1 have future utility, and the temporarily abandoned status is due to be approved.

XI.

That W&T failed to plug and abandon the State Lease 538, Tract 115 Well No. 3 in violation of Order No. 2022-51 and Order No. 2023-49. Moreover, W&T failed to remove the platform as ordered by the Board. W&T is due to act expeditiously to plug and abandon the State Lease 538, Tract 115 Well No. 3 and to remove the platform as previously ordered by the Board.

CONCLUSIONS OF LAW

XII.

That like all operators, W&T is due to comply with and respect Orders of the Board. The Board and the public are strongly concerned that offshore wells having no future utility should be plugged and abandoned. Therefore, strict compliance with the Board's Orders is expected by W&T, which is conducting operations in Alabama's offshore waters, an environmentally sensitive area.

XIII

That the Order of the Board as set forth hereinbelow will prevent waste, protect correlative rights, and protect the environment.

XIV.

That the W&T offshore wells are located in one of the most visible and environmentally sensitive areas in our State. The wells are located in Mobile Bay in State waters. The wells are located in the midst of one of our State's principal population centers. The entire area around Mobile Bay is the State's biggest source of tourism. The Port of Mobile is one of the largest and busiest in the U.S., and the shipping channel passes through these offshore wells. The wells, platforms, and equipment must be operated at the highest level of safety and maintenance in order to protect the public.

Based on the Findings of Fact and Conclusions of Law set forth hereinabove, **IT IS THEREFORE, HEREBY ORDERED, ADJUDGED AND DECREED** by the State Oil and Gas Board of Alabama that the Petition be **GRANTED**. Said Petition is granted extending the temporarily abandoned status for the State Lease 539 #1 Well, Permit No. 9985-OS-51-B, and the State Lease 538 (Tract 115) Well #1, Permit No. 4266-OS-23, located in the North Central Gulf Field-Mobile Area, Baldwin County, Alabama, for a period of one (1) year from the date of this Order, or until the next regularly scheduled meeting of the Board following the expiration of said one year period.

It is **FURTHER ORDERED** that W&T Offshore, Inc. shall plug and abandon the State Lease 538, Tract 115, Well No. 3, by June 30, 2025, and remove the platform by December 31, 2025. W&T Offshore, Inc., shall report to the Board at the hearing of the Board May 8, 2025, on the status of plugging and abandonment operations.

ORDERED this 12th day of December, 2024.

STATE OIL AND GAS BOARD OF ALABAMA

BY: _____
Charles E. (Ward) Pearson, Chairman

BY: _____
Stephen P. French, Vice Chairman

BY: _____
Jamie N. Ison, Member

ATTEST:

_____
Berry H. (Nick) Tew, Jr., Secretary

BEFORE THE STATE OIL AND GAS BOARD OF ALABAMA

PURSUANT TO A DECISION RENDERED FOLLOWING A REGULAR SESSION OF THE STATE OIL AND GAS BOARD OF ALABAMA ON DECEMBER 12, 2024, THE FOLLOWING ORDER IS HEREBY PROMULGATED:

IN RE: ORDER NO. 2024-48 **DOCKET NO. 9-17-24-07**

THIS CAUSE came on for hearing before the State Oil and Gas Board of Alabama (hereinafter referred to as "Board") on the petition of W&T OFFSHORE, INC., (hereinafter referred to as "W&T"), a foreign corporation authorized to do and doing business in the State of Alabama, requesting the Board to enter an order extending the temporarily abandoned status for the State Lease 536 #3 Well, Permit No. 11009-OS-65-B, the State Lease 537 #3 Well, Permit No. 11434-OS-78-B; and the State Lease 537 Tract 112 #4 Well, Permit No. 12155-OS-85, all located in Mobile County, Alabama, in the Northwest Gulf Field-Mobile Area.

The Board, after receiving and considering the evidence, finds that notice of the hearing of said cause has been given in the manner and form and for the time required by law and the rules and regulations of this Board and that proofs of publication of notice and evidence of the service of required personal notice are on file with the Board and that the Board has full jurisdiction of this case; and the Board being fully informed and being fully advised in the premises further finds as follows:

I.

That on a Petition by Exxon Corporation, the Board established the Northwest Gulf Field Mobile Area in Order No. 86-269, dated November 21, 1986.

II.

That upon Application for Change of Operator filed by W&T and Exxon Mobil Corporation, the Board on December 6, 2019, approved W&T as operator of the State Lease 536 #3 Well, Permit No. 11009-OS-65-B, the State Lease 537 #3 Well, Permit No. 11434-OS-78-B, and the State Lease 537 Tract 112 #4 Well, Permit No. 12155-OS-85, all located in Mobile County, Alabama, in the Northwest Gulf Field-Mobile Area.

III.

That the State Lease 536 #3 and the State Lease 537 #3 Wells have previously been granted temporarily abandoned status in accordance with Rule 400-2-4-.14(1) of the *State Oil and Gas Board of Alabama Administrative Code,* and the State Lease 537 Tract 112 #4 Well has previously been granted shut-in status in accordance with Rule 400-2-4-.14(2).

IV.

That the Board in Order No. 2022-52, issued on September 15, 2022, the Board ordered the State Lease 537, Tract 112 #4 Well plugged and abandoned.

V.

That the Board in Order No. 2023-51 issued on September 21, 2022, extended the temporarily abandoned status for the State Lease 536 #3 Well, the State Lease 537 #3 Well, and the State Lease 537 Tract 112 #4 Well. Furthermore, in said Order No. 2023-51, the Board ordered, (1) "Within sixty (60) days of the date of this Order, W&T shall submit an application to the U.S. Army Corps of Engineers to dismantle and remove the platform for the State Lease 537, Tract 112 #4 Well, Permit No. 12155-OS-85. (W&T shall provide a copy of the permit to the supervisor); and (2) W&T shall plug and abandon the State Lease 537, Tract 112 #4 Well and remove the platform by the end of 2024."

VI.

That W&T presented evidence that the State Lease 536 #3 Well was drilled in 1996 and produced for a number of years until 2006. W&T presented evidence that said well has future utility as a potential Norphlet producer or possible replacement well for State Lease 536 #2 Well, Permit No. 9934-OS-47.

VII.

That W&T presented evidence that the State Lease 537 #3 Well was drilled in 1998 and produced for a number of years until 2013. W&T presented evidence that W&T plans to permanently plug and abandon said well when the Northwest Gulf Platform BA template is abandoned.

VIII.

That W&T presented evidence that the State Lease 537 Tract 112 #4 Well was drilled in 2001 and completed as a productive gas well in and produced until December 2004.

IX.

That W&T presented evidence that the State Lease 536 #3 Well is located on a platform that is continuously monitored, and that there are danger signs posted at or near the well and on the platform. The well is monitored in person by visual inspection and by platform cameras, and field personnel visit the well daily.

X.

That the expert witness for W&T testified that the State Lease 537 #3 Well is located on a platform on which there is a locked gate and that there are danger signs posted at or near the well and on the platform, and the well is monitored in person by visual inspection, and field personnel visit the well daily.

XI.

That W&T asserts that W&T has been unable to plug and abandon the State Lease 537, Tract 112 #4 Well in compliance with the Board's Orders because W&T has been unable to secure the proper equipment such as a derrick barge.

FINDINGS OF FACT

XII.

That the State Lease 536 #3 Well, Permit No. 11009-OS-65-B, has future utility and the temporarily abandoned status is due to be extended. The temporarily abandoned status is due to be extended for the State Lease 537 #3 Well, Permit No. 11434-OS-78-B, because W&T plans to permanently plug and abandon said well when the Northwest Gulf Platform BA template is abandoned.

XIII.

That W&T has failed to plug and abandon the State Lease 537, Tract 112 #4 Well in violation of the two Board orders, Order No. 2022-52 and Order No. 2023-51. Moreover, W&T failed to remove the platform as ordered by the Board. W&T is due to act expeditiously to plug and abandon the State Lease 537, Tract 112 #4 Well and to remove the platform as previously ordered by the Board.

CONCLUSIONS OF LAW

XIV.

That like all operators, W&T is due to comply and respect Orders of the Board. The Board and the public are strongly concerned that offshore wells having no future utility should be plugged and abandoned. Therefore, strict compliance with the Board's Orders is expected by W&T, which is conducting operations in Alabama's offshore waters, an environmentally sensitive area.

XV.

That the Order of the Board as set forth hereinbelow will prevent waste, protect correlative rights, and protect the environment.

XVI.

That the W&T offshore wells are located in one of the most visible and environmentally sensitive areas in our State. The wells are located in Mobile Bay in State waters. The wells are located in the midst of one of our State's principal population centers. The entire area around Mobile Bay is the State's biggest source of tourism. The Port of Mobile is one of the largest and busiest in the U.S., and the shipping channel passes through these offshore wells. The wells, platforms, and equipment must be operated at the highest level of safety and maintenance in order to protect the public.

Based on the Findings of Fact and Conclusions of Law set forth hereinabove, **IT IS THEREFORE, HEREBY ORDERED, ADJUDGED AND DECREED** by the State Oil and Gas Board of Alabama that the Petition be **GRANTED** and the temporarily abandoned status for the State Lease 536 #3 Well, Permit No. 11009-OS-65-B, and the State Lease 537 #3 Well, Permit No. 11434-OS-78-B, is hereby extended for a period of one (1) year from the date of this Order, or until the next regularly scheduled meeting of the Board following the expiration of said one (1) year; and

IT IS FURTHER ORDERED that W&T Offshore, Inc. shall plug and abandon the State Lease 537, Tract 112 #4 Well by June 30, 2025, and remove the platform by December 31, 2025. W&T Offshore, Inc. shall report to the Board at the hearing of the Board May 8, 2025, on the status of plugging and abandonment operations.

ORDERED this 12th day of December, 2024.

