

APPENDIX 4

Nicholas Vella

‘Il-Kwartett’

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Date Of Birth: 19.09.1980

Status: Single

Employment History

- **September 2007 – present day**

Employed with **WasteServ Malta Ltd.** as a Gas Engineer, and recently promoted to the position of **Sr. Gas Engineer**.

My principal responsibility is the role of **Project Leader** (and temporary Project Manager) of the ‘*Rehabilitation of disused Landfills*’, a €26 million EU funded project aimed at restoring the former Maghtab, Qortin and Marsascala rubbish dumps, thus reducing their negative environmental impact. To date, I have successfully seen the project through the design stage and secured the respective EU funding. The project is currently in the tender adjudication stages. Project completion is expected by 2013.

As Gas Engineer I was directly responsible for the setting up and management of the ‘**Aerial Emissions Control Unit**’, a unit which consists of a number of specialised technicians (currently 4) and fitters trained to manage and maintain the gas extraction and treatment systems within WasteServ’s facilities. This function was part of the requirements set in the recently completed ‘Aerial Emissions Control Project’, a €9.2 million EU funded project.

The unit has been recently entrusted with the responsibility to perform **Environmental monitoring** sampling and resources upkeep duties. EM is performed within all of WasteServ’s sites mainly (but not limited to) the Sant Antnin Waste Treatment Plant (Material Recovery and Digestion), Marsa Thermal Treatment plant, Civic Amenity sites and all landfills.

Amongst the duties of the Sr. Gas Engineer are the design and implementation of the gas extraction and treatment projects, include the forthcoming Ta’ Zwejra and the Ghallis engineered landfill. This project will shortly see to the recovery of energy in the order of 750kW from landfill gas.

Included in my responsibilities is also the management of WasteServ’s ‘**Renewable Energy Program**’, a drive by the company to reduce the Carbon footprint of its facilities through the promotion of alternative sources of energy. Amongst the completed projects are the three Wind Turbines and Solar Panels installations (to the combined order of 25 kWp) at the Civic

Amenity sites around the island. Completion of other larger initiatives, including a PV park at the former Qortin dump is expected by 2013.

Prior to the engagement as Project Leader, I was also the main coordinator for the various **R&D initiatives** and a member of the '*Waste to Energy*' committee, whose scope was to evaluate the feasibility of introducing new technologies within the various waste management streams. The latter required a wide spread knowledge of most of the company's activities and a strong link to academia, which is still pertinent to date.

- **November 2003 – September 2007**

Worked for **Baxter Malta Ltd.** as an **R&D Engineer**. The principal job responsibility was to translate market feedback into the design of new medical devices. In general, project management tasks related to the development and implementation of such devices falls also under the responsibility of the R&D Engineer.

Implementation of such devices was usually achieved through research of new production and assembly technologies, materials etc. and covered factory wide operations such as injection moulding, extrusion, automation and packaging amongst others.

Other responsibilities included certifying the new (or modified) medical components to very strict standards such as those imposed by ISO, the FDA (Federal Drug Agency) and EP (European Pharmacopoeia).

- **August 2002 – October 2002**

Worked for **Toly Products Ltd.** as an **R&D consultant**. The job involved research and design of an improved opening/closing mechanism together with the realisation of a concept prototype. The project had a deadline; it was carried out under minimal supervision and was executed successfully. A subsequent version of the prototype was eventually successfully released to the market.

Other Jobs

- **June 2001 – September 2001:** Worked for Mobisle Comunications Ltd. (Go Mobile). The job entailed examining and verifying customer claims for technical faults in mobile phones and liaising with the client thereafter.
- **June 2000 – September 2000:** Followed a summer work phase with Enemalta. This included tuition on basic processes like welding and industrial machining as well as some basic electric and electronic circuitry.
- **June 1999 – November 1999:** Worked for Air Malta plc as an air steward, gaining experience in interpersonal skills, both local and foreign, thus becoming quite versed in handling different customs and currencies, besides the valuable art of dealing with difficult and sensitive characters.

Academic Qualifications

- **MBA** degree from the University of Malta, 2003-2006.

Relevant Topics Covered: Project Management, Operations Management, Accounting and Finance, HRM, Strategic Management, Industrial Relations, Management Science, Globalisation and Trade, Service management, Marketing, Entrepreneurship.

