



TUNDRA OIL & GAS LTD.
4-19-1-25

OIL & WATER ANALYSIS

PREPARED FOR
TUNDRA OIL & GAS LTD.

FILE 84-AS-1034

1984 FEBRUARY

4500 - 5th STREET N.E., CALGARY, ALBERTA T2E 7C3

(403) 230-4128

FILE NUMBER

84-AS-1034

LABORATORY NUMBER

1034-01

CONTAINER IDENTITY

OIL ANALYSIS

OPERATORS NAME

Tundra Oil & Gas Ltd.

SAMPLE LOCATION

WELL NAME

ELEVATIONS
KB SRD

4-19-1-25

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TEST RECOVERY

TEST TYPE

NO.

MULTIPLE RECOVERY

TEST INTERNAL
FROM

TO

PERFORATIONS
FROM

TO

SAMPLING POINT

AMT. AND TYPE OF CUSHION

MUD RESISTIVITY(Ω /m)

PUMPING

FLOWING

GAS LIFT

SWAB

WATER

$\frac{3}{m^3/d}$

OIL

$\frac{3}{m^3/d}$

GAS

$\frac{3}{10 m^3/d}$

SEPARATOR

TREATER

RESERVOIR

SAMPLED

RECEIVED

GAUGE PRESSURE k/Pa

TEMPERATURE (°C)

DATE SAMPLED

Y - M - D H:M

DATE RECEIVED

Y - M - D

DATE ANALYZED

Y - M - D

ANALYST

L.M.

SUMMARY DATA

BASE TYPE

CHARACTERIZATION FACTOR

OIL ANALYSIS

DETAILED REPORT



OPERATOR'S NAME

Tundra Oil & Gas Ltd.

WELL NAME

LOCATION

4-19-1-25

SAMPLING POINT

FILE NUMBER

84-AS-1034

LABORATORY NUMBER

1034-01

SAMPLE PROPERTIES

COLOUR OF CLEAN OIL

WATER

BS

TOTAL BS & W

SPECIFIC GRAVITY

AS RECEIVED

AFTER CLEANING

0.846

DENSITY

AS RECEIVED

AFTER CLEANING

846

API

AS RECEIVED

AFTER CLEANING

35.7

TOTAL SULPHUR
MASS FRACTION

0.0074

TOTAL
SALT

g/m³

POUR POINT
ASTM

°C

7.4

g/g

RVP

CARBON RESIDUE
CONRADSON

VISCOSITY

TEMP °C	DYNAMIC mPa·s	KINEMATIC mm ² /s	SAYBOLT UNIVERSAL SECONDS
20			
30			
40			

DISTILLATION

METHOD

BAROM. PRESSURE

ROOM TEMP.

°C

INITIAL BOILING PT.

°C

DISTILLATION SUMMARY FRACTION

204°C NAPHTHA

274°C KEROSENE

343°C LIGHT GAS OIL

RECOVERED

RESIDUE

DISTILLATION LOSS

RELATIVE

DISTILLATE

DENSITY

RESIDUE

VOLUME
FRACTION
DISTILLED

TEMP
°C

FBP

CRACKED

REMARKS:

4500 - STREET N.E., CALGARY, ALBERTA T2E 7C3

(403) 230-4128

FILE NUMBER

84-AS-1034

LABORATORY NUMBER

1034-W1

CONTAINER IDENTITY

WATER ANALYSIS

OPERATOR'S NAME

Tundra Oil & Gas Ltd.

SAMPLE LOCATION

WELL NAME

ELEVATIONS KB GRD

4-19-1-25

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TEST RECOVERY

TEST TYPE

NO.

MULTIPLE RECOVERY

TEST INTERNAL

TO

PERFORATIONS

TO

SAMPLING POINT

AMT. AND TYPE OF CUSHION

MUD RESISTIVITY (Ω/m)

PUMPING

FLOWING

GAS LIFT

SWAB

WATER m^3/d

OIL m^3/d

GAS $10^3 m^3/d$

GAUGE PRESSURE k/Pa

TEMPERATURE ($^{\circ}C$)

SEPARATOR

TREATER

RESERVOIR

SAMPLED

RECEIVED

DATE SAMPLED
Y - M - D H : M

DATE RECEIVED
Y - M - D

DATE ANALYZED
Y - M - D

ANALYST

D.D./K.W.

