



Northern Divers (Eng) Ltd

Site Specific Health and Safety Plan

Diving Project Plan












Client:	MAINLINE PIPELINES LTD. VALERO		
Job No:	ND11081		
Site Location:	AFON TYWI		
Date:	12/09/2024		
REV:	0		
Contract Description:	Position Rock Mattresses		
Copies of Documents Required to be Distributed To			
<u>Name:</u>		<u>Email:</u>	
Document Reviewed by Client			
	Name	Signature	Date
Client			
Client			

TABLE OF CONTENTS

1	COMPANY CONTACT DETAILS	5
1.1	Head Office	5
1.2	Diving and Operations Contacts	5
1.3	24-Hour Contact Service	5
2	INTRODUCTION TO THE SITE-SPECIFIC HEALTH AND SAFETY PLAN	5
3	SCOPE OF WORKS	6
3.1	Description of Work	6
3.2	Dive Plan	6
4	CERTIFICATE FOR THE APPOINTMENT OF DIVING SUPERVISOR	7
4.1	Certificate for the Appointment of Diving Supervisor	8
5	ACCIDENT AND EMERGENCY PROCEDURES	9
5.1	Emergency Service Contact Numbers	9
5.2	Hospital Directions	10
5.3	Diving Accident Victim	11
5.4	Dive Site Accident Plan: Unconscious and Non-Responsive Dive Accident Victim	12
6	HEALTH AND SAFETY	14
6.1	General	14
6.2	Diving Supervisor's Responsibilities	14
6.3	Diver Responsibilities	14
7	GENERIC METHOD STATEMENT	15
7.1	Generic Method Statement	15
7.2	Preparation To Dive	16
7.3	Pre Dive Checks	16
7.4	Diver Entry into the water	16
7.5	Umbilical Management	16
7.6	Decompression / Dive Times USN Rev 7	17
7.7	Accident And Emergency Flow Charts	18

7.8	Emergency Line Signals	19
8	SITE-SPECIFIC METHOD STATEMENT	20
8.1	Client Information	22
8.2	Photos:	22
8.3	Access Details:	22
8.4	Welfare / Site Access / Carpark	23
8.5	Diver Access / Egress	23
8.6	Recovery of an injured person or incapacitated Diver	23
8.7	Weather	23
	Local weather and river levels will be assessed and monitored for the duration of the works.	23
	Other relevant information:	24
8.8	Method of works	25
8.9	On Site Alterations to Method requiring authorisation	31
9	RISK ASSESSMENTS	32
9.1	MAXIMUM BOTTOM TIME (No Planned Decompression Based on USN Rev 7)	33
9.2	Risk Assessment Matrix	34
9.3	Risk Assessment	35
9.4	On-Site Risk Assessment	42
9.5	Environmental Risk Assessment	44
9.6	Dynamic Environmental Risk Assessment	45
9.7	Request for Permit to Dive	46
9.8	Pre-Dive Check List	47
9.9	Tool Box Talk	49
9.10	Pre Dive Check List	50
9.11	Daily Operations Log	51
10	QA7 NON-CONFORMANCE REPORT	52

	Site Specific Health and Safety Plan ND11081	Doc No: OPS-SSHSP-4 Page: Page 5 of 52 Issue Code: 2 Date: 12/09/2024
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1 COMPANY CONTACT DETAILS

1.1 Head Office

Northern Divers (Engineering) Ltd

Sutton Fields Industrial Estate
Kingston Upon Hull
East Yorkshire
HU7 0YN

Tel: 01482 227276
Email: contact@northerndivers.co.uk
Web: www.northerndivers.co.uk

1.2 Diving and Operations Contacts

Managing Director:	John Sparrowe
Diving Manager:	Martin Shepherd
Projects Manager:	Keith Dunn

1.3 24-Hour Contact Service

Northern Divers 24-Hour Service: (01482) 227276	
Contact	Contact Details
John Sparrowe Managing Director	Mob: 07803 242560 Email: john@northerndivers.co.uk
Martin Shepherd Diving Manager	Mob: 07721 001002 Email: martin@northerndivers.co.uk
Keith Dunn Projects Manager	Mob: 07803 242 562 Email: keith@northerndivers.co.uk

2 INTRODUCTION TO THE SITE-SPECIFIC HEALTH AND SAFETY PLAN

This document highlights the diving operations that are to be carried out by Northern Divers (Engineering) Ltd. It is used 'On-site' and in addition to site-specific information by Diving personnel.

The Diving, Health and Safety Manual (MAS-DHSM-4), takes precedence over all other documents and should be referred to at all times where further information is required.

	Site Specific Health and Safety Plan ND11081	Doc No: OPS-SSHSP-4 Page: Page 6 of 52 Issue Code: 2 Date: 12/09/2024
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3 SCOPE OF WORKS

3.1 Description of Work

Position Rock Mattresses

3.2 Dive Plan

It is Northern Diver's intention to carry out a diving operation at the following site:

Client Name: MAINLINE PIPELINES LTD. VALERO

Job No: ND11081

Site Location: AFON TYWI

Start Date: TBC

Supervisor: Jonathan Jackson

Assistant Supervisor: N/A

On establishing contact with the client's representative and discussing the relevant 'Method of Procedure' (Method Statement), the Diving Supervisor will formulate his own 'On-site' risk Assessment pertaining to the task(s) to be undertaken. This, in conjunction with Northern Divers Generic Risk Assessment, will be made clear to all those involved in the diving project and will be updated accordingly. All diving work carried out will comply with the Northern Diver's In-house book of Diving Rules and any decision/alteration made by the Diving Supervisor will be final.

Surface demand diving equipment is utilised during the contract which is controlled and run through a diving panel which is supplied by an LP diving compressor or HP supply. There will be an HP backup supply of air in addition to the diver's bailout system.

In the event of any emergency a stand-by diver will be dressed and on hand to assist the diver at all times. At all diving sites the supervisor will have the telephone numbers of the local emergency hospital services and the Hyperbaric Centre (NSMC) will be on hand for advice and help 24 hours per day. *(Please see Diving Accident Management Plan for further information.)*

Northern Divers will have a fully containerised DDC in readiness either on-site or within the specified travel time as outlined in ACoP guidance L104 (Second edition). All divers employed by the company will be HSE PART 1 qualified or equivalent.

Northern Divers (Engineering) Ltd strictly adhere to the Health and Safety Diving Operations At Work Regulations 1997 (S.1.1997 No 2776) and are members of ADC, Certificate No: 0022)

4 Certificate for the Appointment of Diving Supervisor



Oslo Road, Sutton Fields Ind EST
Hull HU7 0YN
Tel: (01482) 227276
Fax: (01482) 215712



Registered in England No: 1749347

contact@northerndivers.co.uk
www.northerndivers.co.uk

Certificate for the Appointment of Diving Supervisor

		Date Issued
ADC Inland\Inshore Diving Supervisor's Ticket No:	0203	13/06/2006
Health & Safety Executive HSE Cert No:	1/1252/94	16/11/1994

In accordance with the Diving at Work Regulations 1997 (SI2776) Regulation 6 (2)(b)(i) and Regulation 9 the following person is appointed as a Diving Supervisor for Air Diving Operations covered by the Approved Code of Practice for Commercial Diving Projects Inland/Inshore (L104) while working for **Northern Divers (Engineering) Ltd.**

Our Ref:	ND11081	Date:	12/09/2024	Client:	Mainline Pipelines Ltd. Valero
Location:	Afon Tywi				
Employee's Name:	Jonathan Jackson			Address:	C/O Northern Divers (Eng.) Ltd Oslo Road Hull HU7 0YN
Certificate Valid from:	Thursday, 12 September 2024				
Operations:	Position Rock Mattresses				

This Certificate of Appointment is the written record required under Regulation 6(2) © of the 1997 Regulations and should be shown on demand by any interested person.

Signed on behalf of Northern Divers (Engineering) Ltd:

Signature:	<i>K Dunn</i>	Designation:	Project Manager	Date:	12/09/2024
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	Site Specific Health and Safety Plan ND11081	Doc No: OPS-SSHSP-4 Page: Page 8 of 52 Issue Code: 2 Date: 12/09/2024
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4.1 Certificate for the Appointment of Diving Supervisor



Oslo Road, Sutton Fields Ind EST
Hull HU7 0YN
Tel: (01482) 227276
Fax: (01482) 215712



Registered in England No: 1749347

contact@northerndivers.co.uk
www.northerndivers.co.uk

Certificate for the Appointment of Diving Supervisor

Date Issued

ADC Inland\Inshore Diving
Supervisor's Ticket No:

Health & Safety Executive
HSE Part 1 Cert No:

In accordance with the Diving at Work Regulations 1997 (SI2776) Regulation 6 (2)(b)(i) and Regulation 9 the following person is appointed as a Diving Supervisor for Air Diving Operations covered by the Approved Code of Practice for Commercial Diving Projects Inland/Inshore (L104) while working for **Northern Divers (Engineering) Ltd.**

Our Ref: ND11081

Date: 12/09/2024

Client: Mainline Pipelines Ltd. Valero

Location: Afon Tywi

Employee's Name:

Address:

Certificate Valid from: Thursday, 12 September 2024

Operations: Position Rock Mattresses

This Certificate of Appointment is the written record required under Regulation 6(2) © of the 1997 Regulations and should be shown on demand by any interested person.