Thesis entitled ‘Malta as a Knowledge Based Economy – The development of Malta as an R&D Centre’ and supervised by Mr. N. Massa.

The study examined how the current R&D structure in the local industry compares to that within other countries (not only European, but also emerging economies), eventually short-listing the pitfalls that are keeping Malta from becoming the ideal R&D haven.

- **B.Eng (Hons)** degree (2nd class) Mechanical Major from the University of Malta, 2003.

Relevant Topics Covered: Fluid Mechanics, Heat Transfer, Power Plant Generation, Refrigeration and Psychometrics, Desalination, Vibration Analysis, Materials in Design, Finite Element Analysis, Structures, Hypothesis Testing, Control Systems, Mechatronics, Physical Metallurgy, Engineering Design and Computer Aided Design.

Thesis entitled ‘Further Studies on the Pulse Jet Engine’ and supervised by Prof. P. Farrugia

The project objective was to investigate why an existent engine (part of a previous year project) failed to operate. This involved research in various engineering domains, particularly a geometric, thermo/aero dynamic and an acoustic/vibratory approach. The engine was modified to function correctly and was also exhibited for public viewing at the Engineering Projects Exhibition 2003.

- **A-Levels** in Physics and Pure Maths, and intermediate levels in Applied Maths, Marketing and Italian.

Other Qualifications

- **Engineering Warrant** – no. 907
- **PADI – Advanced Open Water Diver**
- **TDI – Advanced Nitrox Diver**
- **Wireman’s License A and B** (both unwarranted) from the Malta Resource Authority 2002 - 2003

Achievements

- Elected as Vice President of Aegee-Valletta (September 07 till October 08).
Aegee-Valletta is the local representative antennae of Aegee-Europe, a youth organisation representing over 19000 members, whose main focus is to encourage youth mobilisation and integration within the European continent.
- Winner of 'KBIC Award for Manufacturing Engineering Design' 2002.
The project involved the realization of a compact cosmetic case. Despite being designed for ease of manufacture, the case boasted a number of innovative features ranging from its opening and closing mechanisms to its shape. The project was conducted together with two other students.

Skills

- **Languages**
Fluent in Maltese, English and Italian.
Basic knowledge of French and Spanish.
- **Computer Literacy**
Software Packages: Microsoft Office, Pro-Engineer, AutoCAD and Inventor, 3d Studio
Operating Systems: Microsoft Windows, Linux

Interests

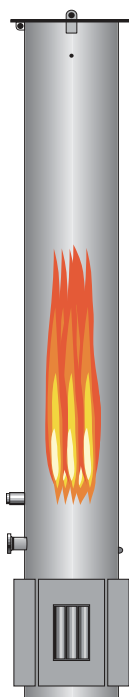
- **Travelling.** Travelled extensively in Europe (central, western and eastern) with the occasional long haul trip out of the continent. Particularly fond of small and remote villages rather than capital cities.
- **Sport.** I enjoy playing competitive sports both as an individual player, as the case in squash and as a team, particularly rugby. Cycling is also a favourite, besides the occasional weekend camping and trek.
- **Diving.** A skilled diver in the local waters, with some experience in foreign waters too. Amongst the collection of 100+ logged dives, one may find a variety of reef, wreck and deep (65m) dives.
- **Electronics and Gadgets.** As any respectable engineer, I try to keep myself up to date with the latest gadgets and terminology.
- **Geology.** Fond of the 'earth's treasures', having a minerals and gemstones collection exceeding 200 pieces.

APPENDIX 5

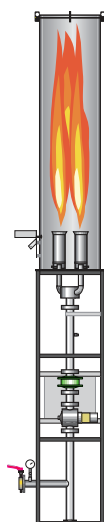


Biogas Flare Stacks

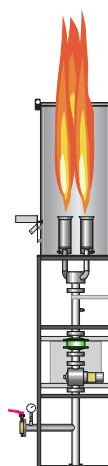
Standard flares for the disposal of biogas



Typ HT



Typ LTU



Typ LTO

HAASE Energietechnik AG & Co. KG

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24539 Neumuenster, Germany
Phone +49 (0) 4321 / 878-0
Fax +49 (0) 4321 / 878-29
info@haase-energietechnik.de
www.haase-energietechnik.de

Certification:

- DIN EN ISO 9001 : 2008 (Quality)
- DIN EN ISO 14001 : 2009 (Environm. Protection)
- BS OHSAS 18001 : 2007 (OSH & Health Protection)
- Specialist acc. to § 19 I WHG (Water Treatment)
- Welding Specialist acc. to DIN EN ISO 3834-2
- DVGW Specialist acc. to GW 301 (Pipeline Constr.)