SUMMARY DATA

TOTAL HARDNESS AS $CaCO_3$

g/m^3

TOTAL ALKALINITY

g/m^3

SALINITY

10.5

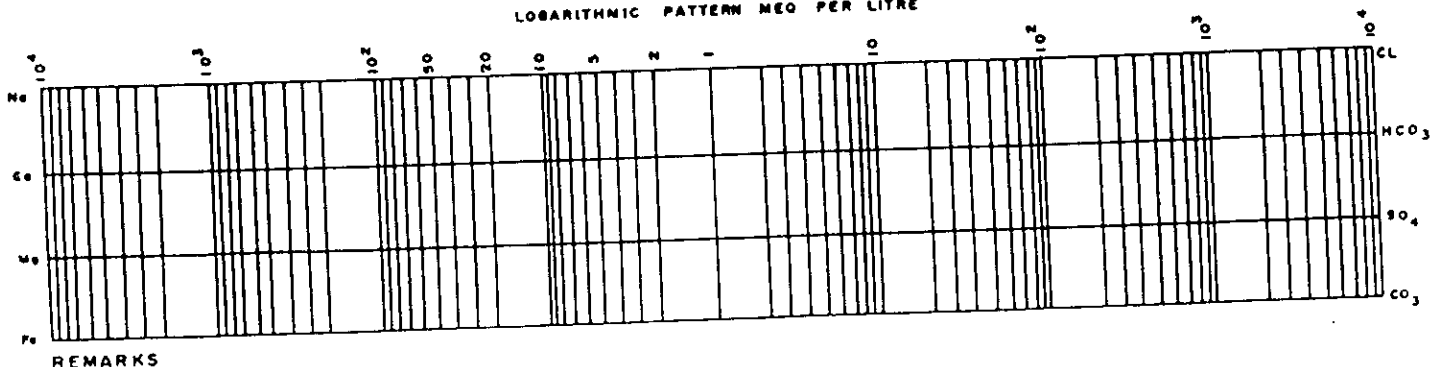
%

SATURATION INDEX

STABILITY INDEX

CORROSION TENDENCY

LOGARITHMIC PATTERN MEQ PER LITRE



WATER ANALYSIS DETAILED REPORT

OPERATOR'S NAME

Tundra Oil & Gas Ltd.

WELL NAME

LOCATION

4-19-1-25

SAMPLING POINT

FILE NUMBER

84-AS-1034

LABORATORY NUMBER

1034-W1

CATIONS

ION	g/m ³	MASS FRACTION	MEQ/L
Na			
K			
Ca			
Mg			
Ba			
Sr			
Fe			
Mn			
Al			
Si			
B			
U			
Th			

ANIONS

ION	g/m ³	MASS FRACTION	MEQ/L
Cl	58,300		1642
Br			
I			
F			
HCO ₃			
CO ₃			
OH			
SO ₄			
H ₂ S			
PO ₄			

TOTAL SOLIDS (g/m³)

EVAPORATED AT 110°C EVAPORATED AT 180°C

AT IGNITION CALCULATED

SPECIFIC GRAVITY REFRACTIVE INDEX (n_D)

at 15°C at 25°C

OBSERVED pH RESISTIVITY (RW) Ω·m

at 25°C 0.078 at 25°C

REDOX POTENTIAL(E_h) DISSOLVED O₂

g/m³

TOTAL METALS

METAL	g/m ³
Fe	
Mn	

REMARKS:

January 28, 1985

Newscope Resources Limited
1600 - 700 - 9th Ave. S.W.
Calgary, Alberta
T2P 3C4

Dear Sirs:

Re: Newscope Waskada 12-7-1-25 (WPM)

Enclosed please find the results of density and sulphur content analysis performed on a crude oil sample obtained from the subject battery.

There is no charge for this analysis.

Yours sincerely,

L. R. Dubreuil
Chief Petroleum Engineer
Petroleum Branch

LRD/sb
Encls.

MANITABA
DEPARTMENT OF ENERGY AND MINES
MINERAL RESOURCES DIVISION
PETROLEUM BRANCH
975 Century Street
Winnipeg, Manitoba
R3H 0W4

Newscope Resources Limited

1600-700-9th Ave SW.

Calgary 72P 3C4.

contact: Bruce Adc Kay

by: NEMBHARD/KIPINSKY

Methods: Density Hydrometer Sulphur LECO

Hydroxymethyl sulphur LEC

LECO

Analysis Charges: _____ samples @ \$50.00/sample \$ _____

Analysis Certified by J. Heggen

Prepared by

NOT COOP



CONTAINER IDENTITY

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY



LABORATORY NUMBER

C83-1007

OIL ANALYSIS

LICENCE NUMBER

OPERATOR NAME

AMERAN ENERGY LTD.

