

## Reserves and Contingent Resources of the Wressle Oilfield PEDL180 and PEDL182, Onshore UK

and

# Illustrative Production Scenario, and Upside Potential

Prepared for Union Jack Oil plc 13th September 2022



## **Table of Contents**

Intro	oduc	tion1
Sun	nmar	y2
Dise	cussi	on7
1	Bac	kground7
	1.1	Database and Previous Exploration7
	1.2	Production History8
2	Sub	surface Interpretation9
	2.1	Stratigraphy9
	2.2	Structural Mapping9
	2.1	Reservoir Description9
		2.1.1 Penistone Flags92.1.2 Wingfield Flags92.1.3 Ashover Grit102.1.4 Santon Sandstone11
	2.2	STOIIP and GIIP Estimates11
3	Res	erves11
	3.1	Production Forecasts
	3.2	Costs
4	Eco	nomic Analysis13
	4.1	Oil Pricing Assumptions
	4.2	Costs
	4.3	Results13
Bas	is of	Opinion

## List of Figures

Figure 1: Location of Wressle Oilfield, Onshore UK	2
Figure 2: Illustrative Production Scenario for the Wressle Oilfield	5
Figure 3: Petrophysical Interpretation – Deeper Potential Contact	6
Figure 4: Wressle-1 Oil and GOR Production History	8
Figure 5: Wressle Oilfield: Depth Structure Maps	.10
Figure 6: Wressle-1 Oil Production Forecasts	.12

## **List of Tables**

Table 1: Licence Ownership Details	2
Table 2: Wressle Oilfield Oil Reserves as at 30th June 2022	3

Table 3: Wressle Oilfield Oil Contingent Resources as at 30th June 2022	3
Table 4: Wressle Oilfield Gas Contingent Resources as at 30th June 2022	4
Table 5: Wressle Oilfield: Estimates of Gross Technically Recoverable Resources	5
Table 6: Single Deterministic Estimate for Deeper Contact Scenario	7
Table 7: Well Data	8
Table 8: Wressle Oilfield: Discovered STOIIP Estimates	11
Table 9: Wressle Oilfield: Discovered GIIP Estimates	11
Table 10: Wressle Oilfield: Gas Cap GIIP Estimates	11
Table 11: GaffneyCline Q3 2022 Brent Crude Oil Price Scenario	13

### Appendices

Appendix I:	Glossary
Appendix II:	SPE PRMS Definitions
Appendix III:	Production and Cost Forecasts



Gaffney, Cline & Associates Limited Second Floor, Building M3 Millennium Centre, Crosby Way Farnham, Surrey, GU9 7XX United Kingdom

Tel: +44 (0) 1420 525366

Registered in England Registration No: 1122740

13th September 2022

David Bramhill Executive Chairman **Union Jack Oil plc** 6 Charlotte Street Bath BA1 2NE

Dear Mr Bramhill,

#### Reserves and Contingent Resources of the Wressle Oilfield PEDL180 and PEDL182, Onshore UK, and Illustrative Production Scenario and Upside Potential

#### Introduction

At the request of Union Jack Oil plc (Union Jack), Gaffney, Cline & Associates Limited (GaffneyCline) has prepared an independent Reserves and Contingent Resources report for the Wressle Oilfield, PEDL180 and PEDL182 onshore United Kingdom, as at an Effective Date of 30<sup>th</sup> June 2022. Included in this work was the development of an Illustrative Production Scenario for the future development of the field that includes the development of Contingent Resources. In addition an independent assessment of the upside potential of the producing Ashover Grit trap was performed. This work was not incorporated into the Reserves or Contingent Resources estimates.

GaffneyCline has assessed the Gross Reserves and Contingent Resources, and the Net Reserves and Net Contingent Resources attributable to the Union Jack's interest in the Wressle Oilfield. This assessment has been conducted using information provided to GaffneyCline by or at the direction of Union Jack including: details of concession interests and agreements, geological, geophysical, reservoir engineering and production data, interpretations and technical reports.

This report relates specifically and solely to the subject matter as defined in the scope of work, as set out herein, and is conditional upon the specified assumptions. The report must be considered in its entirety and must only be used for the purpose for which it is intended.