Designs

HT	~1,000 to 1,200°C Exhaust temperature	Concealed high-temperature combustion Defined flue gas retention time: 0.3 sec., acc. to „TA-Luft“ Flare stack: Galvanized steel Optional: Stainless steel, multiple burner system for higher ranges of control
LTU	~800°C	Exhaust temperature: ~800°C Concealed combustion Flare stack: Stainless steel
LTO	~800°C	Exhaust temperature: Open combustion with visible flame Flare stack: Stainless steel

Flare Stacks

High-temperature combustion of biogas, landfill gas, contaminated industrial gas and process air

High-temperature combustion with a HAASE flare stack is a suitable solution for the treatment of all kind of contaminated gas. This also applies to highly corrosive gas and process air that would not burn its own.

Standard applications are landfill gas, biogas, sludge gas and industrial process gas. Low calorific value gas is mixed with auxiliary gas (e.g. propane) before it enters the flare unit. For the disposal of landfill gas from old landfills and contaminated process air a HAASE Lean Gas Flare or a VocsiBox® is the ideal solution.

With the development of a special burner technology HAASE Energietechnik succeeded in setting new standards for the high-temperature combustion of contaminated gas. Moreover, HAASE flare units excel by virtue of their integrated waste heat recovery. The waste heat can be used to heat facilities on site and/or buildings located nearby.



At a defined fuel gas residence time HAASE flare stacks burn contaminated gas at temperatures of 850 to 1,250°C

Two different product lines of HAASE flare stacks are available:

1. LT flare stacks

- Simple flare, burning chamber not insulated
- For gases that are not subject to specific emission limits (e.g. sludge gas, biogas)
- If temperature regulation is not required for the exhaust gas

2. HT flare stacks for temperatures of up to 1,250°C

- High-temperature flare with reinforced insulation in the burning chamber and with an extended range of control

- For gases that require combustion and exhaust temperatures of up to 1,250°C and a minimum flue gas residence time of more than 0.3 seconds (e.g. landfill gas or highly contaminated industrial process air, according to TA-Luft standard and UK Guideline)
- If ranges of control of 1:5 to 1:10 are required

Odourless and invisible

HAASE flare units are an environmentally safe solution to keep control of emissions. They do not produce odours and have no visible flame. HAASE flares are both reliable and sustainable. And by virtue of their modern burner technology they work on a low-noise level.

HAASE flare units are pre-assembled and subject to test runs at works before they are finally delivered to the customer. Therefore, installation and commissioning on site will only take little time.

Test a flare before you buy it!

You can rent a mobile HAASE flare stack to test its efficiency. The results are convincing. Mobile flares are most suitable for applications limited in time, i.e. degasifying tests, protective degassing and for the disposal of gas in emergency situations. You can also buy these facilities second-hand. Don't hesitate to [ask!](#)



[Biogas Flare Stacks: Standard flares for 50 to 4,000 m³/h](#) (PDF, 105.69 KB)