WELL NAME

Ameran Waskada 8-32-1-26

ELEVATIONS
AS SHOWN ON

LOCATION

8-32-1-26 W1

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TEST TYPE NO

TEST RECOVERY

MULTIPLE
RECOVERY

SAMPLING POINT

AMT & TYPE OF CUSHION

MUD RESISTIVITY

Test Interval (meters)

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

Perforations (meters)

WATER

m³/d OIL

m³/d GAS

10³m³/d

SEPARATOR

TREATER

RESERVOIR

SOURCE

GAUGE PRESSURE

MPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

TEMPERATURE °C

ANALYST

OTHER INFORMATION

DATE SAMPLED (Y-M-D)

DATE RECEIVED (Y-M-D)

DATE REPORTED (Y-M-D)

S. Sargious

1983-07-06

1983-07-22

SAMPLE PROPERTIES

COLOR OF CLEAN OIL

Brown

WATER

Trace

BS & W (VOLUME FRACTION)

SEGMENT

TOTAL

0.001

0.001

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

0.853

ABSOLUTE (kg/m³)

AS RECEIVED

AFTER CLEANING

852

TOTAL SULFUR
(MASS FRACTION)

0.0097

TOTAL SALT

g/m³

POUR POINT °C

USBM

ASTM

+13

CARBON RESIDUE
(MASS FRACTION)

CONRADSON

RAMSBOTTOM

0.0305

RVP MPa

VISCOSITY

TEMP °C

ABSOLUTE mPa.s

KINEMATIC mm²/s

20

30.6

36.0

40

4.48

5.35

50

3.56

4.29

DISTILLATION

METHOD

Hempel ASTM (D-285)

VOLUME
FRACTION
DISTILLED

TEMP °C

66

94

114

136

159

182

207

231

254

276

295

319

0.60

0.65

0.70

0.75

0.80

0.85

0.90

0.95

1.00

BAROM. PRESS (kPa)

89.2

ROOM TEMP °C

26.0

DISTILLATION SUMMARY

(VOLUME FRACTION)

200°C NAPHTHA

0.285

270°C KEROSENE

0.160

350°C LIGHT GAS OIL

RECOVERED

RESIDUE

DISTILLATION
LOSS

RELATIVE DENSITY

DISTILLATE

RESIDUE

F&P

BASE TYPE: Mixed

CRACKED

321

CHARACTERIZATION FACTOR: 11.9

Total Sulfur: 9.7 g/kg

BS & W determined on sample as received. Remainder of analysis determined on sample after cleaning by centrifuging.



CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA



Plastic

OIL ANALYSIS

7022-83-551

CONTAINER IDENTITY

LABORATORY NUMBER

Chauvco Resources Ltd.

1 of 1

OPERATOR

PAGE

LSD 2-15-2-25 WPM

Chauvco Waskada 2-15-2-25

477.8

474.1

LOCATION

WELL OR SAMPLE LOCATION NAME

WELL ELEV

GRD ELEV

Waskada, Manitoba

Spearfish

FIELD OR AREA

POOL OR ZONE

SAMPLER

TEST TYPE & NO.

TEST RECOVERY

Wellhead

@ °C

POINT OF SAMPLE

AMT. & TYPE CUSHION

MUD RESISTIVITY

PUMPING

FLOWING

GAS LIFT

SWAB

874.0-879.0 m KB

WATER

m³/d

OIL

m³/d

GAS

m³/d

TEST INTERVALS OR PERFS

SEPARATOR RESERVOIR

@ °C
CONTAINER
WHEN SAMPLED

@ °C
CONTAINER
WHEN RECEIVED

SEPARATOR

PRESSURES, kPa

TEMPERATURES, °C

1983 07

1983 07 27

1983 07 28

BT

DATE SAMPLED (Y/M/D)

DATE RECEIVED (Y/M/D)

DATE ANALYSED (Y/M/D)

ANALYST

REMARKS

SAMPLE PROPERTIES

0.002		Trace	0.002
COLOR OF CLEAN OIL		WATER	TOTAL BS&W
GRAVITY		BS	
SPECIFIC		A.P.I.	@ 15.6°C
0.8418		36.6	
AS RECEIVED	AFTER CLEANING	AS RECEIVED	AFTER CLEANING
0.0079	Less than 0.002	POUR POINT	
TOTAL SULPHUR MASS FRACTION	TOTAL SALT kg/m ³	U.S.B.M.	A.S.T.M.
		+12°C	

CARBON RESIDUE

R.V.P. CONRADSON RAMSBOTTOM

VISCOSITY			
TEMP °C	mPa's	mm ² /s	
20	8.690	10.37	
30	4.785	5.758	
40	3.399	4.125	