Signed on behalf of Northern Divers (Engineering) Ltd:

Signature: *K Dunn*

Designation: Project Manager

Date: 12/09/2024

5 ACCIDENT AND EMERGENCY PROCEDURES

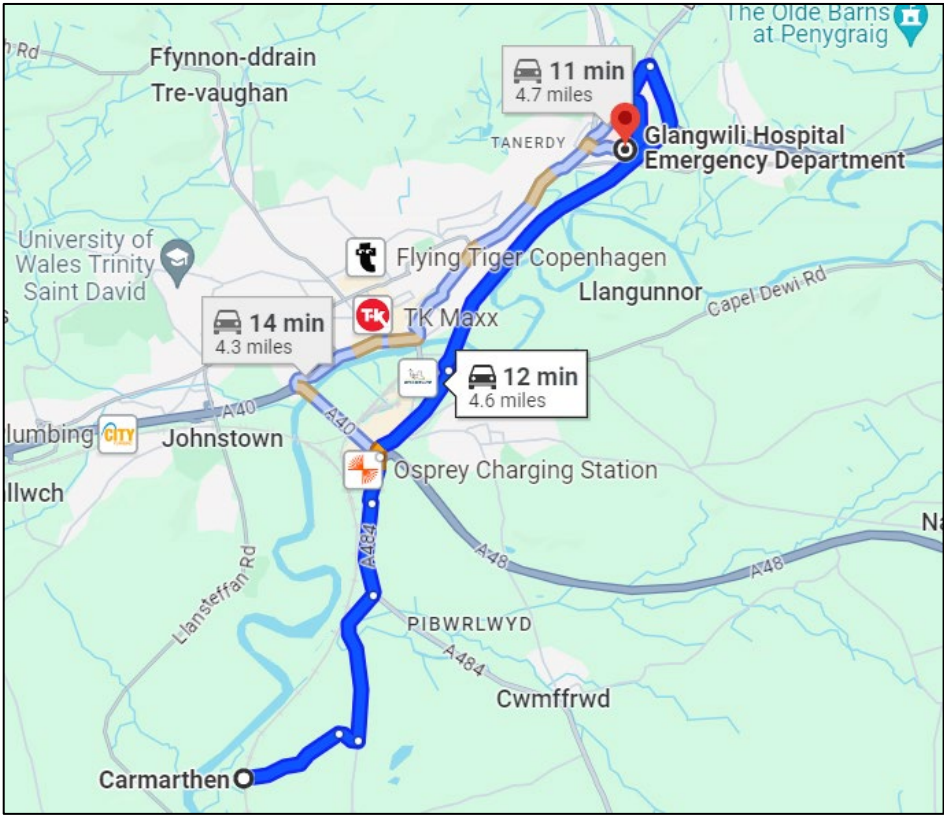
5.1 Emergency Service Contact Numbers

John Sparrowe – Managing Director	0780 324 2560
Martin Shepherd – Diving Manager	07721 001 002
Keith Dunn – Projects Manager	07803 242 562
EMERGENCY SERVICE	CONTACT NUMBER
FOR ALL EMERGENCIES INVOLVING POLICE, FIRE AND AMBULANCE	999
Police - Routine Enquiries	101
Humber Coastguard – Routine Enquiries	CH 16 01262 672317
 Cyfoeth Naturiol Cymru Natural Resources Wales	General enquiries 0300 065 3000 Incident hotline 0300 065 3000 Flood line 0345 988 1188
 Canal & River Trust Making life better by water	0800 47 999 47 0800 807 060
 MAINLINE PIPELINES LIMITED a Valero company Carl Scott	01646 649845 07501 104542
HOSPITAL	
Glanwili Hospital Dolgwili Road Carmarthen SA31 2AF	01267 235151
Northern Divers (Engineering) Ltd – 24-hour service	01482 227276
DDRC Professional Services	01752 209999 (08.00-17.00 Mon-Fri) 0844 736 9511 (24 hours)
Spire Hospital Hull	01482 659471

<https://www.nhs.uk/service-search/find-an-accident-and-emergency-service/>
<https://www.theaa.com/route-planner/route>

5.2 Hospital Directions

Glangwili Hospital



←

from Carmarthen SA33 5BG

to Glangwili Hospital Emergency Dept, Dolgwili Rd...

12 min (4.6 miles)

via A40

Best route

⚠ This route has restricted usage or includes private roads.

Carmarthen

SA33 5BG

➤ Continue to A484

4 min (1.2 mi)

➤ Continue on A484. Drive from A40 to Carmarthen

6 min (3.0 mi)

↩ Turn left

⚠ Restricted-usage road

📍 Destination will be on the right

2 min (0.3 mi)

Glangwili Hospital Emergency Dept

Dolgwili Rd, Carmarthen SA31 2AF

5.3 Diving Accident Victim

A Diving Accident Management Plan is prepared for each diving location and operation.
The Plan is to be implemented in the event of a diving emergency.

A	Evaluate victim's Airway, Breathing, and Circulation (ABC).
B	Put the victim on 100% oxygen using a positive-pressure/demand oxygen resuscitator.
C	Call 999 to report the accident. The EMS dispatcher will notify land transportation, local hospital, Glanwili Hospital and Northern Divers Tel: <u>01482 227276</u>.
D	Evaluate the victim and gather additional information about the incident: – Perform a 5-minute field neurological examination on the stricken diver – Gather as much information about the dive as possible – Secure victim's dive gear ready for examination – – Do not disassemble gear or exhaust any air from the system
E	If decompression sickness is suspected, or any other type of pressure-related injury (arterial gas embolism, pneumothorax, etc.), keep the victim on his back (Do not raise the victim's legs). Place the victim on his side if nauseated or vomiting and keep the air-way clear. (SEE DIVING DECOMPRESSION MANAGEMENT PLAN.)
F	The victim should be transported to the Local Hospital: for evaluation. – If not nauseated and not experiencing altered levels of consciousness, give the victim water to drink during transportation to the Local Hospital @ Glanwili Hospital. – Continue oxygen administration – Send any and <u>all</u> information about the dive with the victim to the hospital including results of field neurological examination. – Keep victim comfortable and observe for shock or change in condition.
G	Based on the evaluation by the doctor at the Local Hospital, Glanwili Hospital the victim may be kept in for observation.

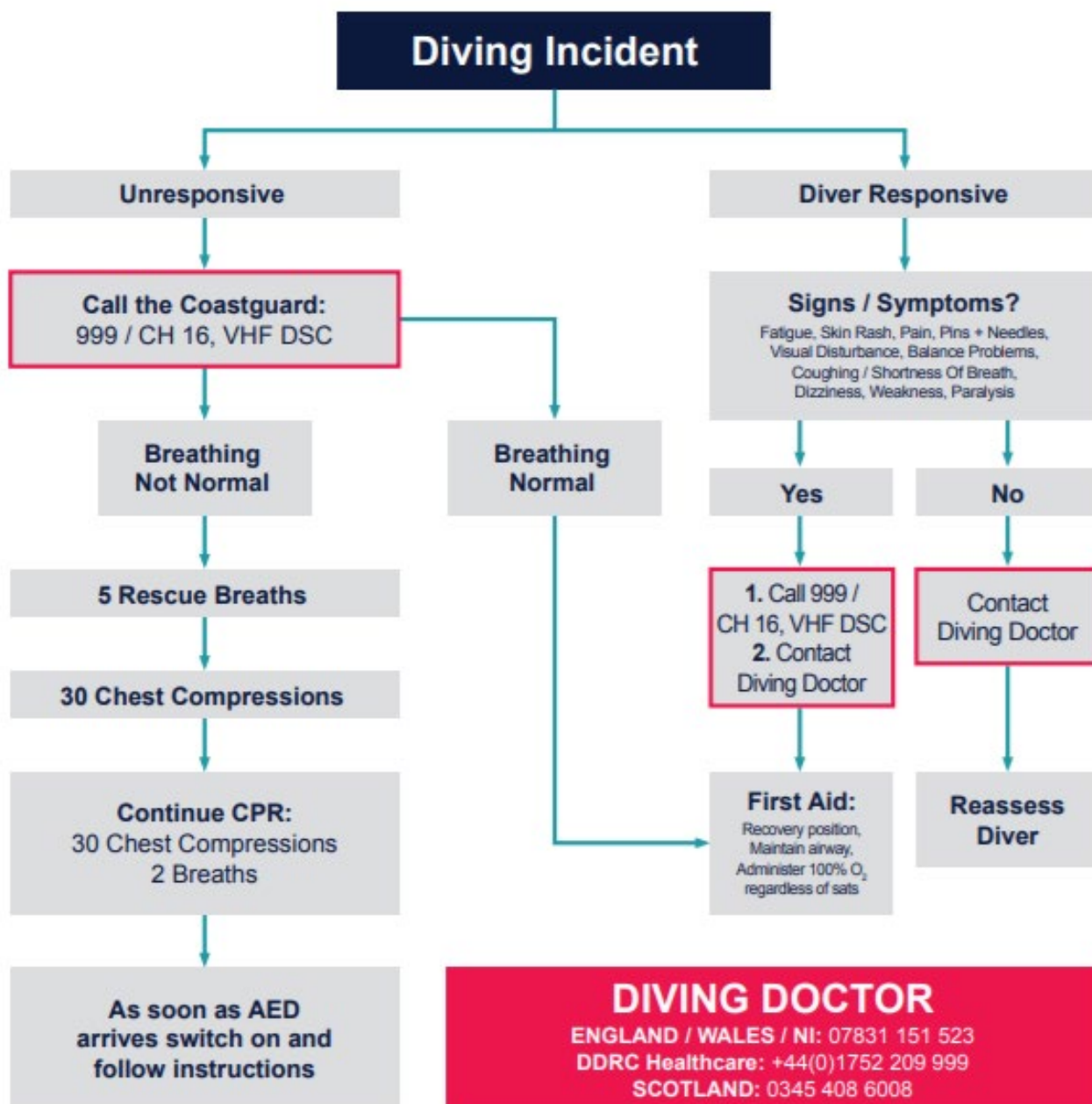
5.4 Dive Site Accident Plan: Unconscious and Non-Responsive Dive Accident Victim

A Diving Accident Management Plan is prepared for each diving location and operation. The Plan is to be implemented in the event of a diving emergency.