A glossary of abbreviations used in this report is contained in Appendix I.

www.gaffneycline.com



#### Summary

#### **Licence Summary**

The Wressle Oilfield is located in licences PEDL 180 and 182 onshore UK (Figure 1). Union Jack is a non-operating partner in the field, which is operated by Egdon Resources U.K. Ltd (Egdon). Details of the licences are shown in Table 1.



#### Figure 1: Location of Wressle Oilfield, Onshore UK

Source: Union Jack Oil



Licence	Holders (WI)	Operator	Area (km²)	Award Date	Expiry Date
PEDL 180	Union Jack Oil plc (40%) Egdon Resources U.K. Limited (30%) Europa Oil and Gas Limited (30%)	Egdon	40	1 <sup>st</sup> July, 2008	1 <sup>st</sup> July, 2039
PEDL 182	Union Jack Oil plc (40%) Egdon Resources U.K. Limited (30%) Europa Oil and Gas Limited (30%)	Egdon	19	1 <sup>st</sup> July, 2008	1 <sup>st</sup> July, 2039



The Field Development Plan (FDP) was originally submitted by Egdon in 2016, and a field determination area was defined (Figure 1), and an updated FDP approved by the North Sea Transition Authority (NSTA) in May 2022.

#### **Reserves and Contingent Resources Summary**

GaffneyCline's independent estimates of the Reserves and Contingent Resources for Wressle Oilfield are shown in Table 2, Table 3 and Table 4.

Decements	G	Gross (MMBb	ol)	Net to Union Jack (MMBbl)		
Reservoir	1P	2P	3P	1P	2P	3P
Ashover / Wingfield	0.32	0.67	1.03	0.17	0.27	0.41

#### Table 2: Wressle Oilfield Oil Reserves as at 30th June 2022

Notes:

1. Gross Reserves are 100% of the volumes estimated to be commercially recoverable from the field under the firm development plan.

- 2. Reserves Net to Union Jack are Union Jack's Working Interest (40%) fraction of the Gross Reserves.
- 3. 1P = Proved; 2P = Proved plus Probable; 3P = Proved plus Probable plus Possible.
- 4. 3P reserves reported to 2034 (end of licence).

#### Table 3: Wressle Oilfield Oil Contingent Resources as at 30<sup>th</sup> June 2022

Decement	Gross (MMBbl)			Net to Union Jack (MMBbl)		
Reservoir	1C	2C	3C	1C	2C	3C
Penistone Flags	0.85	1.56	2.74	0.34	0.62	1.10
Santon Sandstone	0.03	0.06	0.11	0.01	0.02	0.04

Notes:

1. Gross Contingent Resources are 100% of the volumes estimated to be recoverable from the discovery if it is developed.

2. Contingent Resources Net to Union Jack are Union Jack's Working Interest (40%) fraction of the Gross Contingent Resources.

3. The volumes reported here are "unrisked" in the sense that no adjustment has been made for the risk that the discovery would not be developed in the form envisaged or not at all (i.e. no "Chance of Development" factor has been applied).

4. 1C = Low estimate; 2C = Best estimate; 3C = High estimate.



Decements	Gross (Bscf)			Net to Union Jack (Bscf)		
Reservoir	1C	2C	3C	1C	2C	3C
Ashover Grit	0.21	0.44	0.67	0.08	0.18	0.27
Penistone Flags	0.95	1.98	2.52	0.38	0.79	1.01
Wingfield Flags	0.03	0.05	0.11	0.01	0.02	0.04
Santon Sandstone	0.06	0.11	0.20	0.02	0.04	0.08

#### Table 4: Wressle Oilfield Gas Contingent Resources as at 30th June 2022

Notes:

- 1. The associated gas from the Ashover Grit and Wingfield Flags production is classified as Contingent Resources as no method to monetise these resources is currently in place. Contingent Resource estimates take into account of gas production to effective date.
- 2. Non-associated and associated gas volumes are summed for the Penistone Flags and Wingfield Flags reservoirs.
- 3. Gross Contingent Resources are 100% of the volumes estimated to be recoverable from the discovery if it is developed.
- 4. Contingent Resources Net to Union Jack are Union Jack's Working Interest (40%) fraction of the Gross Contingent Resources.
- 5. The volumes reported here are "unrisked" in the sense that no adjustment has been made for the risk that the discovery would not be developed in the form envisaged or not at all (i.e. no "Chance of Development" factor has been applied).
- 6. 1C = Low estimate; 2C = Best estimate; 3C = High estimate.