REMARKS Density at 15.0°C = 841.3 kg/m³
Total Sulphur = 7.9 gm/kg

DISTILLATION

FRACTION DISTILLED	TEMP °C
0.05	87
0.10	106
0.15	125
0.20	146
0.25	172
0.30	192
0.35	220
0.40	242
0.45	267
0.50	288
0.55	309
0.60	324
0.65	345
0.69	353

ASTM	89.0
METHOD	BAROM. PRESS. kPa OF HG
20	46
ROOM TEMP. (°C)	INITIAL BOIL PT. (°C)

DISTILLATION SUMMARY

204°C NAPHTHA	274°C KEROSENE
0.30	0.69
343°C LIGHT GR.S./OIL	RECOVERED

0.30	0.01
RESIDUE	DISTILLATION LOSS

SPECIFIC GRAVITY

DISTILLATE	RESIDUE
BASE TYPE	
CHARACTERIZATION FACTOR	



CONTAINER IDENTITY

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY



LABORATORY NUMBER

C84-5093

OIL ANALYSIS

LICENCE NUMBER

OPERATOR NAME

PETRO-CANADA INC.

LOCATION

5-33-1-25 W1

WELL NAME

PCI et al Waskada 5-33-1-25

ELEVATION
E & Interval GAO

FIELD OR AREA

Waskada

POOL OR ZONE

NAME OF SAMPLER

J. Thom

COMPANY

TEST TYPE

NO

TEST RECOVERY

MULTIPLE
RECOVERY

7.36

SAMPLING POINT

AMT & TYPE OF CUSHION

MUD RESISTIVITY

Test Interval Interval

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

STAKE

PRODUCTION RATES

WATER

m³/d OILm³/d GAS10³ m³/d

Particulate Interval

SEPARATOR

TREATER

RESERVOIR

SOURCE

GAUGE PRESSURE

kPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

TEMPERATURE °C

DATE SAMPLED (Y-M-D)

DATE RECEIVED (Y-M-D)

DATE REPORTED (Y-M-D)

ANALYST

OTHER INFORMATION

1984-05-07

1984-05-08

S. Sargious

SAMPLE PROPERTIES

COLOR OF CLEAN OIL

Brown

WATER

Trace

S & W (VOLUME FRACTION)

SEDIMENT

0.025

TOTAL

0.025

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

0.839

AS RECEIVED

AFTER CLEANING

838

ABSOLUTE g/cm³TOTAL SULFUR
(MASS FRACTION)

0.0068

TOTAL SALT
g/m³POUR POINT
°C

USBN

+10

ASTM

CARBON RESIDUE
(MASS FRACTION)

RVP kPa

CONRADSON

RAMBOULTON

0.0277

VISCOSITY

TEMP °C

ABSOLUTE mPa.s

KINEMATIC mm²/s

20

5.86

7.01

40

3.44

4.18

50

2.86

3.50

DISTILLATION

METHOD

Hempel ASTM (D-285)

BAROM PRESS (kPa)

89.11

ROOM TEMP °C

25.0

DISTILLATION SUMMARY

(VOLUME FRACTION)

300°C
NAPHTHA

0.32

270°C
AEROSOL

0.16

300°C
LIGHT GAS OIL

RECOVERED

RESIDUE

DISTILLATION
LOSS

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE: Mixed

CANCER 309

CHARACTERIZATION FACTOR: 12.1

Total Sulfur: 6.8 g/kg

BS & W determined on sample as received. Remainder of analysis determined on sample after cleaning by centrifuging.



AGAT Engineering
BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION

P.B. #1

OIL ANALYSIS

LABORATORY NUMBER

6024

OPERATOR NAME

SASKO OIL LIMITED

UNIQUE WELL IDENTIFIER

2-16-1-25

WELL NAME

ELEVATIONS

RB m

GRD m

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TRI-R

TEST TYPE

NO

TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

WELLHEAD

AMT & TYPE OF CUSHION

MUD RESISTIVITY/II m

@ 25°C

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

10³ m³/d

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

GAUGE PRESSURE MPa

TEMPERATURE °C

DATE SAMPLED (Y-M-D)

84-01-04

DATE RECEIVED (Y-M-D)

84-01-16

DATE REPORTED (Y-M-D)

84-01-20

ANALYST

S.J.

OTHER INFORMATION

SAMPLE PROPERTIES

B.S. & W. (VOLUME FRACTION)

COLOR OF CLEAN OIL

BROWN

WATER

0.050

SEDIMENT

0.002

TOTAL

0.052

COLOR NUMBER ASTM D-155

D₈ A.S.T.M.

PERFORMED THE BS & W TEST ON THE
OIL PORTION ONLY.