A	Evaluate victim's Airway, Breathing, and Circulation (ABC).
B	Start cardio-pulmonary resuscitation, or rescue breathing using a positive-pressure/ demand oxygen resuscitator.
C	Call 999 (local A&E)/ to report the accident. The EMS dispatcher will notify land transportation, Local Hospital: Glanwili Hospital and Northern Divers Tel: <u>01482 227276</u> .
D	Evaluate the victim and gather additional information about the incident: – Gather as much information about the dive as possible – Interview the victim's dive buddy for additional information – Secure victim's dive gear /site equipment for examination Do not disassemble gear or exhaust any air from the system)
E	Transport the victim to the harbour closest to the dive site: where a local ambulance should be standing-by to evacuate the victim to: Glanwili Hospital
F	If there is a problem transporting the victim to the nearest harbour or if the time delay is significant (>2 hours), call or radio the: Coast Guard Tel: or VHF channel, to arrange air evacuation for the victim. The Air Sea Rescue/Air Evacuation Team will co-ordinate with:

Diving Incident Management Flowchart

Includes rapid ascent, omitted decompression, any signs/symptoms after diving



Give 1L oral fluids if tolerated. Keep diver under observation, warm and sheltered. Review diving partner. Secure dive computer if possible. Keep any other equipment safe and do not dismantle. Record in writing as much information as possible.

6 HEALTH AND SAFETY

6.1 General

- PPE shall be provided to all personnel. PPE shall be in accordance with Mainline Pipelines Ltd. Valero site rules
- Divers shall be equipped with company provided certified helmets and diving equipment.
- All personnel will hold an HSE Diving Certificate (or HSE equivalent) and an in-date HSE diving medical. All relevant copies are held at Northern Divers Head Office. In addition, all divers shall present their original relevant certification and log book to the client on request – these may be checked by Mainline Pipelines Ltd. Valero
- Diving Supervisor:- Responsible for control of safe diving operations & duties as listed below
- Clients Representative:- Responsible for monitoring safe working practices in guidance with MAINLINE PIPELINES LTD. VALERO H&S policies for works.

6.2 Diving Supervisor's Responsibilities

- All diving activities must be effectively supervised.
- The Supervisor should organise the project/Works in such a way as to ensure Safe Working Practice and compliance with current H&SE legislation, Codes of Practice, Guidance Notes etc.
- Check the competency & certifications of all diving related personnel working on site.
- Liaise with management, Mainline Pipelines Ltd. Valero to ensure industry standards are maintained.
- Liaise with the client and receive a dive permit / permission to dive as required
- Take action on safety reports/procedures; it is to be borne in mind at all times that a site is only as good as the Site Supervisor makes it.
- Must adhere to Annex 1 from the inshore HSE ACOP L104 (Rev 2)
- Will conduct on-site risk assessments and tool box talks which will be signed
- Will take control of any diving related emergency procedural policy

6.3 Diver Responsibilities

- Each Diver should act as their own Safety Officer.
- Always conduct yourself in a responsible and safe manner.
- Do not expose others to danger through your actions.
- Always use safety equipment and protective equipment supplied for your use.
- Report all defects in plant and equipment.
- Always advise newcomers of Safe Working Practices.
- Must inform the supervisor for any reason if they are not fit to dive
- Must adhere to Annex 2 from the inshore HSE ACOP L104 (Rev2)

- 1 Site Permits and access may need to be arranged.
- 2 The weather forecast will be monitored on a regular basis and, if necessary, updated hourly by Northern Divers by logging on to www.metro.gov.uk/weather/europe/uk/uk.html.
- 3 Working in tideway / flows (if applicable). Diver to be limited to slack water periods or at the Supervisor's discretion.
- 4 For all night work, divers will be equipped with lighting for the duration of the diving operation.
- 5 Decompression facilities will be available on site or at Northern Divers Hull depot in line with current HSE / ACoP regulations
- 6 All diving operations shall take place at the sole discretion of the Dive Supervisor.

The Diving Supervisor's decision is final.

- 7 The International 'A' Flag must be displayed at all times throughout diving operations.
- 8 When diving on private property, all divers must attend the main office to sign a Permit and carryout site induction as required.
- 9 Northern Divers / main contractor to provide safe and stable platform / safe area for recovery of injured personnel in the event of an accident.
- 10 Lifting Operations and Lifting Equipment Regulations (LOLER) must be adhered to at all times.
- Divers must not go under any suspended loads whilst lifting operations are taking place.**
- 11 A toolbox talk will be held with the diving team and any other employees involved with the contract.

High priority areas will be highlighted by the main contractor in their safety plan and reference to this will be made in the Site Specific Rules.

GENERIC METHOD STATEMENT

6.4 Generic Method Statement

Generic Diving Procedures:

- Arrive on site/location and liaise with site officials.
- Set-up diving equipment and check for integrity. Fill out the equipment check lists.
- Diving Supervisor to check weather conditions and the local area for hazards.
- Diving Supervisor to hold toolbox talk in order to communicate to the Dive Team the specific diving operations.
- Position the 'A' (Alpha) Flag in a good visible position and place warning boards as necessary.
- Inform all local authorities/site personnel diving operations are about to commence.
- Diver and Stand-by Diver will prepare for the task
- The Diver will enter the water via the means provided. Over 3M of height it is recommended that a mechanical device should be operated ie crane or basket. Refer to ADC guidance procedure 005 "Diver Access and Egress Arrangements"
- The Diver will then inform the Diving Supervisor he is leaving the surface when the time will be logged. He will then carry on and make a controlled descent to the bottom.
- On arriving at the bottom, the Diver will inform the Diving Supervisor and the time will be logged. The Diver will confirm he is OK and orientate himself with his surroundings.

- The diver will locate the task and carry out the works. He will stay in constant touch with the Diving Supervisor informing him of his every movement.
- On completion of the task, the Supervisor will inform the Diver to return to the down line. Once the Diver is ready to leave the bottom the Diving Supervisor will instruct the Diver to leave the bottom and the time will be logged.
- On arriving to the surface, the time will be logged and the Diver will exit the water via the means provided and will confirm the Supervisor that he is OK.
- On completion of the task, all personnel and authorities will be informed and the 'A' (Alpha) Flag will be removed. All permits will signed off and keys returned.
- Each site will be left as it was found.

6.5 Preparation To Dive

- Follow guidelines in pre-dive check sheet (See pre dive check sheet for further details).
- Ensure permit to dive has been completed with all relevant isolations in place.
- Ensure tool box talk has been conducted to ALL personnel involved in works. (See toolbox talk sheet).
- Ensure: - ladder/shot line are deployed correctly and a secondary means of diver recovery is present.

6.6 Pre Dive Checks

Carry out all pre dive check as per ND check sheets contained at the dive control.

6.7 Diver Entry into the water

- The Diving Supervisor shall inform the client that the diving operation is due to commence and the client will confirm all permits and isolations remain in place.
- Tool box talk to be carried out to all involved in the works & signed by all parties.
- All pre dive checks will be carried out & the diver rescue stretcher or second means of recovery is deployed.
- The Diver shall enter the water assisted by the Tender.
- Once in the water the Diver will inform the DS all is ok.
- The DS will then instruct the diver to descend to depth following a shot line to the bottom.
- At all times good umbilical management is critical during deployment operations.
- The tender will monitor and tend at all times as it is important that too much umbilical is not deployed as it can easily become snagged and entangled on debris.
- Excessive umbilical can also complicate recovery of the Diver, especially during an emergency.

6.8 Umbilical Management

- As the Diver descends to depth the Tender shall pay out umbilical from the surface making sure he does not give too much out.
- Once the Diver is at depth the Tender shall pay out the umbilical on instruction from the Diving supervisor and by feeling the Diver as the Diver pulls his umbilical the tender shall pay out. Also taking up slack as required to enable the tender to feel the diver.
- The diver may request that a minimum of slack airline may be left out to enable works to be carried more easily. This will be confirmed by the diver to supervisor and relayed to the tender
- When the Divers are to return to the surface, they will advise the Supervisor who will instruct the Tenders to start recovering the umbilical as the Diver(s) return to the surface. During this operation care should be taken to ensure that an excessive bight does not develop between the Diver and the surface as this could become entangled on the shot-line or other entanglement hazards.
- The diver is to give a constant verbal contact with the supervisor instructing of any changes on ascent

	Site Specific Health and Safety Plan ND11081	Doc No: OPS-SSHSP-4 Page: Page 17 of 52 Issue Code: 2 Date: 12/09/2024
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- During the ascent the Divers must monitor their umbilical's to ensure they remain vertical as best as visibility permits. If they identify any deviation they should inform the Diving Supervisor immediately.
- The umbilical's shall be marked. The marking system shall be as prescribed by ND and communicated to all diving personnel.

Recovery of the diver on completion of the Task

- On either completion of the task, or at the end of the Diver's bottom time, the Diving Supervisor will instruct the Diver to return to the shot line.
- Once the Diver is ready to commence his ascent he must inform the Diving Supervisor.
- The Diving Supervisor will then instruct the diver to leave bottom informing him of any changes on the surface.
- Diving Supervisor to inform the tender of the diver leaving bottom to enable the divers umbilical to be taken in
- The Diver should ascent to the surface following the shot line at a rate not exceeding 10 metres per minute.

