

Inspection and test plan – earthing installation

**Project no.**  CC0398 **Project name**  VIVA Energy ULSG **Approved by**  Ari Birch

**ITP no.**  ITP037 **Revision no.**  C **Revision date** 24/04/2024 **Plant and equipment used** Excavators, Bobcats, Moon Buggy, Watercart

# Lot no. Estimated qty Location (chainages, detailed description or marked up plan)

Attach Dockets, Certificates and QA Documents to ITP

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|  | | | | | **Verify or test by** | | | | **Remarks / record (eg. test frequency, reports, certificates, checklist etc)** |
| **Symal Infrastructure** | | **VIVA** | |
| **Item no.** | **Activity** | **Ref docs** | **Acceptance criteria** | **Frequency** | **Key** | **Sign date** | **Key** | **Sign date** |
| **1.0 Pre-start activities** | | | | | | | | | |
| **1.1** | Set out | Composite Drawings | Is the position of the pipe in accordance with the drawings?  IFC and latest available revision used? | * Yes ☐ No ☐ N/A | H |  | W |  |  |
| **1.2** | IFC Submission & Approval | Composite Drawings | Is IFC Construction Drawing and Most Current Revision Approved by the client? | * Yes ☐ No ☐ N/A | H |  | H |  |  |
| **1.3** | Permits | Symal Safety Procedure | Have the below permits been created.  -GPP  -Working at Heights  -Hot Works  -Confined Space | * Yes ☐ No ☐ N/A | H |  | W |  |  |
| **1.4** | Determine Lot Size |  | What is the lot size? | * Yes ☐ No ☐ N/A | S |  | W |  |  |
| **1.5** | Materials |  | Have the provided materials been accepted, and checklist completed?  Have the materials and tag numbers/heat numbers been verified? | * Yes ☐ No ☐ N/A | W |  | W |  | * Material Inspection Checklist |
| **1.6** | Electrical and Earthing Pre- Qualification | Welder Qualifications and tickets.  This ITP | Welding procedures, equipment to be used, welding qualifications and calibration of welding machines to be submitted and approved by the client, has this been completed? | * Yes ☐ No ☐ N/A | H |  | H |  | * Calibration Certificates |
| **1.7** | Bedding and Backfill Materials Approval |  | Has bedding and backfill materials been approved for use? | * Yes ☐ No ☐ N/A | H |  | H |  | * Material Approval |

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| **2.0 Excavation and Bedding** | | | | | | | | | |
| **2.1** | Service Location | DBYD &  Services marked on current IFC drawings (if  applicable) | Current DBYD documents received and works executed by qualified service locator | * Yes ☐ No ☐ N/A | H |  | S |  |  |
| **2.2** | Excavation | 235929-000- CV-SP- 00002  EARTHWOR KS | Trench depth into buried ground 500mm width to provide sufficient width for earthing to reach design depth.  Earthworks for trenches shall be done in accordance with standard drawing, has this been  completed? | * Yes ☐ No ☐ N/A | W |  | S |  |  |
| **3.0 Laying/Welding/Handover** | | | | | | | | | |
| **3.1** | Earthing Installation | Viva Energy Earth Grid Connection Checklist  (001) - ITP | Have works been undertaken as per the subcontractor’s checklist? | * Yes ☐ No ☐ N/A | H |  | W |  |  |
| **3.2** | VIVA electrical inspection | New Item | Has the electrical inspector from VIVA been notified to attend the project site and review the installed earthing? | * Yes ☐ No ☐ N/A | H |  | W |  |  |
| **3.3** | Earthing Network | 239529-CO- FM-00003 –  Electrical Earthing by Area | * Has earth Grid installed at correct depth of cover? * Have earth rods/connections/ferrules are of the correct type, length and material and located as per the approved drawing? * Has the cleanness and secureness of all earth rods/connections/ferrules been checked? | * Yes ☐ No ☐ N/A | W |  | H |  | * Earth Grid Connection Checklist (Rev 1) |

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|  |  |  | * Are all identification labels being correctly fixed and visible? * Are all cable clamps are secured correctly, coated with anti-corrosive coating? * Are all cables of the correct size and type? * Are all exothermic welds being acceptable? * Has the individual earth path / bar resistance been recorded? * Has the overall grid earth path resistance been recorded? * Has the anti-corrosion material been applied? * Have 3.0m tails been extended as per the project requirements |  |  |  |  |  |  |
| **3.4** | Electrical Earthing by Area | 235929-CO- FC-000034 –  Electrical Earthing by Area  VIVA Energy Earth Grid Connection Checklist | Has the equipment earthing in area earthed via earth bosses or studs been installed as approved installation drawings and specification?  Have all earth bosses and studs been tightly fitted with shake proof washers and coated with project specified protection?  Are all earthing conductors correct type and size not less than minimum size specified in approved installation drawings?  Are all earthing conductors properly installed and protected? | * Yes ☐ No ☐ N/A | H |  | H |  | Testing Checklist |

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|  |  |  | Has earth resistivity testing been completed?  **Structure Steelwork Earthing:**  Has all structural steelwork that is bolted and provided with equipment earth bonding connected to the main earthing system where required?  Have all earth Bosses/Earth Points been cleared paint /rust free prior to connection? |  |  |  |  |  |  |
| **3.5** | Backfill | 235929-000- CV-SP- 00002  EARTHWOR KS | Has backfill been completed to provide a compact and even surface?  Has testing been completed prior to backfill?  Has all third party inspections been completed prior to backfilling? | * Yes ☐ No ☐ N/A | S |  | W |  |  |
| **3.6** | Clean-up of site | 235929-000- CV-SP- 00002  EARTHWOR KS | Have the areas affected by the works been restored to a condition similar to that which existed prior to the commencement of the work? | * Yes ☐ No ☐ N/A | S |  | S |  |  |
| **3.7** | Identification and recording |  | Have the actual installed location and depth of the earthing, and location of pits, been accurately  recorded on an as built? | * Yes ☐ No ☐ N/A | H |  | H |  | * As built |
| **3.8** | Work is complete and complies with design plans / drawings / specs |  | Redline mark-ups As-Built Survey:  Earthing to conform to the required depths and locations. | * Yes ☐ No ☐ N/A | H |  | H |  | * As built |
| 3.9 | Certificate of electrical safety |  | Electrician to supply Certificate of electrical safety for earthing installation | * Yes ☐ No ☐ N/A | H |  | H |  | Certificate of electrical safety |

Works complete (signed SS) Date works complete

Lot conforms (signed PE) Date lot closed

NCR(s) no. raised Date NCR closed for this lot

**Responsibility (Resp.) Key:** PM-Project Manager, SPE-Senior Project Engineer, SE- Site Engineer, SS-Site Supervisor, SV-Surveyor

# Lot acceptance:

Symal Infrastructure representative name MDR representative name

Symal Infrastructure representative signature MDR representative name

**Inspection key: W –** Witness, **H –** Hold Point, **S -** Surveillance