STATE OIL AND GAS BOARD OF ALABAMA

BY: _____
Charles E. (Ward) Pearson, Chairman

BY: _____
Stephen P. French, Vice-Chairman

BY: _____
Jamie N. Ison, Member

ATTEST:

_____
Berry H. (Nick) Tew, Jr., Secretary

BEFORE THE STATE OIL AND GAS BOARD OF ALABAMA

PURSUANT TO A DECISION RENDERED FOLLOWING A REGULAR SESSION OF THE STATE OIL AND GAS BOARD OF ALABAMA ON DECEMBER 12, 2024, THE FOLLOWING ORDER IS HEREBY PROMULGATED:

IN RE: ORDER NO. 2024-49 **DOCKET NO. 9-17-24-08**

THIS CAUSE came on for hearing before the State Oil and Gas Board of Alabama (hereinafter referred to as "Board") on the petition of W&T OFFSHORE, INC., (hereinafter referred to as "W&T"), a foreign corporation authorized to do and doing business in the State of Alabama, requesting the Board to enter an order approving temporarily abandoned status for the State Lease 615 #1 Well, Permit No. 6109-OS-34-B, located in Tract 78, Baldwin County, Alabama, in the Bon Secour Bay Field, Lower Mobile Bay Area.

The Board, after receiving and considering the evidence, finds that notice of the hearing of said cause has been given in the manner and form and for the time required by law and the rules and regulations of this Board and that proofs of publication of notice and evidence of the service of required personal notice are on file with the Board and that the Board has full jurisdiction of this case; and the Board being fully informed and being fully advised in the premises further finds as follows:

I.

That on a Petition by Exxon Corporation, the Board established the Bon Secour Bay Field in Order No. 85-345, dated December 19, 1985.

II.

That W&T is the operator of the State Lease 615 #1 Well, Permit No. 6109-OS-34-B, located in Tract 78, in Baldwin County, Alabama, in the Bon Secour Bay Field, Lower Mobile Bay Area. Said well was previously operated by Exxon Mobil Corporation ("Exxon Mobil"), and upon Application for Change of Operator filed by W&T and Exxon Mobil, the Board on December 6, 2019, approved W&T as operator said well.

III.

That the State Lease 615 #1 Well was drilled on Tract 78 as a wildcat well in 1988 and completed as a productive Norphlet gas well. Upon Petition filed by Exxon Mobil, the Board by

Order No. 92-1 issued on December 13, 1991, amended Rule 1 of the Special Field Rules for the Bon Secour Bay Field to add Tract 78 to the field limits of said field.

IV.

That the Board further issued Order No. 92-3 on December 13, 1991, unitizing Bon Secour Bay Field, effective February 1, 1992.

V.

That the State Lease 615 #1 Well produced from November 1993 until 2023.

VI.

That W&T presented evidence that the State Lease 615 #1 Well is not currently producing and due to be repaired. W&T presented evidence that the well is leaking, specifically, W&T presented evidence that the tubing in the well parted. W&T set a temporary plug, and the plug is leaking.

VII.

That the Board in Order No. 2023-52 dated September 21, 2023, approved temporarily abandoned status for the State Lease 615 #1 Well.

FINDINGS OF FACT

VIII.

That the State Lease 615 #1 Well is due to be repaired. Therefore, W&T should either repair and produce the well or plug and abandon the well by December 31, 2025.

CONCLUSIONS OF LAW

IX.

That the Order of the Board as set forth hereinbelow will prevent waste, protect correlative rights, and protect the environment.

X.

That the W&T offshore wells are located in one of the most visible and environmentally sensitive areas in our State. The wells are located in Mobile Bay in State waters. The wells are located in the midst of one of our State's principal population centers. The entire area around Mobile Bay is the State's biggest source of tourism. The Port of Mobile is one of the largest and

busiest in the U.S., and the shipping channel passes through these offshore wells. The wells, platforms, and equipment must be operated at the highest level of safety and maintenance in order to protect the public.

Based on the Findings of Fact and Conclusions of Law set forth hereinabove, **IT IS THEREFORE, HEREBY ORDERED, ADJUDGED AND DECREED** by the State Oil and Gas Board of Alabama that subject to the **STIPULATION** set forth hereinbelow, the Petition is hereby **GRANTED,** and the temporarily abandoned status is approved for the State Lease 615 #1 Well. The Petition is granted with the stipulation that W&T either repair and produce the well or plug and abandon the State Lease 615 #1 Well by December 31, 2025.

ORDERED this 12th day of December, 2024.

STATE OIL AND GAS BOARD OF ALABAMA

BY: _____
Charles E. (Ward) Pearson, Chairman

BY: _____
Stephen P. French, Vice-Chairman

BY: _____
Jamie N. Ison, Member

ATTEST:

_____
Berry H. (Nick) Tew, Jr., Secretary

ALABAMA
OIL & GAS BOARD

EXHIBIT 21

Docket Nos. 2-19-26-01 through 2-19-26-05

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OIL & GAS BOARD
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LEGAL DIVISION

The Courier, The Islander
The Onlooker & The Baldwin Times
Office: 251-943-2151 • Legals: 251-345-6805

PROOF OF PUBLICATION
STATE OF ALABAMA • BALDWIN COUNTY

Before me, the undersigned authority in and for said County, in said State, personally appeared April M. Perry who, by me duly sworn, deposes and says that: she is the Legal Representative of the following newspaper listed below, a newspaper of GENERAL CIRCULATION, PUBLISHED and PRINTED in Baldwin County, Alabama, and that there was published in The Courier, The Islander, The Onlooker, & or The Baldwin Times in the issue/s of:

01/28/2026

a legal notice, a copy of which is hereto attached. The sum charged by the Newspaper for said publication does not exceed the lowest classified rate paid by commercial customers for an advertisement of similar size and frequency in the same newspaper(s) in which the public notice appeared.

There are no agreements between the Newspaper and the officer or attorney charged with the duty of placing the attached legal advertising notices whereby any advantage, gain or profit accrued to said officer or attorney.

x April M. Perry
April M. Perry, Legal Ad Representative

x Amber Kimbler
Amber Kimbler, Notary Public
Baldwin County, Alabama
My commission expires April 11, 2026

AMBER KIMBLER
My Commission Expires
April 11, 2026

Sworn and subscribed to on 01/28/2026

ALABAMA OIL & GAS BOARD
STATE OIL & GAS BOARD OF ALABAMA
Acct#: 1005060
Ad#: 365808
W&T Offshore, Inc.
Amount of Ad: $1029.76
Legal File# W&T Offshore

Exhibit No: 21
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Marcus Rogers
Received by: EP

STATE OIL & GAS
BOARD OF ALABAMA

The State Oil and Gas Board of Alabama will hold a hearing at 10:00 a.m. on Thursday, February 19, 2026 in the Board Room of the State Oil and Gas Board, Walter B. Jones Hall, University of Alabama Campus, 420 Hackberry Lane, Tuscaloosa, Alabama, to consider the following matters:

Docket No. 02-03-26-01

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with the following State Oil and Gas Board Orders:

(1) Order No. 2024-45 dated December 12, 2024, in which the State Oil and Gas Board ("Board") ordered W&T Offshore, Inc. to plug and abandon State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well and remove the associated platform by December 31, 2025;

(2) Order No. 2024-46 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 538, Tract 115, Well No. 3 by June 30, 2025* and remove the associated platform by December 31, 2025; and

(3) Order No. 2025-48 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 537 Tract 112 #4 Well by June 30, 2025, and remove the associated platform by December 31, 2025.

The State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well are located in Aloe Bay Field in Mobile County, Alabama. The State Lease 538, Tract 115, Well No. 3 is located in North Central Gulf Field in Baldwin County, Alabama. The State Lease 537 Tract 112 #4 Well is located in Northwest Gulf Field Mobile Area in Mobile County, Alabama.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board orders by failing to plug and abandon the specified wells and remove the specified offshore platforms in accordance with the referenced Orders.

Section 9-17-1 et seq. of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

*W&T Offshore, Inc. has partially plugged the State Lease 538, Tract 115, Well No. 3 Well.

Docket No. 02-03-26-02

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-3-.02 (3) of the State Oil and Gas Board of Alabama Administrative Code relating to Notification Subsequent to Occurrence of Activity for a Spill or Leak and Rule 400-2-8-.03 relating to Pollution Prevention and Control. Rule 400-2-8-.03, relating to Pollution Prevention and Control, provides inter alia that, "All spills or leakage of oil and liquid substances not approved for discharge shall be reported orally to the Supervisor or his representative within the following limits: . . . immediately, if spill or leakage is more than one (1) gallon in the aggregate. Within fifteen (15) days after reporting a spill or leakage, . . . Form OGB-27, Notification of Fire, Spill, Leak, or Blowout Incident Report, shall be filed with the Supervisor describing the location, size, and cause of such spill or leakage, action, and the effectiveness of removal and cleanup operations." Furthermore, the Rule requires that, "The operator shall immediately take the appropriate action to clean up spills and repair leaks. Additionally, the operator shall notify other appropriate governmental agencies of the incident."

The Board avers that the offshore operations of W&T Offshore, Inc. have resulted in multiple leaks and spills of substances not approved for discharge and that W&T Offshore, Inc. has failed to comply with the above-quoted Rule relating to Pollution Prevention and Control. The Board further avers that W&T Offshore, Inc. has failed to timely notify the Board concerning every such spill or leak. Further, the Board avers that W&T Offshore, Inc. failed to submit pertinent information to the Board such as the "Estimated Volume of Spill or Leak."

Prior to commencing oil and gas exploration in offshore waters, Alabama established a policy of "zero discharge" of any type into offshore waters.** This "zero discharge" policy remains in effect through the Board's current rules and regulations. The Board avers that the multiple leaks and spills into Mobile Bay and Alabama's offshore waters are in violation of Alabama's "zero discharge" policy and Rule 400-2-8-.03 of the State Oil and Gas Board of Alabama Administrative Code.

Cont. to Pg 2

STATE OIL & GAS BOARD OF ALABAMA
Acct#: 1005060
Ad#: 365808----- PAGE 2
W&T Offshore, Inc.
Amount of Ad: $1029.76
Legal File# W&T Offshore

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines for violations of the Board's Rules and Regulations. Furthermore, the Board may issue such other sanctions that the Board deems appropriate, such as ordering cessation of certain operations, wells or related facilities to be plugged, shut-in, or removed, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, and/or collecting proceeds of the surety bond. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

** U.S. Department of the Interior, "History of Coastal Alabama Natural Gas Exploration and Development", "Zero Discharge Policy—Settlement Agreement", March 1999. Page 5-6; Statement of James Helis, Environment and Regulatory Affairs manager at Public Hearing, U.S. Corps of Engineers and Alabama Water Improvement Commission, April 25, 1979; Statement, Kenneth F. Keller, President and General Manager, Mobil Oil Exploration & Producing Southeast Inc. "no discharge" obligation.