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

AS RECEIVED

ABSOLUTE $\rho_{40} \times 10^3$

AFTER CLEANING

855.5

API GRAVITY @ 15°C = 33.75

TOTAL SULPHUR
(MASS FRACTION)

0.00646

TOTAL SALT g/m³

POUR POINT /°C

U.S.B.M.

A.S.T.M.

15

CARBON RESIDUE
(MASS FRACTION)

CONRADSON

RAMSBOTTOM

SWAPS

VISCOSITY

TEMP/°C	ABSOLUTE $\rho_{40} \times 10^3$	KINEMATIC $\nu_{40} \times 10^4$
20	9.99	11.77
30	5.70	6.78
40	4.12	4.94

DISTILLATION

METHOD

A.S.T.M. - D - 86*

INITIAL BOILING POINT: 62.5°C

AMB BAROM PRESSURE

89.4

ROOM TEMP./°C

21

DISTILLATION SUMMARY (VOLUME FRACTION)

200°C NAPHTHA	275°C KEROSENE	350°C LIGHT GAS OIL
0.300	0.470	0.615

RECOVERED	RESIDUE	DISTILLATION LOSS
0.92	0.006	0.02

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE:

CHARACTERIZATION FACTOR: 11.9

REMARKS: + This sample contained:
Free water= 23%, Oil= 77% by vol.
* The distillation temperatures have been
corrected to 101.3 kPa (abs).

VOLUME FRACTION	TEMP./°C
0.05	82.0
0.10	108.5
0.15	129.5
0.20	150.5
0.25	176.0
0.30	200.0
0.35	222.5
0.40	243.5
0.45	260.5
0.50	290.0
0.55	317.5
0.60	343.5
0.65	363.0
0.70	376.5
0.75	390.0
0.80	401.0
0.85	407.0
0.90	
0.95	
1.00	
F.B.P.	407.0
CRACKED	



AGAT Engineering
 BAY 1, 3650 - 21 ST. N.E.
 CALGARY, ALTA. T2E 6V6
 230-2477

CONTAINER IDENTIFICATION P.B. #6		OIL ANALYSIS		LABORATORY NUMBER 6024	
OPERATOR NAME SASKO OIL LIMITED					
UNIQUE WELL IDENTIFIER 3-22-1-25		WELL NAME		ELEVATIONS SS m ORD m	
FIELD OR AREA		POOL OR ZONE		NAME OF SAMPLER	
				TRI-R	
TEST TYPE	NO	TEST RECOVERY			
TEST INTERVAL OR PERFS <div style="border: 1px solid black; height: 80px; width: 100%;"></div>	SAMPLING POINT WELLHEAD		AMT & TYPE OF CUSHION		MUD RESISTIVITY @ 25° C
	- TYPE OF PRODUCTION -				
	<div style="display: flex; justify-content: space-around;"> PUMPING FLOWING GAS LIFT SWAB </div>				
PRODUCTION RATES					
WATER		OIL		GAS	
m³/d		m³/d		SPM	
SEPARATOR		TREATER		RESERVOIR	
GAUGE PRESSURE kPa					
TEMPERATURE °C					
DATE SAMPLED (Y-M-D)	DATE RECEIVED (Y-M-D)	DATE REPORTED (Y-M-D)	ANALYST		OTHER INFORMATION
84-01-04	84-01-16	84-01-20	S.J.		

SAMPLE PROPERTIES			
B.S. & W. (VOLUME FRACTION)			
COLOR OF CLEAN OIL	WATER	SEDIMENT	TOTAL
BROWN	0.0328	0.0040	0.0368
COLOR NUMBER ASTM D-155 BS & W TEST WAS PERFORMED ON THE D₈ A.S.T.M. OIL PORTION ONLY			
DENSITY			
RELATIVE		ABSOLUTE kg/m³	
AS RECEIVED	AFTER CLEANING	AS RECEIVED	AFTER CLEANING
			850.7

API GRAVITY @ 15°C = 34.68

TOTAL SULPHUR (MASS FRACTION)	TOTAL SALT g/m³	POUR POINT °C	
0.00783		U.S.B.M.	A.S.T.M.
			6

CARBON RESIDUE (MASS FRACTION)	
CONRADSON	RAMSBOTTOM

VISCOSITY		
TEMP/°C	ABSOLUTE/mPa.s	KINEMATIC/cSt
20	7.24	8.57
30	4.76	5.69
40	3.57	4.31

DISTILLATION		
METHOD		
A.S.T.M. - D - 86*		
INITIAL BOILING POINT: 71.0°C		
ABS BAROM PRESS/kPa	ROOM TEMP./°C	
88.6	22	
DISTILLATION SUMMARY (VOLUME FRACTION)		
200°C NAPHTHA	270°C KEROSENE	350°C LIGHT GAS OIL
0.265	0.410	0.565
RECOVERED	RESIDUE	DISTILLATION LOSS
0.87	0.11	0.02
RELATIVE DENSITY		
DISTILLATE	RESIDUE	
BASE TYPE:		
CHARACTERIZATION FACTOR: 12.0		