Page last modified on 2011-02-15 17:16



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Date	ZWEJRA MONITORING (Flare 1)	CH4 %	CO2 %	O2 %	H2S	CO	Flow m3/hr
1/20/2012		39.9%	34.0%	0.8%	81	500+	
1/21/2012		-	-	-	-	-	
1/22/2012		-	-	-	-	-	
1/23/2012		39.8%	33.8%	0.7%	91	500+	
1/24/2012		32.8%	31.2%	1.2%	58	500+	
1/25/2012		31.5%	30.8%	1.4%	39	500+	
1/26/2012		28.3%	28.6%	1.8%	19	500+	
1/27/2012		26.0%	28.0%	1.8%	36	500+	
1/28/2012		27.0%	28.1%	1.6%	56	500+	
1/29/2012		-	-	-	-	-	
1/30/2012		26.7%	27.9%	1.9%	36	500+	
1/31/2012		26.2%	27.7%	1.6%	34	500+	
2/1/2012		25.5%	26.8%	2.1%	32	500+	
2/2/2012		25.9%	27.0%	2.1%	31	500+	
2/3/2012		Flare is switched OFF.					
2/4/2012		-	-	-	-	-	
2/5/2012		-	-	-	-	-	
2/6/2012	am	41.4%	36.3%	0.5%	71	500+	
2/6/2012	pm	34.3%	33.4%	0.9%	52	500+	
2/7/2012		29.4%	30.4%	1.5%	36	500+	
2/8/2012		27.1%	29.1%	1.8%	40	500+	
2/9/2012		25.5%	28.1%	1.7%	35	266	
2/10/2012		Flare is switched OFF.					
2/11/2012		Flare is switched OFF.					
2/12/2012		Flare is switched OFF.					
2/13/2012		-	-	-	-	-	
2/14/2012		Flare is switched OFF.					
2/15/2012		31.0%	31.0%	1.2%	38	500+	
2/16/2012		28.0%	29.4%	1.8%	35	500+	
2/17/2012		Flare is switched OFF.					
2/18/2012		Flare is switched OFF.					
2/19/2012		Flare is switched OFF.					
2/20/2012		41.3%	35.1%	0.5%	73	500+	
2/21/2012		-	-	-	-	-	
2/22/2012		28.7%	29.1%	1.9%	49	500+	
2/23/2012		26.1%	28.8%	1.6%	41	500+	
2/24/2012		Flare is switched OFF.					
2/25/2012		Flare is switched OFF.					
2/26/2012		Flare is switched OFF.					
2/27/2012		31.0%	30.6%	1.4%	48	500+	
2/28/2012		-	-	-	-	-	
2/29/2012		28.3%	29.4%	1.5%	53	500+	111m3/hr
3/1/2012		28.8%	28.1%	2.1%	33	105	116m3/hr
3/2/2012		28.9%	28.7%	1.2%	55	88	112m3/hr
3/3/2012		-	-	-	-	-	
3/4/2012		-	-	-	-	-	
3/5/2012		Flare is switched OFF.					

3/6/2012				Flare is switched OFF.		
3/7/2012				Flare is switched OFF.		
3/8/2012	42.5%	35.5%	0.6%	144	300	112m3/hr
3/9/2012	32.7%	31.6%	0.6%	57	5000+	114m3/hr
3/10/2012	-	-	-	-	-	
3/11/2012	-	-	-	-	-	
3/12/2012	25.0%	27.8%	1.2%	38	5000+	109m3/hr
3/13/2012	24.9%	27.3%	1.3%	33	5000+	109m3/hr
3/14/2012				Flare is switched OFF.		
3/15/2012				Flare is switched OFF.		
3/16/2012				Flare is switched OFF.		
3/17/2012				Flare is switched OFF.		
3/18/2012				Flare is switched OFF.		
3/19/2012				Flare is switched OFF.		
3/20/2012				Flare is switched OFF.		
3/21/2012				Flare is switched OFF.		
3/22/2012				Flare is switched OFF.		
3/23/2012				Flare is switched OFF.		
3/24/2012				Flare is switched OFF.		
3/25/2012				Flare is switched OFF.		
3/26/2012				Flare is switched OFF.		
3/27/2012	44.4%	34.3%	1.1%	63	0	109m3/hr
3/28/2012	-	-	-	-	-	
3/29/2012				Flare is switched OFF.		
3/30/2012				Flare is switched OFF.		
3/31/2012				Flare is switched OFF.		
4/1/2012				Flare is switched OFF.		
4/2/2012	-	-	-	-	-	
4/3/2012	38.4%	32.4%	1.5%	55	0	109m3/hr
4/4/2012	32.5%	30.3%	1.7%	84	0	109m3/hr
4/5/2012	-	-	-	-	-	
4/6/2012				Flare is switched OFF.		
4/7/2012				Flare is switched OFF.		
4/8/2012				Flare is switched OFF.		
4/9/2012				Flare is switched OFF.		
4/10/2012				Flare is switched OFF.		
4/11/2012				Flare is switched OFF.		
4/12/2012				Flare is switched OFF.		
4/13/2012				Flare is switched OFF.		
4/14/2012				Flare is switched OFF.		
4/15/2012				Flare is switched OFF.		
4/16/2012	-	-	-	-	-	
4/17/2012	-	-	-	-	-	
4/18/2012	37.8%	32.8%	1.5%	62	0	100m3/hr
4/19/2012	33.1%	30.3%	1.5%	56	0	100m3/hr
4/20/2012	31.6%	29.6%	1.9%	55	0	
4/21/2012				Flare is switched OFF.		
4/22/2012				Flare is switched OFF.		
4/23/2012	47.4%	36.1%	0.6%	112	0	100m3/hr
4/24/2012	33.7%	30.7%	1.6%	70	0	100m3/hr
4/25/2012	-	-	-	-	-	
4/26/2012	-	-	-	-	-	
4/27/2012	-	-	-	-	-	
4/28/2012				Flare is switched OFF.		
4/29/2012				Flare is switched OFF.		
4/30/2012				Flare is switched OFF.		