Docket No. 02-03-26-03

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Order No. 2024-49 dated December 12, 2024, in which the State Oil and Gas Board of Alabama ("Board") ordered W&T Offshore, Inc. to repair and produce or plug and abandon the State Lease 615 #1 Well by December 31, 2025.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board order by failing to repair and produce or plug and abandon the State Lease 615 #1 Well. The State Lease 615 #1 Well is located in Tract 78, Bon Secour Bay Field, Lower Mobile Bay Area, Baldwin County, Alabama.

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

Docket No. 02-03-26-04

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-4-.14 (1) (b) of the State Oil and Gas Board of Alabama Administrative Code relating to Temporary Abandoned Status for Offshore Wells. Rule 400-2-4-.14 (1) (b) provides inter alia that,

Any well which is approved for temporary abandonment shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for sections (f) and (j). When casing extends above the waters floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200) feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the waters floor. The cement plug shall be verified by tagging and pressure testing.

The Board avers that W&T Offshore, Inc. has failed to set the plugs and/or otherwise conduct the activities required by Rule 400-2-4-.14 (1) (b) and further avers that, because of the foregoing, the following wells operated by W&T Offshore, Inc. are temporarily abandoned in a non-compliant manner in context with the above-cited rule:

Well Name Permit Field
State Lease 538 #1
4266-OS-23
North Central Gulf -
Mobile Area

State Lease 348 (Tract 77)
Well #3
9597-OS-43-B-1
Lower Mobile Bay -
Mary Ann

State Lease 536, No. 3
11009-OS-65-B
Northwest Gulf -
Mobile Area

State Lease 536, Tract 111,
Well #4
11293-OS-68-B
South Pelican Island

State Lease 537 No. 3
11434-OS-78-B
Northwest Gulf -
Mobile Area

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

Docket No. 02-03-26-05

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show Cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Rule 400-2-6-.09 (4) of the State Oil and Gas Board of Alabama Administrative Code relating to Recertification of Structural Integrity of Platforms and Fixed Structures. Rule 400-2-6-.09 (4) states:

Recertification of Structural Integrity. Periodic inspections and proper maintenance shall be performed to assure the structural integrity of each platform or fixed structure. Unless otherwise approved by the Supervisor, the structural integrity of each platform or fixed structure shall be recertified every five years. Recertifications of platforms and fixed structures shall be submitted to the Supervisor and shall include a written report of inspections performed in accordance with API RP 2A, and subsequent revisions thereof, and the following certification signed and dated with the title of the company representative: "(Operator) certifies that (platform or structure and identification number) has been inspected in accordance with API RP 2A, and subsequent revisions thereof, and the structural integrity of the (platform or fixed structure) has been verified by a registered professional engineer having a specialty in structural engineering or registered civil engineer specializing in structural design.

The Board avers that W&T Offshore, Inc. has failed to submit the required Recertifications for the following offshore platforms: (1) offshore platforms MB-112BQ, MB-112BA, MB-112BD, and MB-112BE located in Northwest Gulf Field, Mobile County, Alabama; (2) offshore platforms MB-113, MB-113JA, MB-113JB, MB-113JC, MB-113JD/JF, and MB-113JE located in Fairway Field, Mobile County, Alabama; and (3) offshore platform MB-115CD located in North Central Gulf Field, Baldwin and Mobile Counties, Alabama. The Board has communicated multiple times with W&T Offshore, Inc. about this serious deficiency, but W&T Offshore, Inc. has nevertheless failed to complete or perform the necessary Recertifications. Most recently, the Board again communicated and inquired about these continuing deficiencies by letter to W&T Offshore, Inc. dated August 27, 2025, and W&T Offshore, Inc. has altogether ignored and failed to respond to such Recertification deficiency notice and inquiry. The Board considers such Recertifications to be integral to protecting the health, safety, welfare, and environment of the Mobile Bay area.

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

The public is further advised that, pursuant to this hearing, the applicable provisions of the Code of Alabama (1975) and the State Oil and Gas Board of Alabama Administrative Code, the Board will enter such Order or Orders as in its judgment may be necessary in accordance with the evidence submitted and accepted. Hearings of the State Oil and Gas Board are public hearings, and members of the public are invited to attend and present their position concerning petitions. Requests to continue or oppose a petition should be received by the Board at least two (2) days prior to the hearing. The public should be aware that a petition may be set for hearing on the first day or second day of the hearing or may be continued to another hearing at a later date. We suggest that, prior to the hearing, interested parties contact the Board to determine the status of a particular petition. For additional information, you may contact Marvin Rogers, General Counsel for State Oil and Gas Board, P. O. Box 869999, Tuscaloosa, Alabama 35486-6999, Telephone Number (205) 247-3680 or by email at petitions@ogb.state.al.us.

January 28, 2026

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AFFIDAVIT

State of Alabama - MOBILE County

STATE OIL AND GAS BOARD OF ALABAMA RECORDS & MANAGEMENT
PO BOX 869999
TUSCALOOSA AL, 35486

Before me, a notary public in and for the county and state above listed, personally appeared **WILLIE GRAY** (PUBLISHER), who, by me, duly sworn, deposes and says that: My name is **WILLIE GRAY**, I am the Publisher of the Call News ("Newspaper"). The Newspaper is printed in the English language, has a general circulation and its principal editorial office in the county in which it is published, and has been mailed under a publication class mailing privilege of the United States Post Office Department for the Post Office of Citronelle, AL, where it is published at least 51 consecutive weeks a year.

I further certify that the attached notice is a true and correct copy of the notice published in said Newspaper.

Public Notice LEGAL

The Newspaper published the attached legal notice in the issues of
1/28/2026

The sum charged for these publications was $489.30 per week for 1.00 consecutive weeks, a total cost of $489.30.

The sum charged by the newspaper for said publication does not exceed the lowest classified rate paid by commercial customers for an advertisement of similar size and frequency in the same newspaper(s) in which the public notice appeared.

There are no agreements between the newspaper and the officer or attorney charged with the duty of placing the attached legal advertising notices whereby any advantage, gain or profit accrued to said officer or attorney.

_____ (Publisher)

Sworn to and subscribed before me on this 28th day of January, 2026.

Notary Public _____

My Commission Expires 2/10/2027

Ad ID 81221
Paper copy
jstclair@ogb.state.al.us

RHONDA GRAY NOTARY PUBLIC Expires: February 10, 2027 ALABAMA STATE AT LARGE

OIL & GAS BOARD Received FEB 05 2026 LEGAL DIVISION

STATE OIL & GAS BOARD OF ALABAMA

The State Oil and Gas Board of Alabama will hold a hearing at 10:00 a.m. on Thursday, February 19, 2026 in the Board Room of the State Oil and Gas Board, Walter B. Jones Hall, University of Alabama Campus, 420 Hackberry Lane, Tuscaloosa, Alabama, to consider the following motions:

Docket No. 02-03-26-01

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with the following State Oil and Gas Board Orders:

(1) Order No. 2024-45 dated December 12, 2024, in which the State Oil and Gas Board ("Board") ordered W&T Offshore, Inc. to plug and abandon State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well and remove the associated platform by December 31, 2025;

(2) Order No. 2024-46 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 538, Tract 115, Well No. 3 by June 30, 2025* and remove the associated platform by December 31, 2025; and

(3) Order No. 2025-48 dated December 12, 2024, in which the Board ordered W&T Offshore, Inc. to plug and abandon the State Lease 537 Tract 112 #4 Well by June 30, 2025, and remove the associated platform by December 31, 2025.

The State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well are located in Aloe Bay Field in Mobile County, Alabama. The State Lease 538, Tract 115, Well No. 3 is located in North Central Gulf Field in Baldwin County, Alabama. The State Lease 537 Tract 112 #4 Well is located in Northwest Gulf Field – Mobile Area in Mobile County, Alabama.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board orders by failing to plug and abandon the specified wells and remove the specified offshore platforms in accordance with the referenced Orders.

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule

400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

*W&T Offshore, Inc. has partially plugged the State Lease 538, Tract 115, Well No. 3 Well.

Docket No. 02-03-26-02

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-3-.02 (3) of the State Oil and Gas Board of Alabama Administrative Code relating to Notification Subsequent to Occurrence of Activity for a Spill or Leak and Rule 400-2-8-.03 relating to Pollution Prevention and Control. Rule 400-2-8-.03, relating to Pollution Prevention and Control, provides inter alia that, "All spills or leakage of oil and liquid substances not approved for discharge shall be reported orally to the Supervisor or his representative within the following limits: . . . immediately, if spill or leakage is more than one (1) gallon in the aggregate. Within fifteen (15) days after reporting a spill or leakage, . . . Form OGB-27, Notification of Fire, Spill, Leak, or Blowout Incident Report, shall be filed with the Supervisor describing the location, size, and cause of such spill or leakage, action, and the effectiveness of removal and cleanup operations." Furthermore, the Rule requires that, "The operator shall immediately take the appropriate action to clean up spills and repair leaks. Additionally, the operator shall notify other appropriate governmental agencies of the incident."

The Board avers that the offshore operations of W&T Offshore, Inc. have resulted in multiple leaks and spills of substances not approved for discharge and that W&T Offshore, Inc. has failed to comply with the above-quoted Rule relating to Pollution Prevention and Control. The Board further avers that W&T Offshore, Inc. has failed to timely notify the Board concerning every such spill or leak. Further, the Board avers that W&T Offshore, Inc. failed to submit pertinent information to the Board such as the "Estimated Volume of Spill or Leak."

Prior to commencing oil and gas exploration in offshore waters, Alabama established a policy of "zero discharge" of any type into offshore waters.** This "zero discharge" policy remains in effect through the Board's current rules and regulations. The Board avers

that the multiple leaks and spills into Mobile Bay and Alabama's offshore waters are in violation of Alabama's "zero discharge" policy and Rule 400-2-8-.03 of the State Oil and Gas Board of Alabama Administrative Code.