VOLUME FRACTION	TEMP./°C
0.05	99.0
0.10	122.5
0.15	144.0
0.20	164.0
0.25	193.0
0.30	219.5
0.35	244.0
0.40	271.5
0.45	295.5
0.50	321.5
0.55	344.0
0.60	366.5
0.65	376.5
0.70	387.5
0.75	398.5
0.80	407.5
0.85	
0.90	
0.95	
1.00	
F.B.P.	407.5
CRACKED	

REMARKS: + This sample contained:
 Free water= 66%, Oil= 34% by vol.
 * The distillation temperatures have been corrected to 101.3 kPa (abs).



AGAT Engineering
BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION

P.B. #3

OIL ANALYSIS

LABORATORY NUMBER

6024

OPERATOR NAME

SASKO OIL LIMITED

UNIQUE WELL IDENTIFIER

6-22-1-25

WELL NAME

ELEVATIONS

ES m ORD m

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TRI-R

TEST TYPE

NO

TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

AMT & TYPE OF CUSHION

MUD RESISTIVITY / (1 m @ 25° C

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

SP m³/d

GAUGE PRESSURE MPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

TEMPERATURE °C

DATE SAMPLED (Y-M-D)

84-01-04

DATE RECEIVED (Y-M-D)

84-01-16

DATE REPORTED (Y-M-D)

84-01-20

ANALYST

S.J.

OTHER INFORMATION

SAMPLE PROPERTIES

B.S. & W. (VOLUME FRACTION)

COLOR OF CLEAN OIL

BROWN

WATER

0.0048

SEDIMENT

0.0020

TOTAL

0.0068

COLOR NUMBER ASTM D-155

D₈ A.S.T.M.

BS & W TEST WAS PERFORMED ON THE OIL PORTION ONLY.

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

AS RECEIVED

ABSOLUTE $\rho_{40} = \text{m}^3$

849.8

API GRAVITY @ 15°C = 34.86

TOTAL SULPHUR (MASS FRACTION)

0.00830

TOTAL SALT g/m³

POUR POINT / °C

U.S.B.M.

A.S.T.M.

-6

CARBON RESIDUE (MASS FRACTION)

CONRADSON

RAMSBOTTOM

RYMAY

VISCOSITY

TEMP / °C	ABSOLUTE $\mu\text{Pa} \cdot \text{s}$	KINEMATIC mm^2/s
25	5.63	6.67
30	3.94	4.72
40	2.84	3.43

DISTILLATION

METHOD

A.S.T.M. - D - 86*

INITIAL BOILING POINT: 69.5°C

ABS BAROM PRESSURE

89.4

ROOM TEMP / °C

19

DISTILLATION SUMMARY (VOLUME FRACTION)

200°C NAPHTHA

0.265

275°C KEROSENE

0.420

350°C LIGHT GAS OIL

0.585

RECOVERED

0.93

RESIDUE

0.05

DISTILLATION LOSS

0.02

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE:

CHARACTERIZATION FACTOR: 11.9

+ This sample contained:

Free water = 66%, Oil = 34% by vol.

* The distillation temperatures have been corrected to 101.3 kPa (abs).

VOLUME FRACTION	TEMP. / °C
0.05	96.0
0.10	117.5
0.15	137.5
0.20	163.5
0.25	193.0
0.30	215.5
0.35	241.5
0.40	265.5
0.45	289.0
0.50	311.0
0.55	335.5
0.60	357.5
0.65	375.0
0.70	388.0
0.75	398.0
0.80	407.0
0.85	
0.90	
0.95	
1.00	
F.B.P.	407.0
CRACKED	



AGAT Engineering

BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION

P.B. #2

OIL ANALYSIS

LABORATORY NUMBER

6024

OPERATOR NAME

SASKO OIL LIMITED

UNIQUE WELL IDENTIFIER

9-33-1-36

WELL NAME

ELEVATIONS

KB m

ORD m

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TRI-R

TEST TYPE

NO

TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

WELLHEAD

AMT & TYPE OF CUSHION

MUD RESISTIVITY $\Omega \cdot m$

@ 25°C

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

10³ m³/d

GAUGE PRESSURE kPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

TEMPERATURE °C

DATE SAMPLED (Y-M-D)

84-01-04

DATE RECEIVED (Y-M-D)

84-01-16

DATE REPORTED (Y-M-D)

84-01-20

ANALYST

S.J.