#### Future Development of the Wressle Oilfield

The Wressle-1 well is currently producing oil and gas from the Ashover Grit reservoir. The 2016 FDP expected the Ashover Grit and overlying Wingfield Flags reservoirs would be concurrently produced. However, the Wingfield Flags interval has not so far been perforated at Wressle-1. The Operator (Egdon) plans to complete the Wingfield Flags reservoir and start production from this reservoir when appropriate. Volumes associated with the Wingfield Flags are included in the Reserves estimates reported in Table 2.

The FDP envisaged the development of the Penistone Flags, and these Contingent Resources provide significant additional production potential for the Wressle Oilfield. The Penistone Flags interval was tested in the Wressle-1 well and oil and gas were produced from this reservoir. However, there is currently no confirmed schedule for its development, which will require additional wells to be drilled and at least one additional well site, these volumes are currently classified as Contingent Resources, with the potential to be reclassified as Reserves subject to all relevant approvals being in place.

A potential future oil production scenario for the Wressle Oilfield is shown in Figure 2. This assumes that along with continued production from the Ashover Grit and Wingfield Flags, the Penistone Flags reservoir is developed with two or three additional wells. The coloured bars represent an unconstrained production scenario. The solid line represents a constrained off-take rate of 800 Bopd. There is significant uncertainty on the initial flowrate that will be obtained from the Penistone Flags reservoir. Figure 2 shows that the 800 Bopd off-take rate can be maintained for up to five years. Note that whilst this is based in part on the recent FDP, this scenario does not necessarily reflect the Operators or Partners plans.







#### Wressle Oilfield Technically Recoverable Resources

To allow comparison with reports prepared pre-production by others GaffneyCline has tabulated the Technically Recoverable Resources (TRR) for the Wressle Oilfield (Table 5).

Deservain	Oil TRR (MMBbl)			Gas TRR (Bscf)		
Reservoir	Low	Best	High	Low	Best	High
Ashover Grit	0.39	0.77	1.58	0.22	0.43	0.87
Wingfield Flags	0.04	0.08	0.16	0.05	0.08	0.15
Penistone Flags	0.85	1.56	2.74	0.95	1.98	3.52
Santon Sandstone	0.03	0.06	0.11	0.01	0.02	0.04

Fable F. Wreede	Cilfield, Estimates	of Cross Technical	v Deseverable Deseveras
ladie 5: wressie	Olifield: Estimates	of Gross Technical	V Recoverable Resources

Notes:

.

- 1. Cumulative production to 30<sup>th</sup> June 2022 is 203 MBbl of oil and 116 MMscf of gas.
- 2. Wingfield and Penistone Flags estimates included associated and non-associated gas.

#### **Potential Upside Resources Volumes**

GaffneyCline has assessed the potential upside resource volumes associated with two opportunities:

- 1. A deeper oil-water contact in the producing Ashover Grit; and
- 2. The Santon Sandstone reservoir.



#### Ashover Grit Deeper Contact.

There remains significant uncertainty about the extent and size of the Ashover Grit trap. Mapping of the Ashover Grit at the Wressle Oilfield by GaffneyCline using the 3D seismic data indicates that the spill-point of the trap is deeper than the oil-down-to (ODT) derived from log data used in the estimation of Reserves (Figure 3). However, a water-up-to (WUT) in the deeper part of the Ashover Grit in the Wressle-1 well at 1,622 m TVDss (Figure 3) is deeper than the closure. Therefore the trapping mechanism and spill-point are uncertain and may be deeper than the values used in the Reserves estimation. These results (Table 6) provide a potentially significant increased STOIIP estimate and also potentially recoverable volumes. Not all of the volumes may be recoverable from the Wressle-1 location.