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines for violations of the Board's Rules and Regulations. Furthermore, the Board may issue such other sanctions that the Board deems appropriate, such as ordering cessation of certain operations, wells or related facilities to be plugged, shut-in, or removed, increasing the amount of the surety bond in accordance with Rule 400-2 -2-.03, and/or collecting proceeds of the surety bond. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

** U.S. Department of the Interior, "History of Coastal Alabama Natural Gas Exploration and Development", "Zero Discharge Policy—Settlement Agreement", March 1999. Page 5-6; Statement of James Helis, Environment and Regulatory Affairs manager at Public Hearing, U.S. Corps of Engineers and Alabama Water Improvement Commission, April 25, 1979; Statement, Kenneth F. Keller, President and General Manager, Mobil Oil Exploration & Producing Southeast Inc. "no discharge" obligation.

Docket No. 02-03-26-03

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Order No. 2024-49 dated December 12, 2024, in which the State Oil and Gas Board of Alabama ("Board") ordered W&T Offshore, Inc. to repair and produce or plug and abandon the State Lease 615 #1 Well by December 31, 2025.

The Board avers that W&T Offshore, Inc. has violated the above-referenced Board order by failing to repair and produce or plug and abandon the State Lease 615 #1 Well. The State Lease 615 #1 Well is located in Tract 78, Bon Secour Bay Field, Lower Mobile Bay Area, Baldwin County, Alabama.

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or

related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).
Docket No. 02-03-26-04

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show cause why the company should not be found in violation of Rule 400-2-4-.14 (1) (b) of the State Oil and Gas Board of Alabama Administrative Code relating to Temporary Abandoned Status for Offshore Wells. Rule 400-2-4-.14 (1) (b) provides inter alia that,
Any well which is approved for temporary abandonment shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for sections (f) and (j). When casing extends above the waters floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200) feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the waters floor. The cement plug shall be verified by tagging and pressure testing.
The Board avers that W&T Offshore, Inc. has failed to set the plugs and/or otherwise conduct the activities required by Rule 400-2-4-.14 (1) (b) and further avers that, because of the foregoing, the following wells operated by W&T Offshore, Inc. are temporarily abandoned in a non-compliant manner in context with the above-cited rule:
Well Name
Permit
Field
State Lease 538 #1 4266-OS-23 North Central Gulf - Mobile Area
State Lease 348 (Tract 77) Well #3 9597-OS-43-B-1 Lower Mobile Bay - Mary Ann
State Lease 536, No. 3 11009-OS-65-B Northwest Gulf - Mobile Area
State Lease 536, Tract 111, Well #4 11293-OS-68-B South Pelican Island
State Lease 537 No. 3 11434-OS-78-B Northwest Gulf - Mobile Area
Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or

Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

Docket No. 02-03-26-05

MOTION BY THE STATE OIL AND GAS BOARD OF ALABAMA for W&T Offshore, Inc. to show Cause why W&T Offshore, Inc. should not be fined and/or sanctioned for its violation and failure to timely comply with Rule 400-2-6-.09 (4) of the State Oil and Gas Board of Alabama Administrative Code relating to Recertification of Structural Integrity of Platforms and Fixed Structures. Rule 400-2-6-.09 (4) states:

Recertification of Structural Integrity. Periodic inspections and proper maintenance shall be performed to assure the structural integrity of each platform or fixed structure. Unless otherwise approved by the Supervisor, the structural integrity of each platform or fixed structure shall be recertified every five years. Recertifications of platforms and fixed structures shall be submitted to the Supervisor and shall include a written report of inspections performed in accordance with API RP 2A, and subsequent revisions thereof, and the following certification signed and dated with the title of the company representative: "(Operator) certifies that (platform or structure and identification number) has been inspected in accordance with API RP 2A, and subsequent revisions thereof, and the structural integrity of the (platform or fixed structure) has been verified by a registered professional engineer having a specialty in structural engineering or registered civil engineer specializing in structural design.

The Board avers that W&T Offshore, Inc. has failed to submit the required Recertifications for the following offshore platforms: (1) offshore platforms MB-112BQ, MB-112BA, MB-112BD, and MB-112BE located in Northwest Gulf Field, Mobile County, Alabama; (2) offshore platforms MB-113, MB-113JA, MB -113JB, MB-113JC, MB-113JD/JF, and MB-113JE located in Fairway Field, Mobile County, Alabama; and (3) offshore platform MB-115CD located in North Central Gulf Field, Baldwin and Mobile Counties, Alabama. The Board has communicated multiple times with

W&T Offshore, Inc. about this serious deficiency, but W&T Offshore, Inc. has nevertheless failed to complete or perform the necessary Recertifications. Most recently, the Board again communicated and inquired about these continuing deficiencies by letter to W&T Offshore, Inc. dated August 27, 2025, and W&T Offshore, Inc. has altogether ignored and failed to respond to such Recertification deficiency notice and inquiry. The Board considers such Recertifications to be integral to protecting the health, safety, welfare, and environment of the Mobile Bay area.

Section 9-17-1 et seq, of the Code of Alabama (1975) authorizes the Board to issue fines and to enter other sanctions in the event that any operator or party violates the Board's Rules and Regulations or Orders. Furthermore, the Board may issue such sanctions that the Board deems appropriate, such as collecting proceeds of the surety bond, increasing the amount of the surety bond in accordance with Rule 400-2-2-.03, ordering a well or related facilities to be plugged, shut-in, or removed, and/or withdrawing certification and approval of a party to act as an operator in the State of Alabama. The jurisdiction and authority of the Board is set forth in Section 9-17-1 et seq. of the Code of Alabama (1975).

The public is further advised that, pursuant to this hearing, the applicable provisions of the Code of Alabama (1975) and the State Oil and Gas Board of Alabama Administrative Code, the Board will enter such Order or Orders as in its judgment may be necessary in accordance with the evidence submitted and accepted. Hearings of the State Oil and Gas Board are public hearings, and members of the public are invited to attend and present their position concerning petitions. Requests to continue or oppose a petition should be received by the Board at least two (2) days prior to the hearing. The public should be aware that a petition may be set for hearing on the first day or second day of the hearing or may be continued to another hearing at a later date. We suggest that, prior to the hearing, interested parties contact the Board to determine the status of a particular petition. For additional information, you may contact Marvin Rogers, General Counsel for State

ALABAMA
OIL & GAS BOARD

EXHIBIT 22

Docket Nos. 2-19-26-01 through 2-19-26-05

Prepared by Marvin Rogers

ALABAMA OIL & GAS BOARD

Exhibit No: 22
Petitioner: AOGB
Item No: 1-5 Date: 2/19/26
Witness:
Received by: MR

W&T Offshore Provides Updates on Recent Developments

HOUSTON, Jan. 08, 2025 (GLOBE NEWSWIRE) -- W&T Offshore, Inc. (NYSE: WTI) ("W&T" or the "Company") today provided operational and financial updates on recent developments.

- Recently signed a purchase and sale agreement ("PSA") to sell a non-core interest in Garden Banks Blocks 385 and 386 which included latest net production of approximately 195 barrels of oil equivalent per day ("Boe/d") (72% oil) for $12.3 million;
- Announces that the West Delta 73 field, which W&T acquired in January 2024, is expected to come back online by mid-second quarter 2025;
- Announces that the Main Pass 108 and 98 fields, which have been shut in since June 2024, are expected to return to production by early second quarter of 2025.
  - Net production at these fields averaged a combined 6.1 million cubic feet of natural gas equivalent per day ("MMcfe/d") (78% gas) in June 2024 prior to being shut-in due to third-party operator related bankruptcy matters;
- Scheduled to receive a $58.5 million cash insurance settlement payment in January 2025 related to a casualty loss event at its Mobile Bay 78-1 well in 2023; and
- Does not expect any impact on ongoing operations from the Presidential ban announced on January 6, 2025 on new offshore oil and gas drilling.

Tracy W. Krohn, W&T's Chairman and Chief Executive Officer, commented, "We believe that these recent developments will have a positive impact to our balance sheet and provide upside as we enter 2025. The sale of our non-core interests in Garden Banks 385 and 386 at over $60,000 per flowing barrel is highly accretive to W&T. This further demonstrates the value of our assets and our ability to divest our properties at attractive multiples. We are pleased that we have a pathway to bring the West Delta 73 field and the Main Pass 108 and 98 fields back online and believe these returns to production will be a strong catalyst in the second half of 2025. We remain committed to executing our strategic vision focused on free cash flow generation, maintaining solid production and maximizing margins and believe that our proven and successful strategy should help us continue to produce solid results in 2025."

Additional Information

ALABAMA
OIL & GAS BOARD

EXHIBIT 23

Docket Nos. 2-19-26-01 through 2-19-26-05

Exhibit 23 is a settlement and release agreement between W&T Offshore, Inc. and an insurance company related to the State Lease 615 #1 Well. The Board has determined the exhibit to be confidential. The original exhibit is located in the Board's confidential exhibit file.

Prepared by Marvin Rogers

MR

W&T Offshore

EXHIBIT 1

Docket No. 02-19-26-01

Prepared by Kendra Sullivan

ALABAMA OIL & GAS BOARD

Exhibit No: W&T 1

Petitioner: Board

Item No: 1 Date: 2-19-26

Witness: Kendra Sullivan

Received by: SP

W&T Offshore Narrative Response to Motion by the State Oil and Gas Board of Alabama

Docket No. 02-19-2601

Regarding Order No. 2024-45 dated 12/12/2024 to plug and abandon State Lease 701 #2 Well and the State Lease 701, Tract 75 #1 Well (Aloe Bay) and remove the associated platform by December 31, 2025:

W&T Offshore continuously evaluates all available opportunities to realize potential value in our assets, while also continuously seeking new technical solutions to open new opportunities for ourselves and for our royalty interest owners. For example, the heavy interest and recent leasing activity offshore by companies such as Exxon and Talos Energy for the purpose of Carbon Capture and Sequestration (CCS) could lead to new opportunities for existing wellbores in offshore waters. Another such example is the strong interest in geothermal power production evidenced by significant investments from Google, Breakthrough Energy Investors, and Controlled Thermal Resources. For the wells and platform in Aloe Bay, W&T Offshore has been performing diligence to determine the feasibility of several of these opportunities, including but not limited to geothermal power generation and Carbon Capture and Sequestration (CCS).