6.9 Decompression / Dive Times USN Rev 7

- All decompression shall be carried out in accordance with the United States Navy Rev 7 tables
- For this Project no in water decompression or surface decompression is planned
-

Primary decompression facilities will be available at Spire Hospital, Lowfield Road, Hull. HU10 7AZ. or at Northern Divers Hull depot in line with current HSE ACoPs regulations. Call BHA for nearest available chamber advise



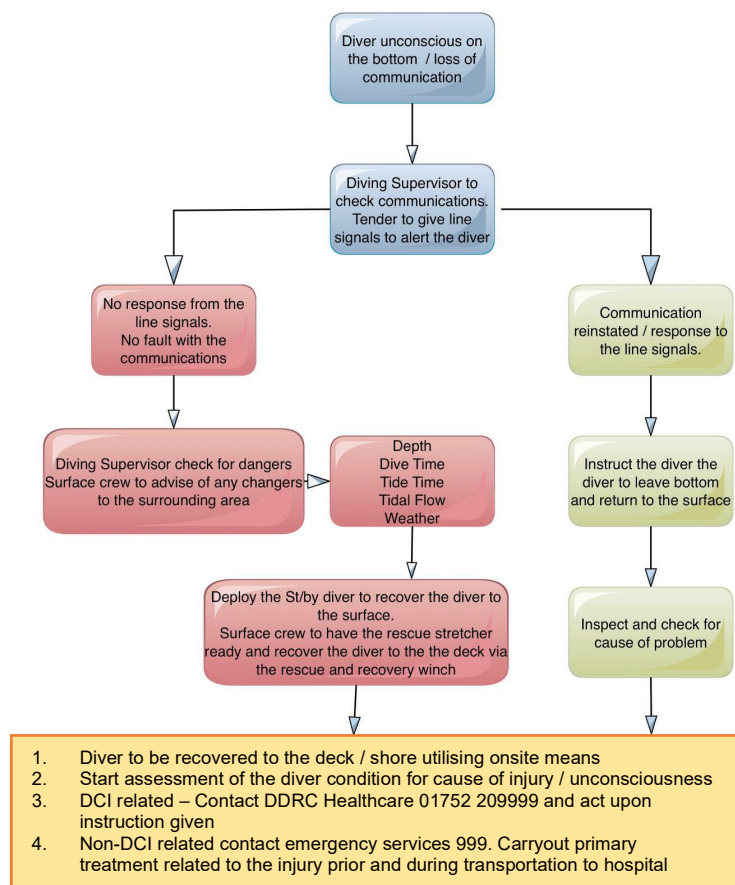
When dives are shallower than 10m with planned in water decompression not exceeding 20 minutes, the diving contractor should identify the nearest suitable operational two person, two compartment chamber. This should be within 6 hours travelling distance from the dive site.

6.10 Accident And Emergency Flow Charts

The following subsections provide guidance for the dive supervisor & dive team in the event of the specific event/emergency situation:

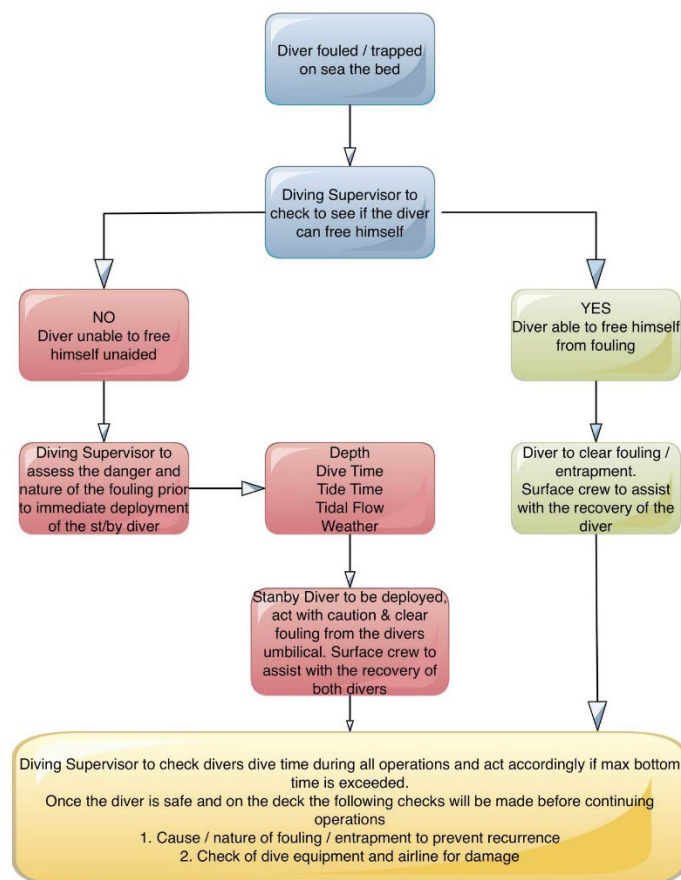
Loss of communication with diver / Unconscious Diver

Loss of communication with diver / Unconscious Diver



Entrapment of the Diver

Entrapment of the Diver



6.11 Emergency Line Signals

Line-Pull Signals. A line-pull signal consists of one or a series of sharp, distinct pulls on the umbilical that are strong enough to be felt by the diver (See below signals).

All slack must be taken out of the umbilical before the signal is given

FROM THE TENDER TO THE DIVER

- 1 - Pull stop or are you OK
- 2 - Pulls go down
- 3 - Pulls standby to come up
- 4 - Pulls come up

FROM THE DIVER TO THE TENDER

- 1 - Pull I'm OK or stop
- 2 - Pulls lower me (give slack)
- 3 - Pulls take up slack
- 4 - Pulls haul me up

EMERGENCY LINE-PULL SIGNALS

- 2-2-2 - Pulls I'm fouled, send help ("I need you")
- 3-3-3 - Pulls I'm fouled but don't need help
- 4-4-4 - Pulls haul me up immediately



7 SITE-SPECIFIC Method Statement

SITE-SPECIFIC METHOD STATEMENT WILL BE INCLUDED ONCE THE PROJECT IS FINALISED.

Diving operations will be carried out in accordance with standard operating procedures and Northern Divers Diving Rules.

All personnel will wear appropriate PPE. Hard hat, Safety footwear, Safety eyewear, Hi-Viz and Gloves. Life jackets will be worn when working close to or over water. Task specific PPE for power tools and cutting equipment.

Where there is likely to be interaction with the public, barriers must be put in place to prevent interference to diving equipment and to safeguard the public against injury from diving plant and equipment. Personnel will be briefed on appropriate behaviour and client confidentiality when dealing with the general public both on and off site.

Task Briefing, Tool Box Talks (TBTs) Site Inductions.

The Diving Supervisor will ensure that the dive team is fully briefed and understands the precise nature of the project including equipment and methods to be used, site conditions and rules and client requirements. All personnel will attend a site induction where applicable, usually carried out by the client, and task specific briefing and daily tool box talks to be carried out by Northern Divers site supervisor.

Site Documentation

Prior to the commencement of the site operations, the following will be in place:

- Northern Divers method statement and risk assessment
- All divers' certification to be approved.
- The dive system certification to be issued and approved.

General Site Management

- The dive supervisor will maintain a day log recording the site activity for each shift.
- The dive supervisor will compile a dive plan which will be communicated to and agreed by the client.
- The stand by diver will be at immediate readiness at all times whilst the diver is in the water.
- If using an LP compressor, the air inlet for the dive compressor is to be situated upwind at all times and must be regularly checked to ensure that the wind has not changed direction.
- Drip trays will be supplied for all engine driven units. In the event of a fuel spill, the team will immediately use the containment kit to control and neutralise the effect of the spill.
- The dive team will immediately contain and neutralise any spills of oil or fuel using appropriate containment equipment.
- All personnel will monitor the dive area and will ensure that non-essential personnel remain outside the area of the diving operation.