Source: GaffneyCline



#### Table 6: Single Deterministic Estimate for Deeper Contact Scenario

Reservoir	STOIIP	Recoverable
	(MMBbl)	(MMBbl)
Ashover Grit (Deeper Contact)	10.12	2.43

Notes:

- 1. The volumes estimated use the same reservoir parameters as the Reserves estimates for the Ashover Grit with the exception of the Gross Rock Volume estimate
- 2. A recovery factor of 24% is assumed.

This is a speculative estimate, however, this assessment by GaffneyCline indicates that there may be greater resource volumes associated with the Ashover Grit than currently reported. Additional production data from the Wressle-1 well may provide further guidance.

#### Santon Sandstone Potential

The Wressle-1 well also indicated the hydrocarbon potential of the Santon Sandstone. This reservoir requires further data to be obtained during future drilling in the field before any development can be planned, however, they provide additional future potential.

GaffneyCline has estimated the Contingent Resources for the Santon Sandstone (Table 3 and Table 4).

#### Discussion

#### 1 Background

#### **1.1 Database and Previous Exploration**

PEDL180 and PEDL182 are located in northern Lincolnshire in the northeast of England (Figure 1). The permits lie within the East Midlands petroleum province, and in the local area, exploration occurred in the 1980's when RTZ and BP were actively exploring.

BP drilled the exploration well Broughton B-1 in 1984 (Table 7), and discovered oil in Namurian aged sandstones, but was not developed. This well is located some 2 km to the west of Wressle-1. Broughton B-1 lies within the same overall structural closure, although is not oil-bearing in the Ashover Grit.

A 3D seismic survey covering an area of c. 45 sq km was acquired in 2012 which is calibrated by three exploration wells. Legacy 2D data provide calibration with offset wells. Following interpretation of the seismic, the Wressle-1 well was drilled in 2014. The 3D seismic data were reprocessed in 2015. Table 7 lists the wells within the area of the licences.

Wressle-1 was intentionally deviated due to restrictions in the location of the surface well site. The well encountered hydrocarbons in Westphalian and Namurian aged sandstones before penetrating Dinantian carbonates. Flow tests were performed on the Ashover Grit, Wingfield Flags and Penistone Flags.



#### Table 7: Well Data

Well Name	Spud Date	Total Depth (m MD)	TD Formation	Comments
Broughton B-1	1984	1,920	Dinantian Carbonate	Suspended Oil Discovery
Wressle-1	2014	2,240	Dinantian Carbonate	Oil Discovery

#### **1.2 Production History**

The FDP for the Wressle Oilfield was initially submitted by Egdon in August 2016, and updated and re-submitted to the NSTA in May 2022. The Wressle-1 well was initially completed in the Ashover Grit, and the Wingfield Flags are to be perforated to co-mingle the production from the Ashover Grit and Wingfield Flags reservoirs.

Production from Wressle-1 commenced in January 2021 under an Extended Well Test permit. The Joint Venture partners announced on 30<sup>th</sup> May 2022 that the NSTA approved the production permit for valid until 2039.

The Oil and Gas-Oil-Ratio (GOR) production history is shown in Figure 4. The well was shutin for a workover and proppant squeeze between mid-July and mid-August 2021, and pressure measurements were made in December 2021. The results and an interpretation of these tests were provided to GaffneyCline, and included in this independent estimation. GaffneyCline prepared a Material Balance (MBAL) model using Petroleum Experts software (MBAL). This was used in the preparation of the low, best and high production forecasts. There has been no water production to date.



#### Figure 4: Wressle-1 Oil and GOR Production History



The oil production rate is currently around 760 Bopd, after increasing the gas flaring capacity. The oil production is restricted to remain within the Environmental Agency emission limit of 10 tonnes of Carbon per day.

Cumulative production to 30<sup>th</sup> June 2022 is 203 MBbl of oil and 116 MMscf of gas.

#### 2 Subsurface Interpretation

#### 2.1 Stratigraphy

The Wressle Oilfield oil and gas bearing reservoirs are of Carboniferous age ranging from Namurian to Westphalian. All of the oil bearing reservoirs are sandstones interpreted to have been deposited in a range of deltaic to shallow marine settings. The sandstones are interbedded with shales that provide local and regional seals. In the Westphalian sequence, coals are increasingly common.