Our research has indicated that the Mobile Bay wells drilled into the Norphlet formation have an incredible post gas production potential for geothermal power production. The approximate 400 degree Fahrenheit bottom hole temperature and proximity to the shore-based power grid provide an opportunity to the State of Alabama for additional revenue from these wells which would likely not be financially viable if the drilling of new wells was required. W&T Offshore has presented both the Oil and Gas Board (OGB) staff and the Alabama Department of Conservation and Natural Resources (DCNR) with an initial proposal to explore geothermal power production at several locations in state waters including the Aloe Bay facility utilizing the State Lease 701, Tract 75 #1 Well. W&T Offshore contracted with Gradient Geothermal to do thermal modeling, power generation outcomes, equipment layout, and economic analysis specific to the 75-1 well. Additionally, we have contracted with Chapman Consulting to structurally model the equipment layout given the weights and dimensions of the proposed power generation equipment for the existing Aloe Bay platform.

To effectuate the conversion from gas production to geothermal power generation, the 75-1 well will be "zonally isolated" from the Norphlet formation by squeezing the perforations. The Aloe Bay platform's gas production equipment will be removed to make room for the geothermal power generation equipment.

W&T Offshore initially presented the idea of geothermal energy production and other alternative uses in a meeting with DCNR staff on December 6, 2024. We followed up by discussing it with the OGB at the December 12, 2024 hearing, indicating that we were exploring options for either extending lease or getting some other kind of agreement with DCNR to allow for the alternative use of the wells and the platform.

The OGB indicated that because State Lease 701 had expired and there was no finalized lease in place to replace it, the OGB could not grant temporarily abandoned status to the well at that time. At that time, W&T Offshore believed it could determine whether geothermal was a viable option and move forward with a lease with DCNR within twelve (12) months and indicated so at the December 2024 hearing.

After multiple meetings with DCNR staff and one meeting with the Conservation Commissioner, DCNR determined that what should be negotiated was instead a "research permit" to allow the continued use of the wells and platform and the evaluation of geothermal energy production. Throughout 2025, W&T Offshore presented our geothermal power generation plans to the OGB and DCNR staff. After an in-depth meeting with DCNR staff on April 14, 2025, DCNR expressed interest in moving forward with a pilot project. After a more in-depth meeting with DCNR to go over specific details of the methods of geothermal energy production being proposed on July 8, 2025, DCNR confirmed its interest in granting a research permit to allow us to test our concept, confirm the thermal modeling, and measure the power generated. Conservation Commissioner Christopher Blankenship wrote a letter to the OGB on August 4, 2025, confirming that interest. We are currently negotiating the language of the research permit with DCNR which will allow us to operate the well and platform as an experimental geothermal well in lieu of an active oil and gas lease.

W&T Offshore met again with OGB staff on April 30, 2025, to discuss the status of our research into geothermal options. W&T Offshore also heard concerns from OGB staff that they had no legal authority to allow the conversion of the wells in question to geothermal energy production or other alternative uses. Consequently, W&T Offshore began work in approximately April 2025 on proposed legislation to allow just that. W&T Offshore drafted and proposed legislation which was introduced by Senator Greg Albritton at the very next opportunity, which was the current legislative session, which would permit the conversion of wells such as the 75-1 to geothermal power generation or certain other alternative uses in the State of Alabama and grant the OGB jurisdiction over such conversions. This legislation (SB174) passed in the Senate on February 3, 2026, by a vote of 33 to 1, was reported out of committee in the House on February 11, and is currently pending debate on the House floor.

W&T Offshore stands ready to proceed with a pilot project for geothermal energy production at the 75-1 well should the legislation pass, should DCNR agree to the issuance of a research permit on commercially reasonable terms, and should the OGB grant authorization to proceed under the newly-passed legislation.

Regarding Order No. 2024-46 dated 12/12/2024 to plug and abandon the State Lease 538, Tract 115, Well No. 3 (North Central Gulf) by June 30, 2025 and remove the associated platform by December 31, 2025:

State Lease 538 Tract 115 remains an active lease. During abandonment operations of SL 538, Tract 115, Well No. 3 (115-3) sustained casing pressure was observed. W&T, being aware of unsuccessful attempts by ExxonMobil to remediate recurring casing pressure in plugged

Mobile Bay wells using standard methods and materials, employed a newer plug type to reduce the risk of failed plug for this well. The plugging and abandonment operations for Well 115-3 commenced in 2024 but had to be paused due to several complications, including multiple hurricane evacuations, operational challenges, and resource availability (as reported to the OGB on several occasions, including during the December 2024 hearing).

Upon resource availability and cooperating weather conditions, the plugging and abandonment operations resumed on Well 115-3 during the decommissioning campaign of 2025. W&T employed a BiSn (bismuth-tin) plug, which expands as it solidifies, to complete the plugging of the well. Because of ExxonMobil's history of unsuccessful attempts to remediate casing pressure in plugged Mobile Bay wells, W&T Offshore told the Board in December 2024 that it wanted to monitor the casings for a period of nine months following plugging and abandonment operations were completed to make sure there were no leaks. During that December hearing, W&T Offshore indicated that the well's casings and wellhead would then be removed in 2026. Consequently, the well's casings and wellhead were left in place in 2025 to facilitate pressure monitoring and subsequent re-entry, should it be necessary, as W&T Offshore had indicated it intended to do during the December 2024 hearing. Once well casings are cut and the wellhead is removed, remedial work to address a recurring leak becomes infinitely more difficult. Thus far, monitoring has confirmed the success of the BiSn plug as indicated by the lack of returning casing pressure. These results have led to high confidence in the success of the well-plugging operations. The removal of the platform, along with the well casing strings, are included in the 2026 budget and scheduled to occur during the 2026 Decommissioning Campaign, pending availability of resources and fair weather, with forecasted completion by December 31, 2026.

Regarding Order No. 2024-48 dated 12/12/2024 to plug and abandon the State Lease 537 Tract 112 #4 Well by June 30, 2025 and remove the associated platform by December 31, 2025:

State Lease 537, Tract 112 remains an active lease. The SL 537, Tract 112 #4 Well (112-4) was scheduled for plugging and abandonment operations during the 2024 decommissioning campaign. However, significant delays in plugging and abandonment operations at State Lease 538, Tract 115, Well No. 3 (115-3) resulted in suspension of the 2024 Decommissioning Campaign (as previously reported to the OGB at the December 2024 hearing).

While awaiting resumption of plugging and abandonment activities during the 2025 Decommissioning Campaign, W&T Offshore continuously explored opportunities for future utility of the 112-4 well. During 2025, W&T Offshore successfully deployed advancements in the Coil Tubing Clean Out (CTCO) program. Following previous failures of CTCO operations in 2023, which included three (3) well interventions at an expense of $12 million, W&T Offshore worked with vendors to develop new equipment and techniques to perform CTCO on Norphlet wells that mitigated the characteristics typical of current conditions found in Mobile Bay – low bottom-hole pressure, saline formation waters, and corrosive sour gas. In 2025, W&T Offshore spent $1.7 million on a CTCO Project at MB 64-2 using newly-developed, NACE-compliant downhole tooling which successfully returned the MB 64-2 well to production, resulting in an

uplift in production of 8.9 MMCFPD. This new capacity to perform CTCO on scale-plugged wells provides a new opportunity to perform remediation on shut-in wells like the 112-4.

W&T completed a reservoir simulation study of east dune pod of the Mary Ann Field. The initial 16-month effort started in October 2022. The reservoir model was built based on the current geologic model and "tuned" using historical production through 2023. The model was "proven" by its favorable comparison of the model's forecast to actual production from 2023 through 2025. The study found that there is communication between certain dunes and suggested a potential benefit of production enhancement through stimulation. W&T intends to extend the scope of the Mary Ann study into the Northwest Gulf Field's 112 dune pod – with an anticipated completion of that study in November 2026.

The results of the study will evaluate the feasibility of the 112-4 Well for several future use opportunities: (1) performing a CTCO to return the well to production (RTP); (2) relative benefits of hydraulic stimulation with or without scale inhibition and/or sand consolidation; (3) conversion to closed-cycle geothermal power generation above the Norphlet – similar to the Aloe Bay pilot project; (4) conversion to Cabon Capture and Sequestration injection well; (5) water injection into the Norphlet for pressure maintenance thereby enhancing gas recovery at the other NWG producers and a later-life opportunity for open-cycle geothermal power generation following water breakthrough at one or more offset producers. We are optimistic that the 112-4 well can be returned to production.

These new well intervention tools and techniques for performing CTCO combined with a proven reservoir model will shape the future utility of these existing shut-in wells.

Repairs have been made to the platform and it is (and will continue to be) maintained in a safe condition.

W&T Offshore

EXHIBIT 1

Docket No. 02-19-26-02

Prepared by Kendra Sullivan

ALABAMA OIL & GAS BOARD

Exhibit No: W&T 1

Petitioner: Board

Item No: 2 Date: 2-19-26

Witness: Kendra Sullivan/Dean

Received by: ee

W&T Offshore Narrative Response to Motion by the State Oil and Gas Board of Alabama

Docket No. 02-19-2026

Regarding Rule 400-2-3-.02(3) – Notification Subsequent to Occurrence of Activity for a Spill or Leak and Rule 400-2-8-.03 – Pollution Prevention and Control:

W&T Offshore contends that there have been no violations of the Zero Discharge Policy established by Rule 400-2-8-.03 in Mobile Bay during its operatorship. The production facilities owned by W&T Offshore were originally designed in such a manner that no waste discharges are made into State Waters, in accordance with the State's Zero Discharge Policy. W&T Offshore has maintained this system design and operates it accordingly to this date. A Zero Discharge Policy addresses the design and operation of facilities and prohibits the intentional discharge of waste. Pipeline leaks are, by their very nature, not a design feature, nor are they intentional. Operations do not continue once a leak is detected and confirmed, and operations do not resume until repairs are completed.

In 2025, W&T Offshore experienced a leak in the produced water pipeline that routes produced water from MB 112 B to shore. Per industry standards, W&T Offshore installed a clamp to repair the leak. However, during subsequent testing for return to service, multiple additional leaks developed. At that time, all field operations were analyzed for alternate pipeline routes with sufficient capacity to safely move produced water to shore, and use of the subject pipeline ceased. The repairs to the pipeline were continued to prevent any further leakage; however, usage of the pipeline did not and has not resumed. Production has been supported through the use of alternate produced water transport routes since that time. W&T Offshore continues to explore several near- and long-term solutions to improve operational considerations (pigging) of produced water routes to the onshore treatment facility (OTF).