METHOD STATEMENT

Job No: ND11081

Date: TBC

Client: MAINLINE PIPELINES LTD. VALERO

Location : AFON TYWI

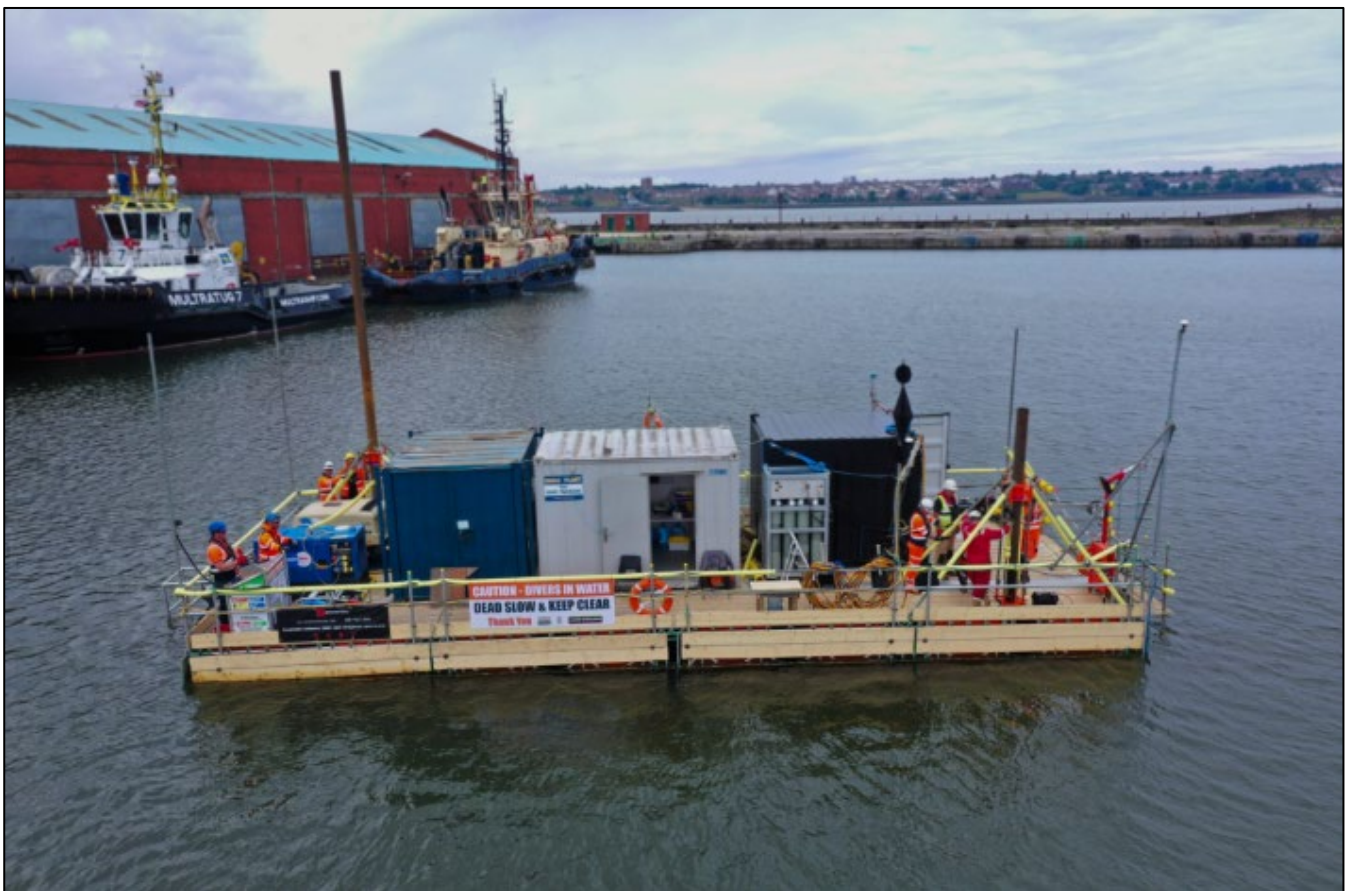
Contract Description: Position Rock Mattresses

Refer to documents Ref: rps Mainline Pipelines – River Tywi Crossing (RVX28) and A8898 Afon Tywi Dive Survey included within the H&S site pack.

Diver to position pre-formed rock mattresses over RDoC area of oil pipeline

Dive Team: 1 x ADC Diving Supervisor 4 x HSE Divers

Equipment: Two full sets of surface demand diving equipment to HSE/ACoPs regulations complete with hard wire communications. All HP and LP back-ups to comply with current Health and Safety Regulations. ScaffoldFloat modular pontoon



Management of Change

Whilst the Diving supervisor is carrying out his assessment of the site and highlights any changes to the site specific method and risk assessment, he must note down any changes to the site paperwork and report these back to the head office for clarification prior to proceeding with the works.

Sections contained within this document are:

- On Site changes to the method Statement - On Site Alterations to Method requiring authorisation
- Onsite Risk Assessment - On-Site Risk Assessment

7.1 Client Information

Refer to as laid drawings and historic crossing survey reports

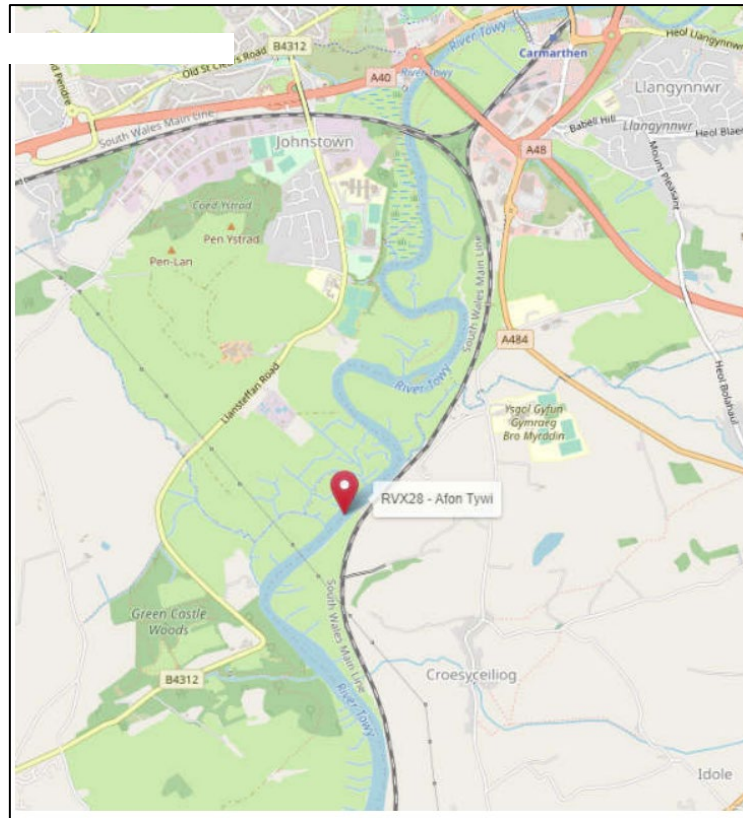
7.2 Photos:

7.3 Access Details:

Diving equipment to be mobilised onto modular pontoon system at The Quay Centre, Coracle Way, Carmarthen. SA31 3LN. Pontoon to be supplied by ScaffoldFloat Ltd and mobilised under their safe system of works / RAMS.



Once mobilised the pontoon will depart from The Quay Centre to the point of works on a daily basis. One each way trip per day.



7.4 Welfare / Site Access / Carpark

Client Northern Divers mobile welfare van / ScaffFloat Portaloo.

Safe parking area for two dive support vehicles to be established within the Quay Centre as agreed with the landowner.

Diving Supervisor to liaise with all parties involved with the works when establishing working areas.

7.5 Diver Access / Egress

Ladder access from the pontoon into the watercourse. Possible diver access / egress by walk in.

7.6 Recovery of an injured person or incapacitated Diver

Rescue stretcher and diver recovery davit fixed to the pontoon. Sufficient staffing levels to assist in an emergency

7.7 Weather

Local weather and river levels will be assessed and monitored for the duration of the works.

<https://www.metoffice.gov.uk/weather/forecast/gcqwtdw7#?>



Hazard identification

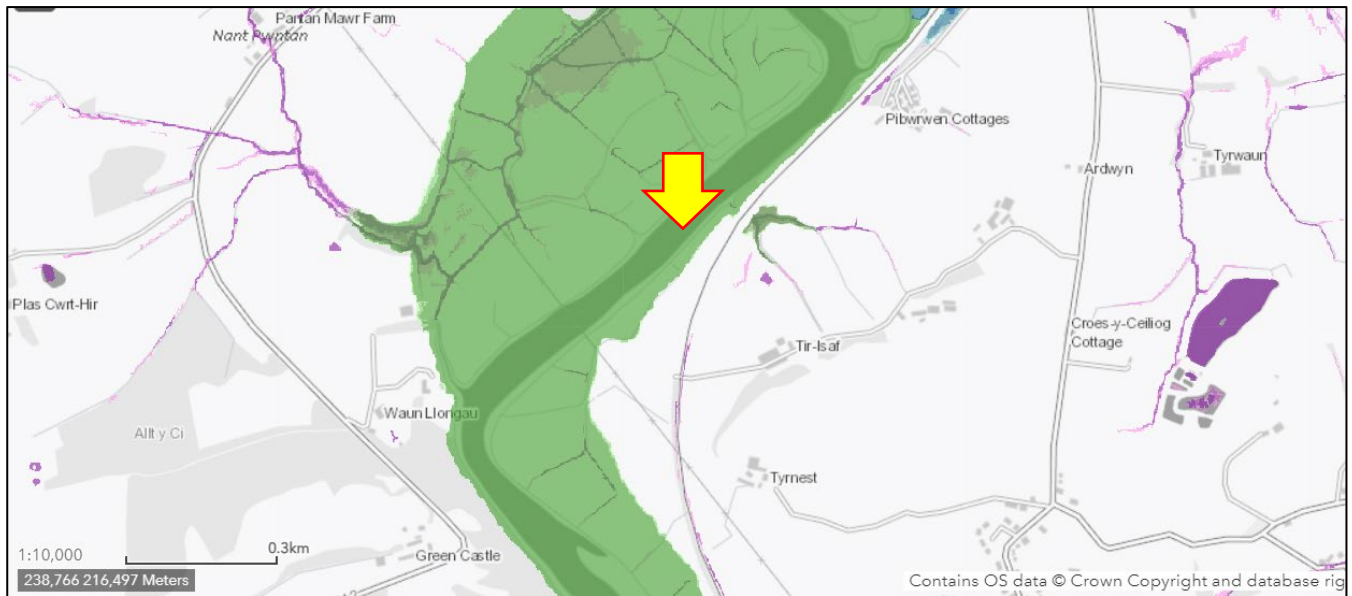
Risks relevant to civil engineering diving operations will be reviewed prior to commencement of operations on site by the diving supervisor: Refer to diver access / egress risk assessment for diving operations.

With regard to site operations, risks are accounted for in the risk assessment shown in the generic and site-specific risk assessment, which includes all the items considered in Northern Divers Limited risk assessment requirements. Following risk assessment, all residual risk ratings will be judged to be acceptable before diving operations commence.