#### 2.2 Structural Mapping

The mapping of the Wressle Oilfield is constrained by the 3D seismic dataset and the Wressle-1 and Broughton B-1 exploration wells. The overall structure at the reservoir levels is of a WNW-ESE oriented anticline. The structure is further segmented by a number of orthogonal faults that can be mapped in some instances, but are less apparent elsewhere (Figure 5).

#### 2.1 Reservoir Description

Hydrocarbon bearing reservoirs have been penetrated in the Wressle Oilfield multiple stratigraphic horizons.

#### 2.1.1 Penistone Flags

The Penistone Flags are the shallowest hydrocarbon-bearing reservoirs in the Wressle-1 well. The reservoir comprises thinly bedded sandstones and interbedded shales, and have been interpreted to be deposited in distributary mouth bars. The interval was flow tested in the Wressle-1 well producing gas from the upper tested interval and oil from the lower zone.

#### 2.1.2 Wingfield Flags

At Wressle-1, the oil and gas bearing reservoir within the Wingfield Flags is developed towards the base of the overall stratigraphic interval, and no correlative interval is developed in the Broughton B-1 well, reflecting the depositional setting of the Wingfield Flags, as the distributary mouth bar channels in this unit are interpreted to have limited lateral extent.

The interval was flow tested in the Wressle-1 well and produced oil with a moderately high GOR. The well logs indicate the presence of a small gas cap.





Figure 5: Wressle Oilfield: Depth Structure Maps

Source: GaffneyCline

#### 2.1.3 Ashover Grit

The Ashover Grit are the main reservoir at the Wressle Oilfield, and correlation of the Ashover Grit between Wressle-1 and Broughton B-1 is robust. The sandstones are interpreted to have been deposited in a deltaic distributary channel setting. Petrophysical evaluation of the Ashover Grit interval indicates an oil down to (ODT) at the base of the reservoir and the oil-water contact cannot be defined in the well providing some uncertainty about the resource potential (see Summary).



#### 2.1.4 Santon Sandstone

The Santon Sandstone is the basal sandstone unit of the Namurian section, it directly overlies the Dinantian limestone in the Wressle-1 well. No flow tests were attempted in this reservoir, although the interpretation indicates hydrocarbons bearing based on log analysis and other drilling data.

#### 2.2 STOIIP and GIIP Estimates

GaffneyCline has prepared independent estimates of in-place oil and gas resources (STOIIP and GIIP) for each of the reservoirs (Table 8, Table 9 and Table 10).

Poconyoir	STOIIP (MMBbl)			
Reservoir	P90	P50	P10	
Penistone Flags	6.68	10.69	16.93	
Wingfield Flags	0.32	0.57	1.03	
Ashover Grit	1.49	2.88	5.56	
Santon Sandstone	0.11	0.21	0.38	

#### Table 8: Wressle Oilfield: Discovered STOIIP Estimates

#### Table 9: Wressle Oilfield: Discovered GIIP Estimates

Pocoryoir	GIIP (Bscf)			
Reservoir	P90	P50	P10	
Penistone Flags	0.46	0.94	1.79	
Wingfield Flags	0.17	0.31	0.57	
Ashover Grit	0.82	1.58	3.06	
Santon Sandstone	0.06	0.12	0.21	

#### Table 10: Wressle Oilfield: Gas Cap GIIP Estimates

<b>D</b> ecembric	GIIP (Bscf)			
Reservoir	P90	P50	P10	
Penistone Flags	0.65	1.51	2.43	
Wingfield Flags	0.10	0.12	0.21	

#### 3 Reserves

Reserves are attributed to the oil production from the Ashover Grit reservoir via the Wressle-1 well, and oil from the Wingfield Flags reservoir following the planned perforation of this interval. GaffneyCline has prepared low, best and high production forecasts and estimated the associated costs for each for these forecasts. The oil volumes in other discovered reservoir intervals and the all of the gas volumes in all the reservoirs are classified as Contingent Resources.



