1. Description of the service

1.1 Executive overview

The *Services* make provision for the sampling, gauging and fuel analysis of thirteen (13) diesel tanks on a three monthly basis for Density @20 Deg C, Appearance, Colour, Water Content, Carbon Residue, Total Contamination, Total Sulphur, Flash Point Pensky- Martens, Oxidation Stability, Microbiology and Total Ash (Acacia and Port Rex only).

On a yearly basis an additional sample and analysis is required for Carbon, Hydrogen content, Nitrogen Content and Oxygen Content.

Acacia Power Station situated in Edgemead drive, Edgemead, Capetown. (2 Tanks)

Tank 1&2 at Port Rex power station has 500 000 litres each with diesel fuel in both tanks.

Ankerlig Power Station situated in Neil Hare Road, Atlantis. (5 Tanks)

Ankerlig 1 has two tanks (tank A and B) of 2.7 million litres each that were commissioned in 2006. Ankerlig 2 has two tanks (tank 1 and 2) of 2.7 million litres each and one tank (tank 3) of 5.4 million litres. All three tanks were commissioned in 2007. The height of the tanks is 16800 mm.

Gourikwa Power Station Situated on The N2 East, Mosselbay. (4 Tanks)

Gourikwa OCGT plant has two tanks (tank A and tank B) of 2.7 million litres each that were commissioned in 2006. Gourikwa Gas 1 plant has two tanks (tank C and tank D) of 2.7 million litres each that were commissioned in 2007. Tank C is a duty tank and D is a storage tank that can be used as duty tank as well.

Port Rex Power Station situated in Wells Road, Woodbrook, East London. (2 Tanks)

Tank 1&2 at Port Rex power station has 500 000 litres each with diesel fuel in both tanks.

1.1.1 Tank specification

All tanks are of fixed roof types

1.1.1.1 Ankerlig Detailed specification

QTY	Capacity	Internal Diameter	Height
4	2.87 million litres	14750mm	16800mm
1	5.818 million litres	21000mm	16800mm

2.87 million litre tank specification

Tank Parameter	Value
Design standard	API650:1998 ADDENDUM 4:2005
Nominal diameter	14750 mm
Nominal Height	16800 mm
Nominal Capacity	3054.9 m^3
Design product density	0.85 kg/m^3
Maximum Design liquid level	16800 mm
Design pressure	0.00/-0.25 kPa(g)
Design Temperature Max/Min	90/10 DMT°C
Material of Construction	SANS 1431 GR 300 WA

5.818 million litre tank specification

Tank Parameter	Value
Design standard	API650, 11th Edition, June 2007
Nominal diameter	21000mm
Nominal Height	16800mm
Nominal Capacity	5400 m^3
Design product density	0.85 kg/m^3
Maximum Design liquid level	16800mm
Design pressure	0.00/-0.25 kPa(g)
Design Temperature Max/Min	90/10 DMT°C
Material of Construction	SANS 1431 GR 300 WA

1.1.1.2 Gourikwa Detailed specification

QTY	Capacity	Internal Diameter	Height
4	2.87 million litres	14750mm	16800mm

2.87 million litre tank specification

Tank Parameter	Value
Design standard	API650:1998 ADDENDUM 4:2005
Nominal diameter	14750 mm
Nominal Height	16800 mm
Nominal Capacity	3054.9 m^3
Design product density	0.85 kg/m^3
Maximum Design liquid level	16800 mm
Design pressure	0.00/-0.25 kPa(g)
Design Temperature Max/Min	90/10 DMT°C
Material of Construction	SANS 1431 GR 300 WA

1.1.1.3 Acacia Detailed specification

QTY	Capacity	Internal Diameter	Height
2	500 000 litres	10000mm	6500mm

500 000 litre tank specification

Tank Parameter	Value
Design standard	B2654: 1973
Nominal diameter	10000mm
Nominal Height	6500mm
Nominal Capacity	510 m^3
Design product density	0.87 kg/m^3
Maximum Design liquid level	6500mm
Design pressure	0.00/-0.25 kPa(g)
Design Temperature Max/Min	0 – 37 Deg C
Material of Construction	43A

1.1.1.4 Port Rex Detailed specification

QTY	Capacity	Internal Diameter	Height
2	500 000 litres	10000mm	6500mm

500 000 litre tank specification

Tank Parameter	Value
Design standard	B2654: 1973

Nominal diameter	10000mm
Nominal Height	6500mm
Nominal Capacity	510 m3
Design product density	0.87 kg/m3
Maximum Design liquid level	6500mm
Design pressure	0.00/-0.25 kPa(g)
Design Temperature Max/Min	0 – 37 Deg C
Material of Construction	43A

1.1.2 Required analysis required from the *Contractor*

Property	International test METHOD	Freq	ACP	ANP	GOP	PRX	Total Qty
Density @20 Deg C	ASTM 4052	3M	2	5	4	2	13
Appearance	ASTM 4176	3M	2	5	4	2	13
Colour	ASTM D 1500	3M	2	5	4	2	13
Water Content	ASTM D 1364 / D 4377 / D 1744 / D 95	3M	2	5	4	2	13
Carbon Residue	ASTM D 189 / D 4530 / D524 - IP 14	3M	2	5	4	2	13
Total Contamination	IP 440	3M	2	5	4	2	13
Total Sulphur	ASTM D 4294 / D 5453 / D 2622 - IP 336	3M	2	5	4	2	13
Flash Point Pensky- Martens	ASTM D 93-Proc-A	3M	2	5	4	2	13
Oxidation Stability	ASTM D 2274 - IP 388	3M	2	5	4	2	13
Microbiology	ASTM D 6469 (Cult Dip Combi)	3M	2	5	4	2	13
Total Ash	(ASTM D382)	3M	2	0	0	2	4
Carbon, Hydrogen & Nitrogen Content	(ATSM D 5291)	1Y	1	1	1	1	4
Oxygen Content	(ATSM D 5291 M)	1Y	1	1	1	1	4

1.1.3 Gauging

The contractor shall perform manual gauging using a certified tape and plumb bob with water-finding paste on the Peaking stations diesel tanks to calculate the exact tank level. The gauging test is done during the same time as the three monthly sampling.

Gauging	Freq	ACP	ANP	GOP	PRX	Total Qty
Tank	3M	2	5	4	2	13

1.2 *Employer's* requirements for the service

The *Contractor* shall provide all labour, materials, equipment, parts, supervision, and transportation necessary to provide for the requirements of this *Service* contract.

The *Contractor* shall make necessary provisions in all rates to consider these requirements as no claims for extras arising from these matters will be subsequently entertained or admitted.

1.3 Interpretation and terminology

Abbreviation	Meaning given to the abbreviation
/H	Per hour
ASTM	American Society for Testing and Materials
Deg C	Degrees Celsius
DMT°C	Design Temperature Max/Min
kg/m3	Kilogram per Cubic Meter
kPa(g)	Kilopascals Gauge
m3	Cubic Meter
mm	Millimetre
OCGT	Open Cycle Gas Turbine
SANS	South African National Standards
SDS	Hazardous Chemical Safety Data Sheet