It is important to note that W&T Offshore designates this pipeline as a "produced water" pipeline, per industry standards, in the same manner and for the same reasons as the previous owner. Recent sampling confirmed that the saltwater transported in the produced water pipelines of Mobile Bay operations contains anticipated constituents typically found in water produced during oil and gas extraction. While these constituents comprise less than 0.3% by volume of the saltwater flowing in these pipelines, they remain present in sufficient quantities to support the continued operation of these assets as designed, without discharge to the environment. W&T Offshore intends to continue operating these assets in a zero discharge manner by transporting the produced water to shore via pipelines for injection into disposal wells.

With regard to required leak reporting, Rule 400-2-3-.02(3)(f) requires that an operator notify the Supervisor after any spill or leak, and refers, generally, to Rule 400-2-8-.03 regarding Pollution Prevention and Control. W&T Offshore has made timely verbal notifications to Oil and Gas Board (OGB) staff and other regulatory agencies as required by Rule 400-2-8-.03 for every pipeline leak. W&T Offshore also made repairs to any leaking lines in an expeditious and safe manner. The Board contention that W&T Offshore failed to timely respond or to notify OGB staff of the spills or leaks is not correct. Upon confirmation or even assumption of a leak, W&T Offshore staff notified OGB Staff within hours in accordance with the oral notification provisions of Rule 400-2-8-.03(7)(b)(1) and kept staff updated on repairs, timing, and engineering calculations for spill estimations. In hindsight, however, W&T Offshore did not file completed Form OGB-27

Reports on time where required by Rule 400-2-8-.03(7)(b)(1)(ii) where spills were in excess of one gallon and will make sure to submit such reports within the required 15-day period in the future. The delays in reporting have been the result of the time required to prepare documentation, including specifications of the clamp utilized, pipeline repair procedures, drawings, line location maps, and ***engineering calculations of the spill amounts***. W&T Offshore has endeavored to utilize engineering calculations to more accurately estimate spill volumes, which constitutes the most significant delay in providing complete OGB-27 Reports.

In order to mitigate the impact of engineering calculations on report timing, W&T Offshore proposes to file the OGB-27 Reports within the 15-day time frame with estimated spill volume depicted as "pending" until receipt of engineering review. W&T Offshore will then update the form with the volume and resubmit as an amendment to the original form.

W&T Offshore

EXHIBIT 1

Docket No. 02-19-26-03

Prepared by Kendra Sullivan

Exhibit No: W&T 1

Petitioner: Board

Item No: 3 Date: 2-19-26

Witness: Kendra Sullivan/Dean

Received by: EP

W&T Offshore Narrative Response to Motion by the State Oil and Gas Board of Alabama

Docket No. 02-19-26-03

Regarding requiring W&T Offshore to repair and produce or plug and abandon State Lease 615 #1 Well (Bon Secour Bay) by December 31, 2025:

The State Lease 615 #1 Well is located in Tract 78, Bon Secour Field, Lower Mobile Bay Area, and is sometimes referred to "MB 63 A/B" or the "78-1 Well." The well is on an active lease and W&T Offshore has recently determined that the well has future utility.

While W&T Offshore was not able to produce the well before the end of 2025 as the Board had ordered, we were diligently working to explore options to either place the well back into production or provide future utility. W&T Offshore recently completed a reservoir simulation study of the Mary Ann Field. The initial 16-month effort began in October 2022. The reservoir model was built based on the current geologic model and "tuned" using historical production through 2023. The model was "proven" by its favorable comparison of the model's forecast to actual production from 2023 through 2025. The study found that there is communication between certain dunes and suggested a potential benefit of production enhancement through stimulation. W&T Offshore intends to extend the scope of the study into the Bon Secour Bay Field after completing the reservoir simulation effort on Northwest Gulf's 111 dune pod. The anticipated completion of the Bon Secour Bay study is April 2027. Similar to the Aloe Bay study, the results of the Bon Secour Bay study will evaluate the feasibility of the State Lease 615 #1 Well for several applications: (1) performing a CTCO to return the well to production (RTP); (2) hydraulic stimulation with or without scale inhibition and/or sand consolidation; (3) conversion to geothermal power generation; (4) conversion to Cabon Capture and Sequestration injection well; and (5) water injection for pressure maintenance to enhance gas recovery at the other NWG producers and longer-term open-cycle geothermal after water breakthrough.

The well is safe in its present condition. Cement placed in the tubing/casing annulus at 14,000 feet isolates the well's production casing above the cement from flow from below. The Cotton Valley formation continues to crossflow formation water into the deeper depleted Norphlet formation preventing sour gas from entering the well. A pump-through plug set in the tubing allows additional dilution water to be pumped from surface into the tubing while providing requisite isolation from below. Continuous remote monitoring confirms that the well remains on a vacuum within tubing or casing and weekly in-person visits confirm the remote observations.

The upcoming reservoir study along with observations of the offset producers is needed to determine the potential enhanced recovery benefit of accelerated pressure maintenance.

W&T Offshore

EXHIBIT 1

Docket No. 02-19-26-04

Prepared by Kendra Sullivan



ALABAMA OIL & GAS BOARD

Exhibit No: W+T 1

Petitioner: Board

Item No: 4 Date: 2-19-26

Witness: Kendra Sullivan

Received by: EP

W&T Offshore Narrative Recitation re Motion by the State Oil and Gas Board of Alabama

Docket No. 02-19-26-04

Regarding alleged violation of Rule 400-2-4-.14(1)(b) relating to Temporary Abandoned Status for Offshore Wells, including failure to set plugs and/or otherwise conduct the activities required by rule regarding the following wells:

Well Name	Permit	Field
State Lease 538 #1	4266-OS-23	North Central Gulf - Mobile Area
State Lease 348 (Tract 77) Well #3	9597-OS-43-B-1	Lower Mobile Bay - Mary Ann
State Lease 536, No. 3	11009-OS-65-B	Northwest Gulf - Mobile Area
State Lease 536, Tract 111, Well #4	11293-OS-68-B	South Pelican Island
State Lease 537 No. 3	11434-OS-78-B	Northwest Gulf - Mobile Area

North Central Gulf – SL 538 #1 and MB 115 CA Platform (also referred to as 115-1 Well):

State Lease 538 #1 Well (also referred to as the 115-1 Well) is on an active lease and, W&T Offshore believes that the well has future utility. During 2025, W&T Offshore successfully deployed advancements in its Deep Tubing Wash (DTW) program. As a result of previous failures of DTW operations by Exxon and W&T Offshore through 2024, we worked closely with vendors to develop new chemical formulations, a novel surfactant that is able to maintain a stable foam at Norphlet temperatures and pressures, and utilized precision placement techniques to perform successful DTW's on wells with typical Norphlet characteristics currently found in Mobile Bay (very low pressure and high temperature). In 2025, W&T Offshore spent $4.4 million on three (3) DTW campaigns using a proprietary blend of chemicals designed to lighten the fluid column where reservoir pressure alone is no longer sufficient to provide adequate flowback, resulting in an uplift in production of 27.6 MMCFPD. This included a return to production of four (4) wells that had been offline. This new capacity for performing successful DTW provides a new opportunity to remediate the State Lease 538 #1 Well (115-1).

DTW Campaigns, to include State Lease 538 #1 Well, are included in the 2026 budget and are scheduled to occur in Q2 and Q3. W&T Offshore must consider commodity pricing, intervention resource availability, weather and other factors when prioritizing projects for execution.

Mary Ann Field – SL 348 (Tract 77) Well #3 and MB 95 E Platform (also referred to as 77-3 Well):

State Lease 348 (Tract 77) Well #3 (also referred to as the 77-3 Well) is on an active lease and W&T Offshore believes it has future utility. During 2025, W&T Offshore successfully deployed advancements in its Coil Tubing Clean Out (CTCO) program. Following previous

failures of CTCO operations in 2023, which included three (3) well interventions at an expense of $12 million, W&T Offshore worked with vendors to develop new equipment and techniques to perform CTCO on Norphlet wells that mitigated the characteristics typical of current conditions found in Mobile Bay – low bottom-hole pressure, saline formation waters, and corrosive sour gas. In 2025, W&T Offshore spent $1.7 million on a CTCO Project at MB 64-2 using newly-developed, NACE compliant downhole tooling which successfully returned the MB 64-2 well to production, resulting in an uplift in production of 8.9 MMCFPD. This new capacity to perform CTCO on scale-plugged wells provides a new opportunity to perform remediation on shut-in wells like the State Lease 348 (Tract 77) Well #3.

The CTCO project for State Lease 348 (Tract 77) Well #3 is included in the 2026 budget and is scheduled to occur in the third quarter (Q3) of 2026. W&T Offshore must consider commodity pricing, resource availability, weather and other factors in prioritizing projects for execution. In this regard, the CTCO project for State Lease 348 (Tract 77) Well #3 remains an available opportunity for future utility as a well until such time as it is selected for execution.

Northwest Gulf – SL 536 No. 3 - MB 112 B-deck (111-3)

The State Lease 536 No. 3 Well (also referred to as the 111-3 Well) is located on an active lease. The SL 536 No.3 Well is completed in the lowest structural position of the Northwest Gulf's 111/MO823 dune complex. The well is located on a manned platform known as the State Block 112 "B-Deck" Platform. This well is routinely monitored and has presented no safety or environmental risks to Mobile Bay. The well was placed into Temporary Abandoned status by Exxon in 2013 and has remained in the same status since that time.

In accordance with OGB Rule 400-2-4-.14, W&T Offshore plans to place an intermediate casing plug in the well to reach compliance. This work is in the 2026 budget and is scheduled to occur during the 2026 Decommissioning Campaign, pending availability of resources and fair weather, with forecasted completion before December 31, 2026. W&T Offshore will provide an abandonment application to OGB staff for approval after the hearing on this petition and a completed Form OGB-11 will be sent within 30 days after the plugging operation to confirm the setting of the intermediate plug. Afterwards, W&T Offshore will continue to monitor the well until such time as full plug and abandonment of the well is carried out.