- Restrictions will be booked (to be confirmed) so that the pipeline can be inspected by divers. River traffic will remain unimpeded at all times, though boats can be delayed by up to a max 30mins during the inspection to allow for safe exit from the navigable channel.
- There is an active waterway for users and is therefore subject to movement of craft along the section of waterway affected by the works.
- Due to its nature changes in flow may be experienced and this may cause debris and other elements to be drawn along the river.
- The river bed may contain many different types of debris both in the silt and lying on the river bed. Needles and syringes may be present.
- Viral and bacterial elements may be present within the canal and banks such as leptospirosis and hepatitis.
- Discharges operated by the 3rd parties may be in close proximity

Other relevant information:

- Boats may pass very close to the dive area.
- Unknown possible obstructions on the river bed in the area of the dive.
- Signage will be installed either side of the site to warn approaching river traffic.
- Contact should be made with any adjacent Mooring Sites to ensure that the boating traffic local to the area are aware of the works.
- The river may be fast flowing; flash flooding in periods of heavy rain can occur and will increase flows considerably. This will be considered when planning and carrying out the dive.
- Care is to be taken to ensure debris from work is prevented from remaining in the river.
- There are businesses in the area and there may be many tow path users. Measures are required to ensure users are protected and kept well away from the works.
- This river is subject to high flood risk from the sea
- See map below:



7.8 Method of works

- Upon arrival on site the DS (Diving Supervisor) will contact Valero representative.
- Northern Divers to attend daily morning briefing and kick off meeting to discuss the scope of works
- If required, site inductions will be carried out accordingly.
- Prior to the attendance of Valero will have arranged access to the work site and mobilisation location.
- All personnel to wear full PPE whilst on site and life jackets when working close to the watercourse.
- The Diving Supervisor (DS) will carry out his own on-site risk assessment and make any new additions if required to the site RAMS.
- Local weather and river conditions will be assessed and monitored. The dive supervisor will confirm that all diving works are undertaken within safe working conditions.
- A toolbox talk will be carried out by the DS to all parties involved with the works.
- Dive equipment will be set up and pre dive function tests carried out. All primary / secondary air supplies to be gauged and readings recorded.
- Pontoon to mobilise to site and moor up using a four point anchor system.
- Pontoon to position itself adjacent to the pipe utilising the above pre-set anchor pattern as agreed with the diving supervisor in the tool box talk and works briefing. All anchor positioning to be undertaken under the guidance of the vessel Master using their site specific risk assessment and method statement.
- The above position will be aided by the transit post positioned inshore
- Once the work pontoon is in close proximity of the work area GPS equipment will be utilised to locate the pipe position.
- A secondary check will be made by utilising the RD4000 from a small inflatable positioned at the bow of the vessel to exactly locate the position of the pipe
- Once the correct position has been gained with an offset of 5m from the pipe the mooring post will be lowered to position the vessel in the correct location.
- Once the vessel is securely moored confirm the position with the GPS and RD4000 equipment
- Fly flag ALPHA and place diver warning signs upstream and downstream of works in a secure location visible to all river users.
- Safe access / egress will be established for the diver. A ladder will be utilised as the divers primary means of access assisted by the tender.

- Northern Divers to locate line of pipe in the bank using RD8000 and mark with timber stakes at both ends of area of RDoC.
- Establish marked line from W – E banks over line of pipe using small inflatable boat and engine.
- Surface swimmer to position shot weight 3m shore side of start of RDoC area, refer to fig 1A below for chainage. Down line from shot weight to be returned to the pontoon and secured.
- The rock mattresses will be attached to the pontoon crane davit and lowered to the river bed off line of pipe.
- Both diver and standby dive to be dressed and pre-dive checks carried out.
- The stand by diver will be positioned in a safe location and within verbal contact with the DS.
- Diver to enter the water and follow the down line to the shot weight locating the pipeline and the rock mattress.
- The diver will now give instructions to the dive supervisor for the final positioning of the rock mattress over the pipeline. The rock mattress will be lifted 0.5m above bed level and slewed over the pipeline prior to lowering and releasing the lifting strops. At no point will the diver position themselves below a suspended load. All lifting operations will be under the control of the dive supervisor who will verbally instruct the nominated banksman.
- Diver to continue this method along the line of pipe positioning the remaining rock mattresses.
- On completion of survey the diver will recover the shot weight.
- Remove marked line.
- Complete post dive paperwork and sign divers log book.

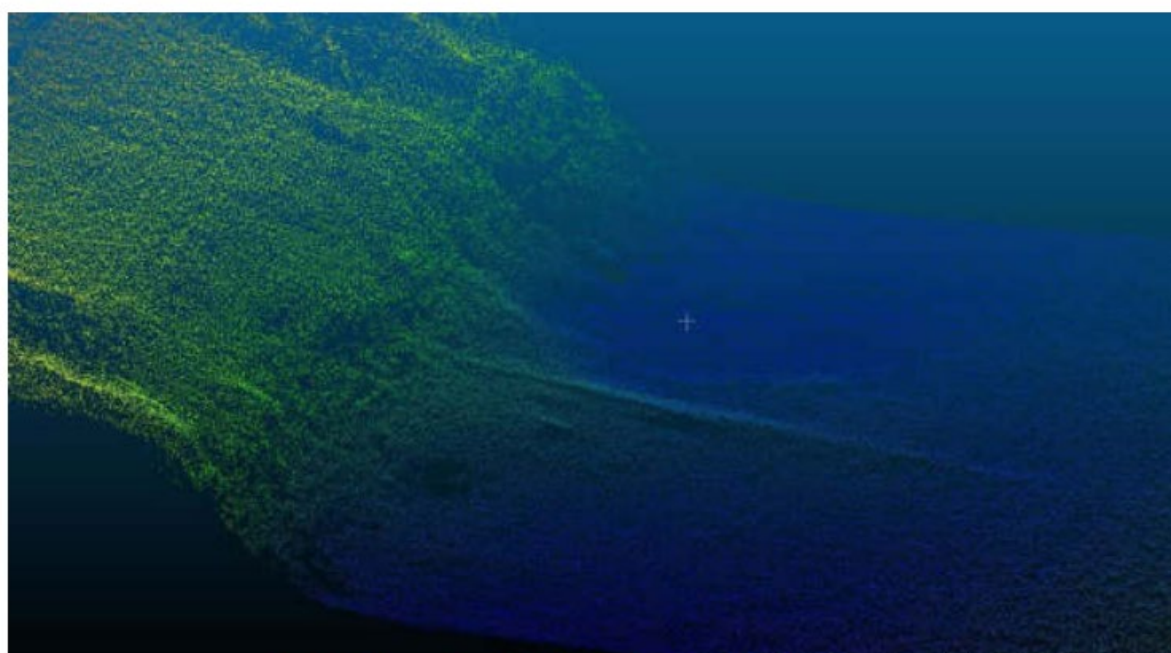
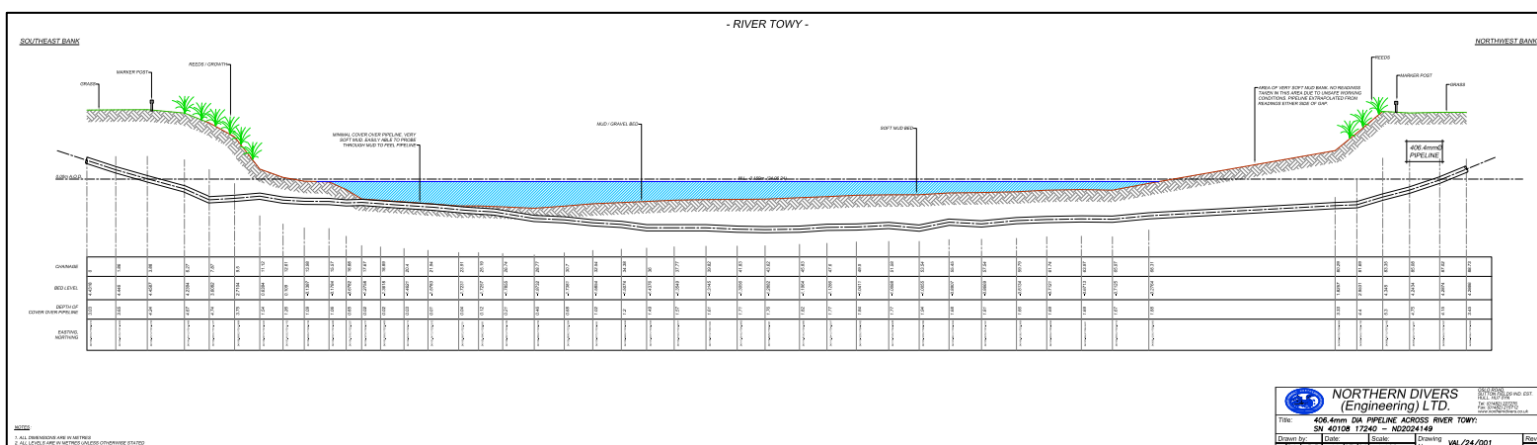


Fig. 1A – Point cloud of the east bank looking downstream



Salix Rock Rolls and Rock Mattresses provide robust and permanent erosion protection for use around reservoirs, shorelines, lakes, streams and riverbanks. They are a cost-effective and environmentally sensitive revetment that can provide an alternative to rock armour, concrete and gabions.

Rock Rolls are a tubular unit, typically 2 m in length with a diameter of 0.25 m, 0.3 m and 0.4m(1.6m length).

A Rock Mattress, in comparison, covers an area of approximately 2 m x 1 m x 0.25 m.

They come pre-filled and can be joined together to create a unit capable of resisting significant flow velocities in high-energy watercourses and protecting against wave action. They are commonly used below or at the water level and form part of a solution with other bioengineering materials. Rock Rolls and Rock Mattresses can be lifted with the straps provided, or chains, and placed in position. They can be installed without the need for temporary dewatering.