OTHER INFORMATION

SAMPLE PROPERTIES

B.S. & W. (VOLUME FRACTION)

COLOR OF CLEAN OIL

BROWN

WATER

0.064

SEDIMENT

0.004

TOTAL

0.068

COLOR NUMBER ASTM D-155

D₈ A.S.T.M.

BS & W TEST WAS PERFORMED ON THE
OIL PORTION ONLY.

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

AS RECEIVED

ABSOLUTE $\rho_{40} \cdot m^{-3}$

AFTER CLEANING

851.1

API GRAVITY @ 15°C = 34.61

TOTAL SULPHUR
(MASS FRACTION)

0.00736

TOTAL SALT g · m⁻³

U.S.B.M.

POUR POINT /°C

A.S.T.M.

15

RVV%₅₀

CARBON RESIDUE

CONRADSON

RAMSBOTTOM

VISCOSITY

TEMP/°C	ABSOLUTE η mPa · s	KINEMATIC ν mm ² · s ⁻¹
25	7.32	8.67
30	4.57	5.47
35	3.46	4.18

DISTILLATION

METHOD

A.S.T.M. - D - 86*

INITIAL BOILING POINT: 72.5°C

ABS BARON PRESSURE

89.4

ROOM TEMP/°C

19

DISTILLATION SUMMARY
(VOLUME FRACTION)

200°C

NAPHTHA

0.285

270°C

KEROSENE

0.430

350°C

LIGHT GAS OIL

0.595

RECOVERED

0.89

RESIDUE

0.09

DISTILLATION

LOSS

0.02

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE:

CHARACTERIZATION FACTOR: 11.9

VOLUME FRACTION	TEMP./°C
0.05	93.0
0.10	118.0
0.15	136.5
0.20	158.0
0.25	177.5
0.30	205.5
0.35	233.0
0.40	256.5
0.45	281.0
0.50	305.5
0.55	331.5
0.60	352.5
0.65	369.0
0.70	383.5
0.75	393.0
0.80	402.0
0.85	
0.90	
0.95	
1.00	
F.B.P.	407.0
CRACKED	

REMARKS: + This sample contained:
Free water= 74%, Oil=25% by vol.
* The distillation temperatures have been
corrected to 101.3 kPa (abs).



AGAT Engineering
BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION

P.B. #5

LABORATORY NUMBER

6024

OIL ANALYSIS

OPERATOR NAME

SASKO OIL LIMITED

UNIQUE WELL IDENTIFIER

4-12-2-26

WELL NAME

ELEVATIONS
KB m GRD m

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TRI-R

TEST TYPE

NO

TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

WELLHEAD

AMT & TYPE OF CUSHION

MUD RESISTIVITY/11 m

@ 25 °C

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

MP m³/d

GAUGE PRESSURE MPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

TEMPERATURE °C

DATE SAMPLED (Y-M-D)

84-01-04

DATE RECEIVED (Y-M-D)

84-01-16

DATE REPORTED (Y-M-D)

84-01-20

ANALYST

S.J.

OTHER INFORMATION

SAMPLE PROPERTIES

S.S. & W. (VOLUME FRACTION)

COLOR OF CLEAN OIL

BROWN

WATER

0.0184

SEDIMENT

0.001

TOTAL

0.0194

COLOR NUMBER ASTM D-155

D₈ A.S.T.M.

BS & W TEST WAS PERFORMED ON THE
OIL PORTION ONLY.

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

AS RECEIVED

ABSOLUTE $\rho_{40} = \rho_{15}$

AFTER CLEANING

860.8

API GRAVITY @ 15°C = 32.73

TOTAL SULPHUR
(MASS FRACTION)

0.00949

TOTAL SALT g/m³

POUR POINT / °C
U.S.B.M. A.S.T.M.

12

CARBON RESIDUE
(MASS FRACTION)

CONRADSON

RAMSBOTTOM

VISCOSITY

TEMP / °C	ABSOLUTE $\mu\text{Pa} \cdot \text{s}$	KINEMATIC mm^2 / s
25	20.05	23.47
30	11.13	13.15
35	7.09	8.45

DISTILLATION

METHOD

A.S.T.M. - D - 86*

INITIAL BOILING POINT = 58.0°C

ABS BAROM PRESSURE

88.6

ROOM TEMP / °C

21

DISTILLATION SUMMARY
(VOLUME FRACTION)

200°C

NAPHTHA

0.290

275°C

KEROSENE

0.435

350°C

LIGHT GAS OIL

0.595

RECOVERED

0.85

RESIDUE

0.13

DISTILLATION
LOSS

0.02

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE:

CHARACTERIZATION FACTOR: 12.1

VOLUME FRACTION	TEMP / °C
0.05	84.0
0.10	107.5
0.15	127.5
0.20	147.0
0.25	176.5
0.30	203.5
0.35	232.0
0.40	258.0
0.45	284.5
0.50	308.0
0.55	337.0
0.60	352.0
0.65	381.0
0.70	392.5
0.75	402.5
0.80	
0.85	
0.90	
0.95	
1.00	
F.S.P.	407.5
CRACKED	

REMARKS: + This sample contained:
Free water = 33%, Oil = 67% by vol.
* The distillation temperatures have been
corrected to 101.3 kPa (abs).