Northwest Gulf – SL 536 Tract 111 #4 - MB 112 B-deck (111-4)

The State Lease 536, Tract 111, Well #4 has future utility. This well accesses a Miocene reservoir. The gas produced from this reservoir is sweet and is a candidate for future fuel gas supply needs.

Northwest Gulf – SL 537 No. 3 - MB 112 B-deck (112-3)

The State Lease 537 No. 3 Well (sometimes referred to as the 112-3 Well) is located on an active lease. The SL 537 No. 3 Well is completed in the lowest structural position of the Northwest Gulf's 112/MO823 dune complex. The well is located on a manned platform known as the State Block 112 "B-Deck" Platform. This well is routinely monitored and has presented no

safety or environmental risk to Mobile Bay. The well was placed into Temporary Abandoned status by Exxon in 2014 and has remained in the same status since that time.

In accordance with OGB Rule 400-2-4-.14, W&T Offshore plans to place an intermediate casing plug in the well to reach compliance. This work is in the 2026 budget and is scheduled to occur during the 2026 Decommissioning Campaign, pending availability of resources and fair weather, with forecasted completion before December 31, 2026. W&T Offshore will provide a completed abandonment application to OGB staff for approval after the hearing on this petition and a completed Form OGB-11 will be sent within 30 days after the plugging operation to confirm the setting of the intermediate plug. Afterwards, W&T Offshore will continue to monitor the well until such time as full plug and abandonment of the well is carried out.

W&T Offshore

EXHIBIT 1

Docket No. 02-19-26-05

Prepared by Kendra Sullivan

W&T Offshore Narrative Response to
Motion by the State Oil and Gas Board of Alabama

Docket No. 02-19-26-05

Regarding Rule 400-2-6-.09(4) relating to Recertification of Structural Integrity of Platforms and Fixed Structures:

During the December 2024 hearing, W&T Offshore testified before the Board that it would be completing the outstanding structural integrity recertifications in Mobile Bay by the end of 2026. Approximately half of the outstanding surveys and recertifications were scheduled for completion in 2025 and have been completed accordingly (10 structure). The remaining structures are included in the 2026 budget and are already scheduled for survey and recertification. The structures were prioritized based on availability and safety concerns, with those most likely to need work completed first. W&T Offshore has not included MB-115CD in the planned scope of work since it is pending removal. Structures to be completed in 2026 include:

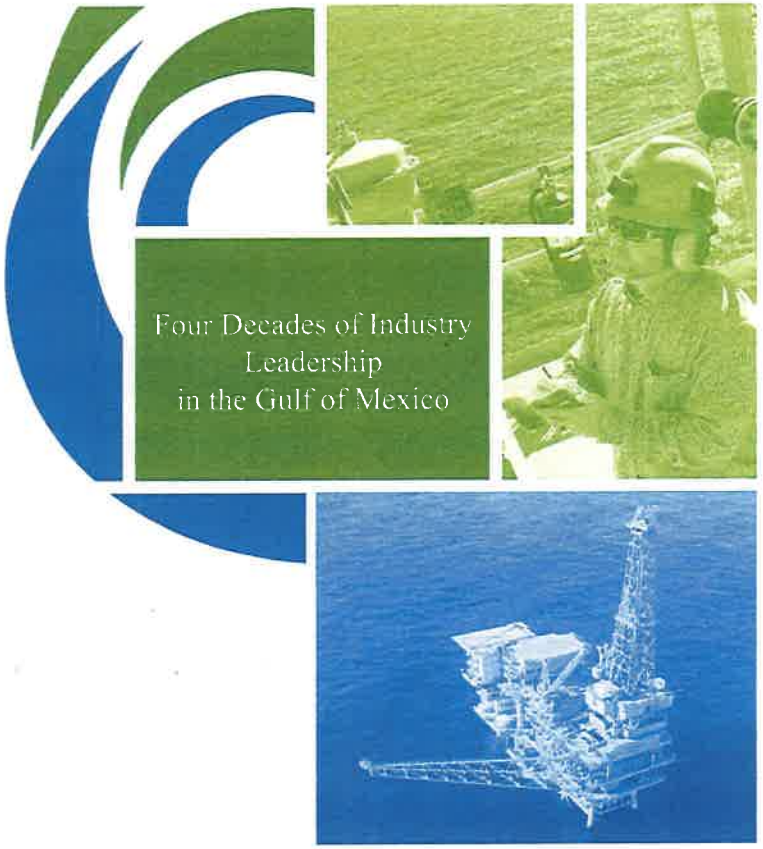
MB-112BQ
MB-11BA
MB-112BD
MB-112BE
MB-113
MB-113JA
MB-113JB
MB-113JC
MB-113JD/JF
MB-113JE

ALABAMA OIL & GAS BOARD

Exhibit No: W&T 1
Petitioner: Board
Item No: 5 Date: 2-19-26
Witness: Kendra Sullivan
Received by: EP

W&T OFFSHORE

AOGB
SPECIAL HEARING
FEBRUARY 19, 2026



www.wtoffshore.com

NYSE: WTI

ALABAMA OIL & GAS BOARD

Exhibit No: W+T 2
Petitioner: Board
Item No: 1-5 Date: 2-19-26
Witness: Williford
Received by: EP

W&T'S 40+ YEAR HISTORY

OVER FOUR DECADES, W&T HAS EVOLVED FROM A SMALL INDEPENDENT OPERATOR TO A SEASONED PLAYER IN THE GOA

1980s

W&T was founded by Tracy Krohn & began expanding via acquisitions

- 1983: Tracy Krohn founded W&T Offshore
- 1984: Tracy Krohn capitalized the company with $12K
- 1985: Purchased 1st property for $500K
- 1988 – 1989: Acquired additional properties to increase footprint

1990s

W&T proved drilling expertise

- 1990 – 1993: Acquired additional properties
- 1995 -1996: Drilled over 30 wells on turnkey contracts for other companies

2000s

W&T completed IPO and made largest acquisition in Company's history

- 2005: IPO'd on the NYSE
- 2006: Closed $1.3 Bn acquisition from Kerr-McGee
- 2007: $450 MM debut senior notes offering

2010s

Created Monza drilling JV and purchased largest U.S. offshore natural gas field from Exxon

- 2018: Raised ~$360 MM of drilling capital led by HarbourVest and Baker Hughes to form Monza JV
- Acquired largest shallow water U.S. offshore natural gas field (Mobile Bay) from Exxon for ~$170 MM

2020s

W&T simplified its capital structure by refinancing term loan and senior notes

- 2025: Simplified capital structure by entering into an undrawn $50 MM revolver and issuing $350 MM second lien notes
- Purchased Cox Energy's select GOA assets for ~$77 MM

Future

W&T plans to significantly grow production by increasing operations in deepwater GOA and continuing to make opportunistic acquisitions

W&T'S STRENGTHS AND STRATEGY

W&T PROVIDES AN ATTRACTIVE INVESTMENT OPPORTUNITY IN A COMPELLING REGION FOR GROWTH

Core Strengths Backing the Opportunity

1) **Highly-experienced team with offshore capabilities and shareholder alignment**
   - Knowledge and delivery for over four decades in the GOA, publicly-listed since 2005
   - High standards of health and safety, sustainability and corporate responsibility
2) **Proven business model in attractive GOA region**
   - Proven track record of accretive M&A by lowering costs and adding reserves and production
   - GOA is the 2nd largest oil-producing basin in the U.S., behind the Permian, and has attractive fiscal terms
3) **Premier assets with long reserve life, scale and diversification**
   - Large 1P and 2P reserves permitting over 20 years of reserve life
   - Proven track record of production from over 300 productive wells / over 50 fields
   - ~50/50 liquids-gas mix (Mobile Bay gas realizes a considerable premium to Henry Hub)
4) **Operatorship permitting control**
   - Operating 94% acreage / 86% production, expertise across water depths
   - Employing operational experience to extend field-life and maximize economics
   - Use advanced seismic and geoscience tools to execute successful drilling projects
   - Optimizing assets through disciplined operations and targeted reinvestment
5) **Scale and footprint enabling infrastructure synergies**
   - Attractive F&D costs driven by tie-backs to owned and operated existing infrastructure
6) **Free-cash-flow generative and strong balance sheet**
   - Over $1 Bn of net debt reduction since 2014 and current liquidity of ~$175 MM supports acquisition and organic growth to create shareholder value

Simple but Effective Strategy

Fundamental focus on generating free cash flow

Maintaining and optimising high-quality conventional (offshore) assets with low decline rates

Exploiting existing assets to increase reserves and production and exploring for reserves across extensive acreage

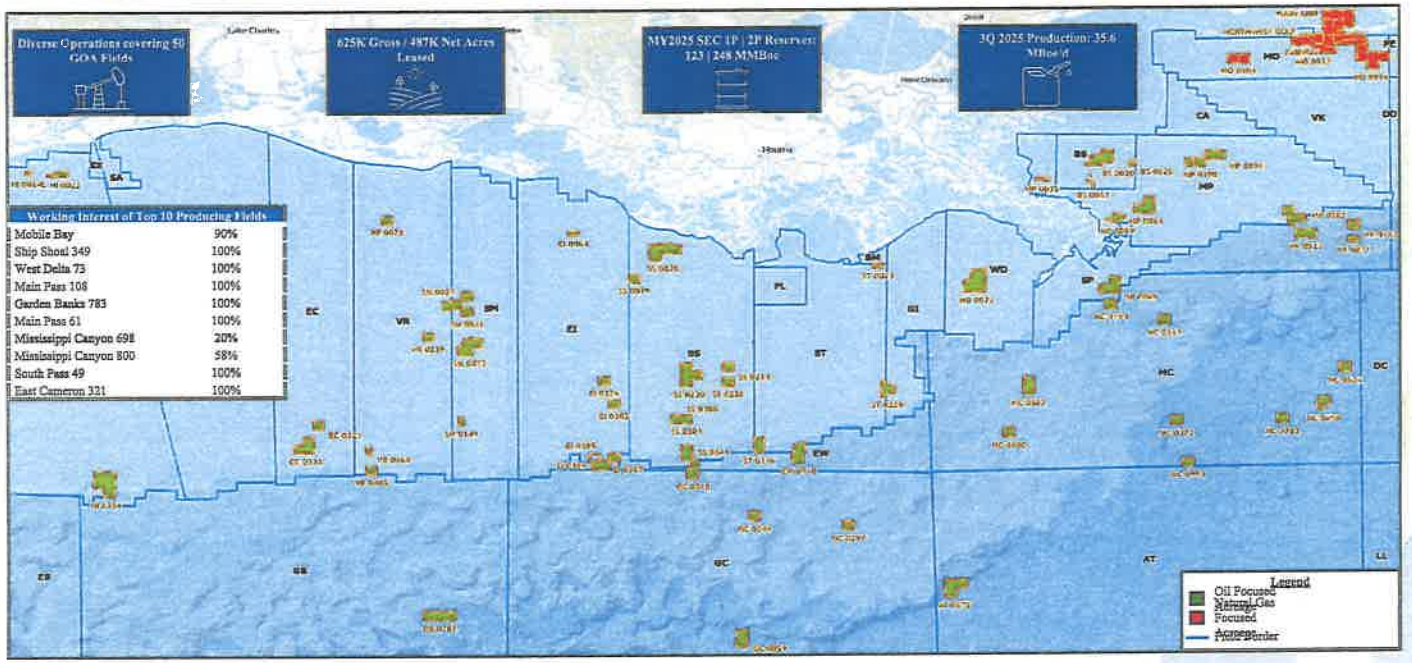
Pursuing unique and accretive M&A opportunities, often from majors divesting in the GOA