Because of the small stone grading, Rock Mattresses accrete silt and can fully vegetate where suitable. They support a greater abundance and diversity of invertebrates owing to the increased interstitial space between stones that can be colonised compared with rock armour and gabions.



Rock Mattress



Rock Roll



ROBUST EROSION PROTECTION

Rock Rolls & Rock Mattresses provide significant erosion protection above, at and below the water level.

The netting is UV stabilised and abrasion resistant.

They are sympathetic to natural processes and can provide the basis for a bioengineering solution above the average water level.



ENVIRONMENTAL BENEFITS

A small stone grading is used, which increases sediment accretion, vegetation establishment and the abundance and diversity of benthic invertebrates compared with rip rap and gabions.

They typically require only a surface layer of materials, so have a lower carbon footprint than other hard engineering alternatives.



SIMPLICITY

They are quicker to install with reduced plant and labour than traditional alternatives; simply lift into position with the straps provided, or 3 point loading chains for Rock Rolls, and 6 for Rock Mattresses.

As the Rock Rolls and Rock Mattresses come pre-filled, they will come with uniform stone.

They are safer to install than alternative solutions such as gabions and rip rap, which typically require greater manual handling and/or heavier plant.

The units are flexible, which reduces ground preparation. They can be installed without temporary dewatering.



DURABILITY

The net is made from a virgin high-density polyethylene (HDPE), which has a design life of up to 100 years.

The HDPE is inert, UV stabilised and abrasion resistant.

Rock Rolls and Rock Mattresses can be used in saline and freshwater environments.



FLEXIBILITY

Their non-rigid design enables them to conform to the riverbed or shoreline.

EMERGENCY PLANNING

Site Emergencies

Minor Injuries:	Present to site qualified first aider for treatment as required and refer to A&E department as necessary.
Serious Injuries:	Immediately call 999 for Paramedics. Provide exact location of injured personnel and location of muster point.
Fire Emergencies:	Fire extinguishers will be situated in the site support vehicle and onsite as required. Minor incidents to be dealt with on-site. Serious fires must not be tackled by site personnel. Personnel to congregate at the emergency muster point and call 999 for Fire Brigade, providing exact location of incident.
Pollution:	Spill kits will be available on site to clean-up or contain chemical / fuel spills. Should a spill occur immediately notify the Environment Agency, the client and the landowner about the incident, as applicable.
Oil Emergencies:	Should the oil pipeline be damaged or show evidence of a leak, then all sources of ignition (plant / equipment) must be extinguished, and the area evacuated. Contact Valero / Mainline pipelines.

SITE MANAGEMENT

- No naked flames to be permitted in the vicinity of the site while the described works are being undertaken.
- In conjunction with the service drawings, the pipeline and any other services that may be affected by, or adjacent to the works will be located using a RD 4000/8000 pipeline locator and marked-out on the ground.
- No lifting to be undertaken above the pipeline until the final positioning of the rock mattresses
- When mobilising right of way will be afforded to the general public at all times. Plant and vehicles will stop in a safe position until the public / pedestrians have safely passed-by.
- All visitors to site must report to the Site Supervisor. Visitors are not permitted to undertake any manual work without holding suitable certification and without first being briefed on the relevant RAMS pertinent to their work.
- All employees and sub-contractors will be briefed on the relevant RAMS before undertaking any work. This will be carried-out by the Site Supervisor. All personnel will then sign the register to confirm acceptance and understanding of the briefing.
- Manual handling on site will be carried out in accordance with relevant manual handling training.
- All accidents, incidents and near misses, no matter how minor, will be reported to the Site Supervisor. Incident report records will be completed, and an investigation will take place in to the incident. All accidents will be recorded in the site accident book.
- Throughout the duration of the contract, all works will be undertaken in-line with the client's permits, as required.

- Spill kits will be available for use on site. Fuels and other chemicals will be stored clear of the watercourse. Drip trays will be available for use with any static plant and equipment.

The fuelling operation of all plant will take place away from the water course. A spill kit will be on hand during all fuelling operations.

Should there be a spillage, the spill kit shall be used to absorb all of the spill. All saturated materials will be placed in a sealed disposal bag and taken to a licensed tip.

All spillages must be reported to the Site Supervisor.

- Any waste materials will be properly disposed-of. Records of all licenced waste transportation and disposal shall be maintained on file.
- Should the working circumstances change, or it become apparent that the method statements or risk assessments cannot be adhered to, then the Site Supervisor will cease the site operations until the methodology and risk assessments are reviewed, and the relevant persons re-briefed as required.

General management

Northern Divers shall manage and operate the activities:

- in accordance with a written management system that identifies and minimises risks of flooding, impact on drainage and environmental harm so far as is reasonably practicable, including those risks arising from operations, maintenance, accidents, incidents, non-conformances and those drawn to the attention of the operator as a result of complaints; and
- using sufficient competent persons and resources.

Operating techniques

Northern Divers shall use appropriate measures, including but not limited to those in the approved Method of Work.

- to minimise sediment mobilisation
- to minimise impact on biodiversity
- to ensure there is no increase to flood risk or detrimental impact on drainage.
- for the storage and disposal of waste produced; and
- to prevent and minimise environmental harm.

Pollution Prevention Guidelines

Pollution Prevention Guidelines Construction works at the site are to be undertaken in accordance with best management practices including the following Pollution Prevention Guidelines (PPG), formerly produced by the Environment Agency:

- PPG1: Understanding your environmental responsibilities – good environmental practices; and
- PPG5: Works and maintenance in or near water

Following these PPG's will help to mitigate the proposed works from giving rise to potential pollution incidents.

Pollution prevention measures will be incorporated into the site setup in line with PPG5, including:

- ▪ Locating compounds away from watercourses (including ditches), low spots and aquifers.
- ▪ Avoiding locations that are designated conservation areas.
- ▪ Considering sustainable water supply and minimising water use on site.
- ▪ Providing adequate measures to control runoff from compounds and haul routes.

- ▪ Providing appropriate measures (double clipped heras fencing) to secure the site and hazardous materials from vandals and trespassers.
- ▪ Storing fuel, oil and materials securely and in accordance with legal requirements.
- ▪ Plant working within the channel to utilise bio-oil.
- ▪ Mobilised sediment - Sediment traps to be installed within channel downstream of works area and regularly checked and changed as necessary.
- ▪ Pollution prevention measures will be monitored, and action taken as necessary during construction, based on visual inspection.
- ▪ Spill kits to be available on site along with oil/chemical absorbent booms.
- ▪ Regular observation of water quality (observe colour, smell, oily sheen, litter); and
- ▪ Ecological impacts (site staff to cease work and seek advice if necessary).
- Any non - native invasive species will be dealt with in accordance with recommendation as set out by the project ecological advisor.
- All personnel to be made aware of any non – native invasive species and the correct method of removal and best practice.

Bio-security

Prior to start of works the dive supervisor will conduct a tool box talk outlining the need for site bio-security to stop the spread of non-native invasive species between sites. Before diving commences and after each dive the following will be adhered too.

- All tools and equipment to be washed down with Instachlor PR-100 Chlorine disinfectant solution.
- Diver and stand-by diver dry suits to be washed down with Instachlor PR-100 Chlorine disinfectant solution.
- Fresh water to be on hand for rinsing.
- All waste or contaminated water to be disposed of on site at a safe location to prevent cross contamination between sites.
- As far as reasonably practicable avoid walking on any non-native invasive species.
- Arrive at the site with clean footwear and vehicle.
- Ensure footwear is clean (visually from soil and debris) before leaving the site.
- Ensure dive vehicle is kept clean - in particular remove any accumulated mud before leaving the site.
- Make use of facilities provided on the site to clean footwear/equipment.
- Keep access to a minimum. If practical do not take vehicles onto premises, keep to established tracks and park vehicles on hard standing.
- Where possible avoid areas of livestock and areas with known plant disease.
- Follow check clean and dry procedure.
-

	Check Check your equipment, boat, and clothing after leaving the water for mud, aquatic animals or plant material. Remove anything you find and leave it at the site.
	Clean Clean everything thoroughly as soon as you can, paying attention to areas that are damp or hard to access. Use hot water if possible.
	Dry Dry everything for as long as you can before using elsewhere as some invasive plants and animals can survive for over two weeks in damp conditions.

8 RISK ASSESSMENTS

Reduce the Risk

The production of a Risk Assessment should be seen as a continuing process during the course of a contract and not something which is done once at the beginning and then forgotten.

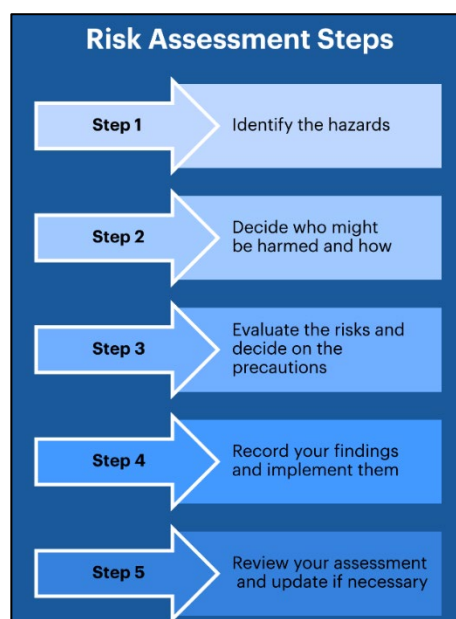
Reference is made to a leaflet published by HSE in 1996: Five Steps to Risk Assessment, single free copies of which can be obtained from:

HSE Books
PO Box 1999
Sudbury
Suffolk
CO10 6FS
Tel: 01787 881165

To summarise, the five steps are:

- 1 Look for hazards.
- 2 Decide who might be harmed.
- 3 Evaluate the risks arising from the hazards and decide whether existing precautions are adequate or more should be done.
- 4 Record your findings – specific guidance will be included in the inland/inshore ACoP but it would be advisable for contractors to record the results of their Risk Assessments in writing, although this need not be voluminous.
- 5 Review your Risk Assessment from time to time and revise if necessary.