January 28, 1985

Omega Hydrocarbons Ltd.
Box 130
Waskada, Man.
ROM 2E0

Dear Sir:

Re: Omega Waskada 11-30-1-25 (WPM)

Enclosed please find the results of density and sulphur content analysis performed on a crude oil sample obtained from the subject battery.

There is no charge for this analysis.

Yours sincerely,

L. R. Dubreuil
Chief Petroleum Engineer
Petroleum Branch

LRD/sb
Encls.

MANITBA
DEPARTMENT OF ENERGY AND MINES
MINERAL RESOURCES DIVISION
PETROLEUM BRANCH
975 Century Street
Winnipeg, Manitoba
R3H 0W4

Analysed by: NEMBHARD/LIPINSKY
Methods: Density HYDROMETER Sulphur LECO

Analysis Charges: _____ **samples @ \$50.00/sample \$**

Analysis Certified by

Prepared by



AGAT Engineering

BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION

P.B. #4

OIL ANALYSIS

LABORATORY NUMBER

6024

OPERATOR NAME

SASKO OIL LIMITED

UNIQUE WELL IDENTIFIER

13-15-1-25

WELL NAME

ELEVATIONS

MSL GRD m

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TRI-R

TEST TYPE

NO

TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

WELLHEAD

AMT & TYPE OF CUSHION

MUD RESISTIVITY/11 m

@ 25 °C

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

WPM

OIL

WPM

GAS

WPM

GAUGE PRESSURE MPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

TEMPERATURE °C

DATE SAMPLED (Y-M-D)

84-01-04

DATE RECEIVED (Y-M-D)

84-01-16

DATE REPORTED (Y-M-D)

84-01-20

ANALYST

S.J.

OTHER INFORMATION

SAMPLE PROPERTIES

S.E. & W. (VOLUME FRACTION)

COLOR OF CLEAN OIL

BROWN

WATER

0.100

SEDIMENT

0.004

TOTAL

0.104

COLOR NUMBER ASTM D-155

D₈ A.S.T.M.

BS & W TEST WAS PERFORMED ON THE
OIL PORTION ONLY.

RELATIVE

DENSITY

AS RECEIVED

AFTER CLEANING

AS RECEIVED

ABSOLUTE $\rho_{40} \pm 0.1$

AFTER CLEANING

851.3

API GRAVITY @ 15°C = 34.57

TOTAL SULPHUR
(MASS FRACTION)

0.00647

TOTAL SALT g/m³

POUR POINT /°C

U.S.B.M.

A.S.T.M.

12

CARBON RESIDUE

(MASS FRACTION)

CONRADSON

RAMSBOTTOM

INMPa

VISCOSITY

TEMP/°C	ABSOLUTE $\mu\text{Pa}\cdot\text{s}$	KINEMATIC mm^2/s
20	7.86	9.30
30	5.54	6.62
40	4.12	4.97

DISTILLATION

METHOD

A.S.T.M. - D - 86*

INITIAL BOILING POINT: 64.5°C

ABS BAROM PRESSURE

89.4

ROOM TEMP./°C

20

DISTILLATION SUMMARY
(VOLUME FRACTION)

200°C
NAPHTHA

275°C
KEROSENE

350°C
LIGHT GAS OIL

0.285

0.425

0.585

RECOVERED

0.89

RESIDUE

0.09

DISTILLATION
LOSS

0.02

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE:

CHARACTERIZATION FACTOR: 12.0

REMARKS: + This sample contained:
Free water= 29%, Oil= 71% by vol.
* The distillation temperatures have been
corrected to 101.3 kPa (abs).

VOLUME FRACTION	TEMP./°C
0.05	93.0
0.10	115.5
0.15	136.0
0.20	157.5
0.25	183.5
0.30	208.5
0.35	232.5
0.40	258.5
0.45	284.0
0.50	308.5
0.55	334.5
0.60	355.5
0.65	372.0
0.70	381.0
0.75	391.0
0.80	403.0
0.85	
0.90	
0.95	
1.00	
F.B.P.	407.0
CRACKED	