[illegible]



- NOTES

FINAL

TAZWEJRA LANDFILL
CLOSURE PLAN
INTERMEDIATE CAPPING AND
GAS MANAGEMENT SYSTEM

CAPPING EXISTING WELL/CHAMBER DETAILS

Scott Wilson
Royal Court
Basil Close, Chesterton
Derbyshire, S41 7SL
Telephone (01246) 209221
Fax (01246) 209229
www.scottwilson.com

The logo for Scott Wilson, featuring the company name in white serif font on a red background. The word 'Scott' is on the top line and 'Wilson' is on the bottom line, both slightly overlapping. The background is a red parallelogram shape.

Drawing Number
D117657/TZ/CAP/02

Works Supervisor:

Inventory Date:

Review Date:

Works Supervisor:

Review Date:

REGULATING LAYER SURFACE ACCEPTANCE



Project: Intermediate Capping Works
Location: Ta'Zwejra Landfill, Malta Landfill
Client: WasteServ Malta Ltd
Contractor:

Date:	
Sub-Grade Area: (Grid Reference)	
Comments:	
Inspection Personnel:	
Any Remediation Works Completed:	
Certification:	Works Supervisor..... Signature.....

SITE DIARY



Project: Intermediate Capping Works

Location: Ta'Zwejra Landfill, Malta

Client: WasteServ Malta Ltd

Contractor:

Date:		Time Arrive:	
		Time Depart:	
Weather:			
Personnel on Site:			
Visitors:			
Plant/Equipment Used:			
Description of Works:			
Testing / Agreements and Discussions:			

Works Supervisor.....

Signed.....

SKETCH RECORD (Panel Layout) No. TITLE:

Project Title: Ta 'Zwejra Landfill-Closure Plan

Location: Ta 'Zwejra Landfill, Malta

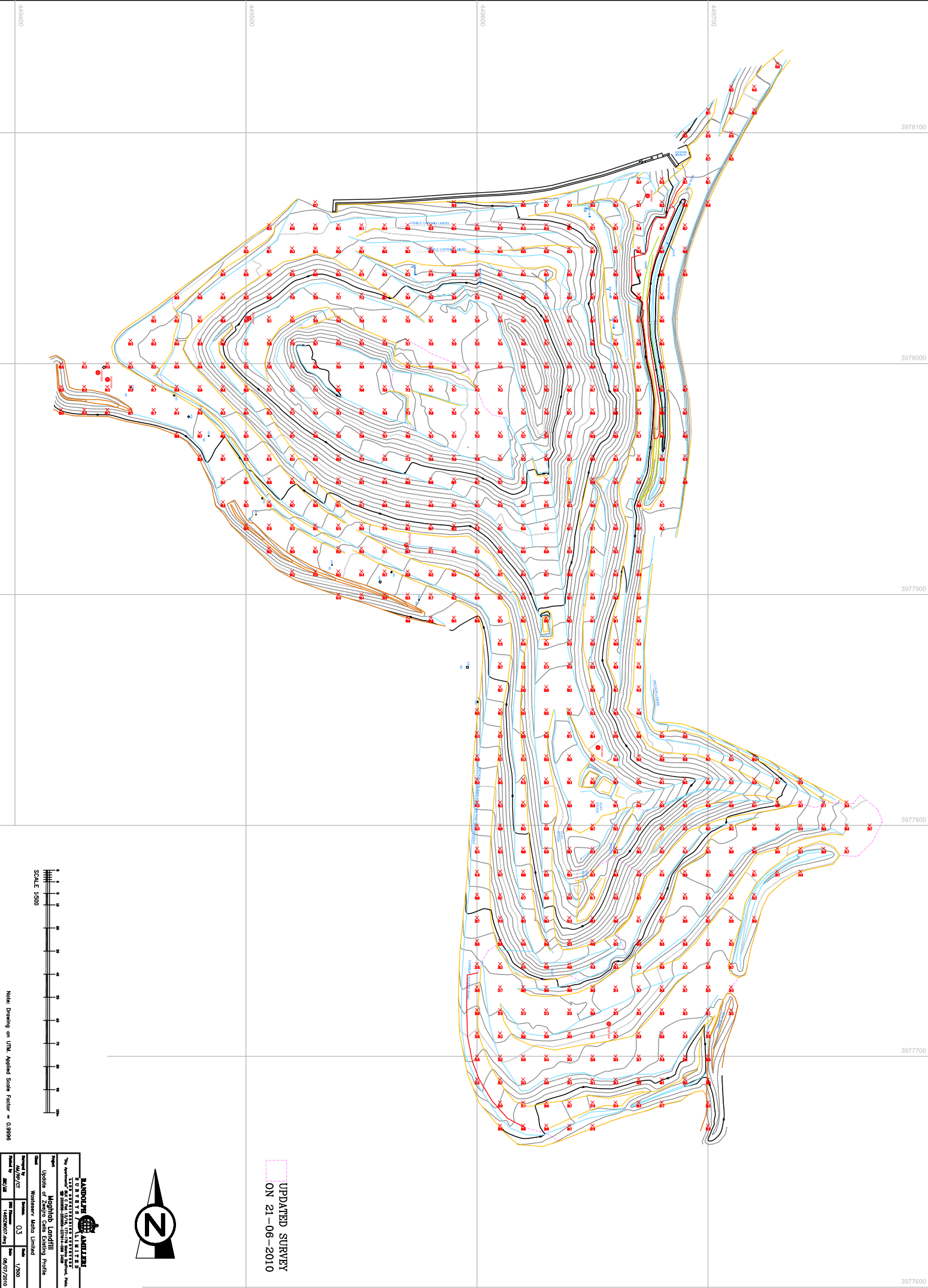
Client: WasteServ Malta Ltd

Contractor:

Date:



ANNEX 2



Clarifications on Annex 2 submitted to MEPA in May 2011

- 1. Please highlight (on a site plan of the landfill) the areas with remaining void space, indicating the amount of void space in each area, and differentiating between pre-settlement and post-settlement profiles.**

Kindly note the following:

- The areas with remaining void space are indicated in drawing D117657_TZ_M_04 provided in Annex 3 of the original submission dated 12/10/10. Areas indicated in yellow are still to be filled up whilst area indicated in blue are where 'cut' operations are to be conducted. The quantities are as follows:
 - The pre-settlement profile is drawing 1465ZW007 2d (Update 21-06-10) Model (1) provided in Annex 2 of the original submission.
 - The post-settlement profile is drawing D112657_TZ_M_03_RevB provided in Appendix 3 of the present submission.

- 2. Submit a plan of the landfill showing the final proposed post-settlement profile.**

The post-settlement profile is drawing D112657_TZ_M_03_RevB provided in Annex 3 of the present submission.

- 3. Please confirm whether any further infilling is proposed to take place and if so, give details, including regarding what materials are proposed to be infilled and corresponding EWC codes.**

Apart from the 'cut' and 'fill' operations as indicated in drawing D117657_TZ_M_04 provided in Annex 3 of the original submission dated 12/10/10, a volume of approx. 28,688 m³ is still available. This shall be utilised for the deposit of municipal solid waste (EWC 20 03 01).

- 4. Please give projected timeframes for infilling of the remaining volume (28,688 m³) and timeframes as per updated survey dated 21 June 2010.**

The remaining volume shall be infilled by October 2012.