Harnessing our significant scale to integrate assets, yielding cost synergies and increasing margins

Managing a prudent balance sheet and delivering attractive shareholder returns

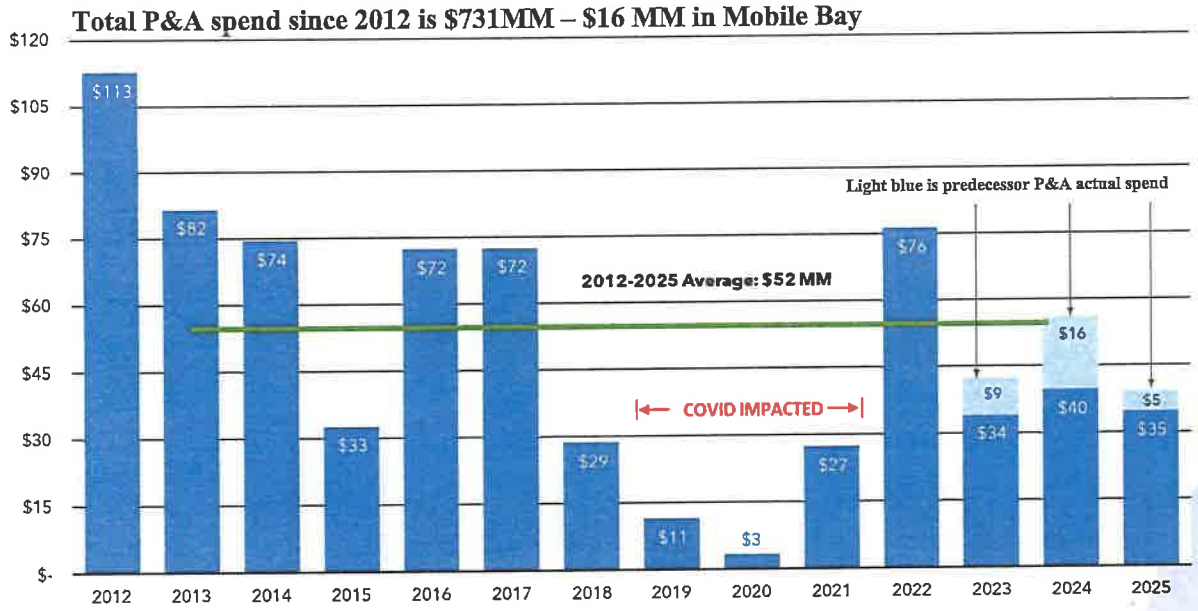
W&T OFFSHORE

ASSET DIVERSIFICATION WITH OPERATORSHIP FOCUS



W&T OFFSHORE

W&T OFFSHORE DECOMMISSIONING EXPENDITURES

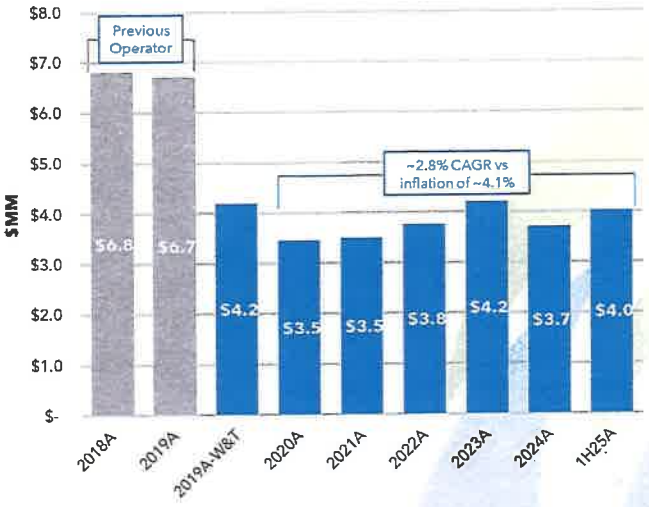


W&T OFFSHORE

MATERIAL LOE REDUCTION ON EXXON MOBILE BAY ACQUISITIONS

		Mobile Bay Fields[1]
Transaction Details	Acquisition Year	2019
	Acquisition Price	$171 MM
	Sellers	ExxonMobil
	Working Interest	25% - 100%
	Water Depth	10' – 50'
Post-Acquisiton Asset Optimization	Consolidation of treatment facilities	✔
	Modify treatment of waste oil	✔
	Reducing downtime	✔
Post-Acquisition Financial Performance	Total Free Cash Flow[2]	$396 MM
	MY 2025 2P PV-10 Including ARO[3]	$301 MM
Remaining Reserves	1P Reserves[3]	50.4 MMBoe
	2P Reserves[3]	62.0 MMBoe

Base LOE/Monthly Average

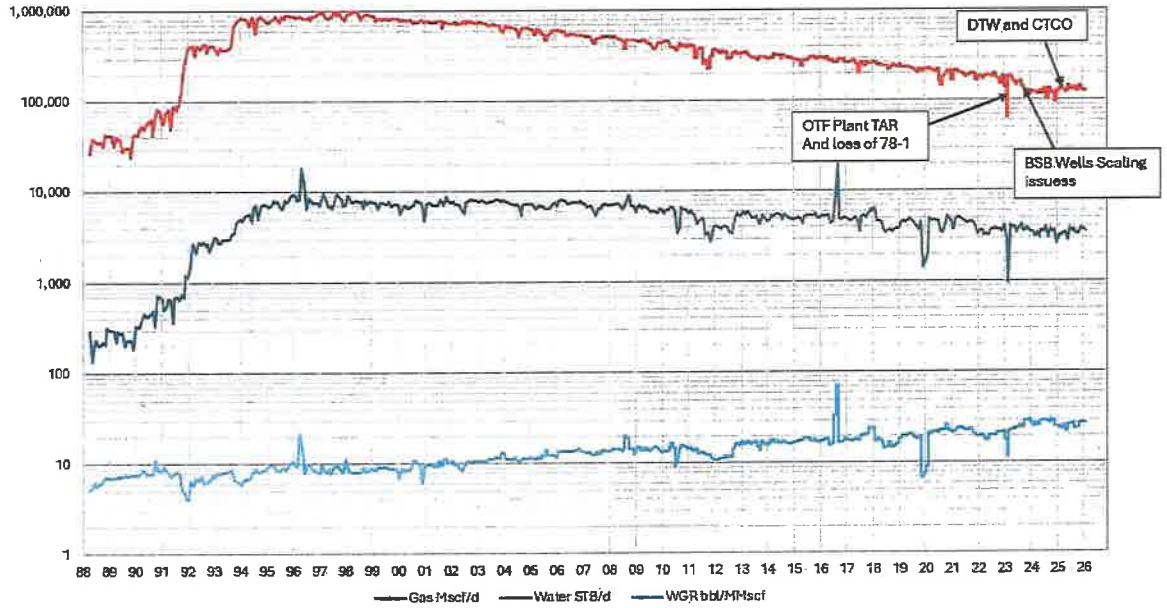


1) Excludes MO 904 & MO 916 purchased from Cox in 2024
2) From closing date to June 30, 2025, to match mid-year 2025 reserve report. Total does not include any impacts from hedges. Free Cash Flow is a non-GAAP financial measure
3) Based on mid-year 2025 reserve report at SEC pricing of $71.20/Bbl and $2.86/MMBtu

W&T OFFSHORE

MOBILE BAY PRODUCTION

W&T Offshore Mobile Bay Production History



W&T OFFSHORE

REVENUE PAID TO ALABAMA

W&T Offshore Summary of Payments to Alabama by Year

Category	2020	2021	2022	2023	2024	2025	Grand Total
Royalties	$21,653,892.31	$42,649,202.08	$63,898,130.36	$30,569,933.55	$22,294,482.55	$29,146,825.29	$210,212,466.14
Taxes	$3,904,065.56	$7,147,290.10	$13,754,233.94	$5,691,408.97	$3,990,704.88	$4,923,500.16	$39,411,203.61
Regulatory and Permits	$46,739.12	$65,511.33	$48,548.51	$481,073.90	$142,772.21	$96,390.31	$881,035.38
Other Misc.	$0.00	$21,000.00	$306.01	$0.00	$0.00	$21,306.01	$42,612.02
Total	$25,604,696.99	$49,883,003.51	$77,701,218.82	$36,742,416.42	$26,427,959.64	$34,188,021.77	$250,547,317.15
Alabama Resident Compensation	$8,199,978.69	$8,069,277.80	$12,257,911.79	$14,804,760.93	$13,685,159.22	$11,980,010.44	$68,997,098.87
Totals	**$33,804,675.68**	**$57,952,281.31**	**$89,959,130.61**	**$51,547,177.35**	**$40,113,118.86**	**$46,168,032.21**	**$319,544,416.02**

1) Costs are broken down by field.