#### 3.1 **Production Forecasts**

The production history to date is insufficient to allow production forecasts to be prepared on a historical production basis. An active aquifer is expected to be present based on the available pressure data and analogue field data, however, the degree of pressure support is as yet uncertain. Currently no formation water has been produced.

GaffneyCline's production forecasts are based on a Material Balance model prepared by GaffneyCline that was matched to the available pressure data, the oil in-place volume and the expected aquifer support. Uncertainty to the In-place, water production and aquifer support were used to develop the low and high production forecasts.

The Ashover Grit oil forecast assumes a constrained average rate of 760 Bopd based on recent production data. Figure 6 shows GaffneyCline's low, best and high oil, which are also shown in tabular form in Appendix III.



#### Figure 6: Wressle-1 Oil Production Forecasts

#### 3.2 Costs

GaffneyCline has prepared its own estimates of the remaining CAPEX and OPEX likely to be incurred in the future production of the oil and gas.

Oil produced from the field is stabilised on site and gas is flared, and the oil is transported to a nearby refinery by truck.

The cost profiles are shown along with the production forecasts in Appendix III.



#### 4 Economic Analysis

GaffneyCline has conducted an economic limit test (ELT) to calculate the Reserves for each of the low, best and high oil production profiles for the Wressle-1 well. This resulted in Proved, Proved plus Probable and Proved plus Probable plus Possible Reserves. The Economic Limit is defined as the time when the maximum cumulative net cash flow occurs for a project; this is the point in time that defines the end of the project's economic life.

#### 4.1 Oil Pricing Assumptions

For the purpose of determining the economic limit, GaffneyCline has used its Brent crude oil price scenario applicable as at 30<sup>th</sup> June 2022 as shown in Table 11.

No information has been provided on the price differential to Brent realised by the asset and the crude is assumed to trade at par with Brent.

Year	Price (US\$/Bbl)	
2022	106.9	
2023	92.9	
2024	85.0	
2025	80.0	
2026+	+2% per annum	

#### Table 11: GaffneyCline Q3 2022 Brent Crude Oil Price Scenario

#### 4.2 Costs

Estimates of CAPEX and OPEX have made for the cash flow calculations, costs have been escalated at 2.0% p.a. from 2022 onwards. An exchange rate of 1.20 US\$/GBP has been used.

#### 4.3 Results

A summary of Gross and Net Reserves can be found in Table 2 in the Summary section. Production was found to be economic through 2025 for the 1P case, 2029 for the 2P case and 2032 for the 3P case.

#### **Basis of Opinion**

This document reflects GaffneyCline's informed professional judgment based on accepted standards of professional investigation and, as applicable, the data and information provided by, or at the direction of, the Client, the limited scope of engagement, and the time permitted to conduct the evaluation.

In line with those accepted standards, this document does not in any way constitute or make a guarantee or prediction of results, and no warranty is implied or expressed that actual outcome will conform to the outcomes presented herein. GaffneyCline has not independently verified any information provided by, or at the direction of, the Client, and has accepted the accuracy and completeness of this data. GaffneyCline has no reason to believe that any



material facts have been withheld, but does not warrant that its inquiries have revealed all of the matters that a more extensive examination might otherwise disclose.

The opinions expressed herein are subject to and fully qualified by the generally accepted uncertainties associated with the interpretation of subsurface exploration data including well and seismic data and do not reflect the totality of circumstances, scenarios and information that could potentially affect decisions made by the report's recipients and/or actual results. The opinions and statements contained in this report are made in good faith and in the belief that such opinions and statements are representative of prevailing physical and economic circumstances.

In the preparation of this report, GaffneyCline has used definitions contained within the Petroleum Resources Management System (PRMS), which was approved by the Society of Petroleum Engineers, the World Petroleum Council, the American Association of Petroleum Geologists, the Society of Petroleum Evaluation Engineers, the Society of Exploration Geophysicists, the Society of Petrophysicists and Well Log Analysts, and the European Association of Geoscientists and Engineers in June 2018 (see Appendix II).

There are numerous uncertainties inherent in estimating reserves and resources, and in projecting future production, development expenditures, operating expenses and cash flows. Oil and gas resources assessments must be recognised as a subjective process of estimating subsurface accumulations of oil and gas that cannot be measured in an exact way. Estimates of oil and gas resources prepared by other parties may differ, perhaps materially, from those contained within this report.

The accuracy of any resources estimate is a function of the quality of the available data and of engineering and geological interpretation. Results of drilling, testing and production that post-date the preparation of the estimates may justify revisions, some or all of which may be material. Accordingly, resources estimates are often different from the quantities of oil and gas that are ultimately recovered, and the timing and cost of those volumes that are recovered may vary from that assumed.

GaffneyCline has not undertaken a site visit and inspection. As such, GaffneyCline is not in a position to comment on the operations or facilities in place, their appropriateness and condition, or whether they are in compliance with the regulations pertaining to such operations. Further, GaffneyCline is not in a position to comment on any aspect of health, safety, or environment of such operation.

This report has been prepared based on GaffneyCline's understanding of the effects of petroleum legislation and other regulations that currently apply to these properties.

GaffneyCline is not in a position to attest to property title or rights, conditions of these rights (including environmental and abandonment obligations), or any necessary licences and consents (including planning permission, financial interest relationships, or encumbrances thereon for any part of the appraised properties).

Oil and condensate volumes are reported in millions (10<sup>6</sup>) of barrels at stock tank conditions (MMBbl). Natural gas volumes have been quoted in billions (10<sup>9</sup>) of standard cubic feet (Bscf). Standard conditions are defined as 14.7 psia and 60°F.



#### **Definitions of Reserves and Contingent Resources**

Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must satisfy four criteria: discovered, recoverable, commercial and remaining (as of the evaluation's effective date) based on the development project(s) applied. All categories of Reserve volumes quoted herein have been determined within the context of an economic limit test (pre-tax and exclusive of accumulated depreciation amounts).

Contingent Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable owing to one or more contingencies. Contingent Resources may include, for example, projects for which there are currently no viable markets, where commercial recovery is dependent on technology under development, where evaluation of the accumulation is insufficient to clearly assess commerciality, where the development plan is not yet approved, or where regulatory or social issues may exist. Contingent Resource volumes reported herein are un-risked in terms of economic uncertainty and commerciality. There is no certainty that it will be commercially viable to produce any portion of the Contingent Resources.

#### Qualifications

In performing this study, GaffneyCline is not aware that any conflict of interest has existed. As an independent consultancy, GaffneyCline is providing impartial technical, commercial, and strategic advice within the energy sector. GaffneyCline's remuneration was not in any way contingent on the contents of this report.

In the preparation of this document, GaffneyCline has maintained, and continues to maintain, a strict independent consultant-client relationship with Union Jack. Furthermore, the management and employees of GaffneyCline have no interest in any of the assets evaluated or are related with the analysis performed, as part of this report.

Staff members who prepared this report hold appropriate professional and educational qualifications and have the necessary levels of experience and expertise to perform the work.



#### Notice

This document is confidential and has been prepared for the exclusive use of the Client or parties named herein. It may not be distributed or made available, in whole or in part, to any other company or person without the prior knowledge and written consent of GaffneyCline. No person or company other than those for whom it is intended may directly or indirectly rely upon its contents. GaffneyCline is acting in an advisory capacity only and, to the fullest extent permitted by law, disclaims all liability for actions or losses derived from any actual or purported reliance on this document (or any other statements or opinions of GaffneyCline) by the Client or by any other person or entity.

\*\*\*\*\*

It has been a pleasure preparing this Reserves and Contingent Resources Report for Union Jack Oil plc.

Yours sincerely,

#### Gaffney, Cline & Associates Limited

kober Cith

Project Manager Stephen Wright, Technical Director

lll

Reviewed by Drew Powell, Projects Director



Appendix I Glossary

Union Jack Oil plc 13th September 2022



#### GLOSSARY Standard Oil Industry Terms and Abbreviations

Bbl	Barrels
BBbl	Billion barrels
Bond	Barrels oil per day
Bopa Bscf or Bcf	Billion standard cubic feet
Bwnd	Barrels of water per day
°C.	Degrees Celsius
FRD	Exploration and production
	Field development plan
GOC	Gas oil contact
COP	
GOR	Gas oli Tallo
GRV	
GWC	Gas water contact
KIII	
Km²	Square kilometres
IVI 	
m°a	Cubic metres per day
MD	Measured depth
MM	Million
MMBbi	Millions of barrels
MMct or MMsct	Million standard cubic feet
NTG	Net to gross ratio
OWC	Oil water contact
p.a.	Per annum
PRMS	Petroleum Resources Management System
psi	Pounds per square inch
P10	Value with a 10% probability of being exceeded
P50	Value with a 50% probability of being exceeded
P90	Value with a 90% probability of being exceeded
RF	Recovery factor
scf	Standard cubic feet
scfd	Standard cubic feet per day
So	Oil saturation
stb	Stock tank barrel
STOIIP	Stock tank oil initially in place
Sw	Water saturation
TD	Total depth
TVDss	True vertical depth subsea
1C	Low estimate of Contingent Resources
2C	Best estimate of Contingent Resource
3C	High estimate of Contingent Resources
2D	Two dimensional
3D	Three dimensional
1H13	First half (6 months) of 2013 (example of date)
1P	Proved Reserves
2P	Proved plus Probable Reserves
3P	Proved plus Probable plus Possible Reserves
2Q14	Second quarter (3 months) of 2014 (example of date)



## Appendix II SPE PRMS Definitions

Union Jack Oil plc 13th September 2022



## Appendix III Production and Cost Forecasts

Union Jack Oil plc 13th September 2022



Year	Oil (MMBbl)	CAPEX (GBP MM)	OPEX (GBP MM)
2H 2022	0.125	-	1.135
2023	0.089	0.500	1.009
2024	0.049	-	0.863
2025	0.028	-	0.793
2026	0.016	-	0.758
2027	0.009	-	0.743
Total	0.316	0.500	5.302

#### Table AllI.1: Wressle-1 Production and Cost Forecasts – Proved Case

Notes:

- 1. Production volumes and costs are shown gross (100%).
- 2. Costs are shown in real terms, with no escalation or inflation applied.
- 3. Forecasts are shown up to the economic limit only.
- 4. Abandonment costs have not been considered.
- 5. Totals may not exactly equal the sum of individual entries due to rounding.

#### Table AllI.2: Wressle-1 Production and Cost Forecasts – Proved plus Probable Case

Year	Oil (MMBbl)	CAPEX (GBP MM)	OPEX (GBP MM)
2H 2022	0.138	-	1.187
2023	0.184	-	1.400
2024	0.103	-	1.090
2025	0.080	0.500	1.014
2026	0.056	-	0.928
2027	0.039	-	0.872
2028	0.027	-	0.836
2029	0.019	-	0.815
2030	0.013	-	0.805
2031	0.009	-	0.802
Total	0.667	0.500	9.751

Notes:

- 1. Production volumes and costs are shown gross (100%).
- 2. Costs are shown in real terms, with no escalation or inflation applied.
- 3. Forecasts are shown up to the economic limit only.
- 4. Abandonment costs have not been considered.
- 5. Totals may not exactly equal the sum of individual entries due to rounding.



Table AllI.3: Wressle-1 Production and Cost Forecasts – Proved plus Probable plus
Possible Case

Year	Oil (MMBbl)	CAPEX (GBP MM)	OPEX (GBP MM)
2H 2022	0.140	-	1.195
2023	0.269	-	1.744
2024	0.198	-	1.487
2025	0.115	-	1.161
2026	0.094	-	1.093
2027	0.067	0.500	0.999
2028	0.049	-	0.935
2029	0.035	-	0.890
2030	0.025	-	0.862
2031	0.018	-	0.846
2032	0.013	-	0.838
2033	0.009	-	0.837
2034	0.007	-	0.840
2035	0.005	-	0.847
Total	1.032	0.500	14.574

Notes:

- 1. Production volumes and costs are shown gross (100%).
- 2. Costs are shown in real terms, with no escalation or inflation applied.
- 3. Forecasts are shown up to the economic limit only.
- 4. Abandonment costs have not been considered.
- 5. Totals may not exactly equal the sum of individual entries due to rounding.