The HSE leaflet is short, logical, straightforward and easy to comprehend.



8.1 MAXIMUM BOTTOM TIME (No Planned Decompression Based on USN Rev 7)

DEPTH		BOTTOM TIME	
Feet	Metres	Minutes	Hrs: Min
30	9.1	371 / (Max 240)	06:11:00 / 04:00:00
35	10.7	232	03:52:00
40	12.2	163	02:43:00
45	13.7	125	02:05:00
50	15.2	92	01:32:00
55	16.8	74	01:14:00
60	18.3	63	01:03:00
70	21.3	48	00:48:00
80	24.4	39	00:39:00
90	27.4	33	00:33:00
100	30.5	25	00:25:00
110	33.5	20	00:20:00
120	36.6	15	00:15:00
130	39.6	12	00:12:00
140	42.7	10	00:10:00
150	45.7	8	00:08:00
160	48.8	7	00:07:00
170	51.8	6	00:06:00

Bottom Time:

The total elapsed time from when the diver leaves the Surface in descent to the Time (next whole minute) that he begins his ascent, measured in minutes.

8.2 Risk Assessment Matrix

RISK ASSESSMENT MATRIX										
SEVERITY CLASSIFICATION						PROBABILITY				
Value	Severity	Definitions / Actual or Potential Consequences				Highly Improbable	Improbable	Possible	Probable	Frequent
		Injury	Health	Damage	Pollution					
		1	2	3	4	5				
1	Insignificant	Minor first aid case or no specific treatment	No adverse health effects	No Cost	<1Ltr	1	2	3	4	5
2	Minor	First aid or medical aid case	Minor adverse health effect (e.g. mild rash)	<£10,000	1-10Ltr	2	4	6	8	10
3	Moderate	Possible severe injury (medical aid case) leading to maximum of 1 day LTI	Moderate adverse health effects such as persistent dermatitis	£10,000-40,000	10-100Ltr	3	6	9	12	15
4	Major	Major injury leading to 3 day+ LTI	Harmful health effects such as a dangerous infection	£40,000-500,000	100Ltr-100m³	4	8	12	16	20
5	Catastrophic	Fatality or multiple major injuries	Terminal or permanent health damage	>£500,000	>100m³	5	10	15	20	25
PROBABILITY CLASSIFICATION										
1	Highly Improbable	A possibility but extremely remote chance of occurrence								
2	Improbable	Unlikely to occur (very infrequent) during the operation								
3	Possible	May occur (infrequent) during the operation								
4	Probable	Is likely to occur often during regular operations								
5	Frequent	Is likely (common occurrence) to occur once or more during every operation								
RISK CLASSIFICATION										
L	Low Risk	Operations may proceed with care without identification of any further mitigating controls								
M	Medium Risk	Operation may proceed with caution, however further investigation into additional controls should be conducted to further reduce risk where possible								
H	Significant Risk	Operation must NOT proceed. Alternative methods / controls / substance to conduct the task must be developed / sought								

8.3 Risk Assessment

An Assessment must be reviewed on every site to ensure that all significant hazards and their risks are identified, controlled and implemented by the on-site supervisor.

ACTIVITY: Position Rock Mattresses

CONTRACT: ND11081 MAINLINE PIPELINES LTD. VALERO AFON TYWI

PERSONNEL: 5

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
1	Diver's access and egress.	No ladder, dive basket, crane or scaffolding.	Injured diver - unable to recover.	5	4	20	Suitable access to be implemented. secure Ladder access. Rescue trailer / Davit rescue/ Stretcher	5	2	10
2	No breathing air for diver.	Umbilical Ruptured.	Could be fatal.	5	5	25	Tender to have full control of umbilical. Diver to wear bailout bottle. Stand-by Diver to be dressed.	5	2	10
3	Injury to diver.	Broken bottles. General debris on bed. Falling objects. Trapping of body parts. Hypodermic needles.	Cuts/bruises. Broken bones. Fatalities.	5	3	15	Diver made aware of conditions on bed. No objects to be moved over diver whilst in the water. Diver to be made aware of any trapping hazards by the supervisor. PPE to be worn.	5	2	10
4	Restricted visibility. Heavy rainfall.	Fog, rain, snow or wind.	Unable to see location of diver. Vessels could be nearby and not seen. Increased rainfall/increased flow.	4	4	16	NO diving to take place in poor weather conditions. Diving supervisor to decide on-site.	4	1	4
5	(K Size) Bottle malfunction.	Damaged gauge. Bottle empty.	In emergency no back-up air.	5	4	20	Routine pre-dive checks of equipment.	5	2	10
6	Communications failure.	Broken cable, low batteries, damaged speaker(s).	No verbal contact with diver.	4	3	12	Routine pre-dive checks of equipment to ensure airline is free from fouling.	4	1	4

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
7	Stand-by diver.	Loss of air, entrapment of diver Stand-by unready to enter the water to rescue diver.	Diver becomes injured and unconscious delays in rescuing the diver causing minor to major injuries	5	4	20	Stand-by diver to be dressed and at full readiness. Stand-by diver to have full knowledge of the contract being carried out on-site. St/By diver listening to the dive radio so has full knowledge off the dive	5	2	10
8	Trapping of diver's airline.	Airline trapped/fouled between two objects.	Restricted movement resulting in loss of air.	4	4	16	Diver to be tendered at all times.	4	2	8
9	Falling objects. Restricted vision.	Dawn/Dusk. Overhead works.	Injury to diver.	4	3	12	All personnel to wear PPEE Adequate lighting outside. No works to be carried out above the dive location	4	1	4
10	Blood and bodily fluids.	Injured personnel. Diseased.	Cross infection. Shock.	4	2	8	To be handled by trained personnel only. Correct cleaning and disposal methods to be used.	4	1	4
11	Working close to waterways.	Falling into waterways.	Major/Minor injuries. Fatalities.	5	4	20	All personnel not wearing dry suits are to wear life jackets. Safe distance from the water's edge. Edge protection where practicably possible	5	2	10
12	Working close to waterways.	Falling into waterways.	Major/Minor injuries. Fatalities.	4	3	12	All personnel not wearing dry suits are to wear life jackets.	4	1	4
13	Effluent/polluted Water.	Sewer outfalls. Chemical outfalls.	Burns, sickness and diarrhoea.	4	4	16	Divers to wear enclosed helmet and gloves. User of barrier cream. Recommended inoculations. Wash down after dive. First aid kit on site.	4	1	4
14	Lowering equipment.	Personnel stood below a suspended load.	Crush injuries. Fatalities.	4	4	16	Divers/personnel to move to a safe distance. All crane movements to be made via the supervisor. All crane movement required to be accompanied with a lift plan	4	1	4

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
15	Weil's Disease	Leptospirosis caused by rodents.	Serious headache. Redness to eyes. Muscle pains, fatigue and sickness. Fever of 39 deg or above. Rash to skin.	5	4	20	Diver to wear enclosed helmet and gloves. Use of barrier creams. Recommended inoculations. Wash down after dive. First aid kit on site. PPE to be worn Any broken skin to be covered by plaster/dressing.	5	1	5
16	Diver's access and egress.	Slips, trips and falls-Fall from height-Unstable platform -Wave motion	Fall from height, impact, disorientation, personnel injury (Diver)	5	3	15	Suitable access to be implemented Suitable dive ladder Umbilical management Rescue trailer / stretcher Stand-by Diver to be dressed Communications Monitor weather	5	1	5
17	Unconscious and immobile Diver	Unable to recover diver, personnel injury	Delayed recovery, deterioration of diver	5	4	20	Certified and tested recovery hoist / secondary means. Suitable recovery. harnesses worn by diver. Utilisation of recovery systems. Recovery stretcher Unconscious diver recovery drills.	5	1	5
18	Diving Operations	Sharp edges, dropped objects, snagging, pinch points,	Umbilical Rupture Loss of gas No breathing air for diver. Fatality Loss of comms	5	3	15	Tender to have full control of umbilical. Diver to wear bailout bottle. Stand-by Diver to be dressed. All equipment to be certified and tested On-site inspections of equipment Umbilical management	5	2	10

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
19	Diving Operations	General debris on the bed bottom. Zero visibility Falling objects .Trapping of body parts.	Cuts/bruises. Broken bones. Torn dry-suit – loss of buoyancy Hypothermia Major injury	4	3	12	Diver made aware of conditions on the bed. No objects to be moved over diver whilst in the water. Diver to be made aware of any trapping hazards by the supervisor. PPE to be worn. TOOLBOX Talk Care to be taken @ port locations FAW in team First aid facilities on site	4	1	4
20	Strong flowing tides / rivers	Diving in strong tides	Exhausted diver Unable to recover diver.	5	4	20	NO diving to take place in strong flowing tides. Maximum current for diving operations is 0.8 knots Tide tables to be used in conjunction with metocean data along with river levels and weather conditions	5	2	10
21	Loss of Primary Air Supply	Interruption to Diver's Air Supply	Injury to diver, Death	5	4	20	Use of bail-out cylinder fully charged, HP back up air to the diver's supply on the dive control panel.	3	1	3
22	Working Excessive Hours	Fatigued Personnel	Physical Injury to personnel. Damage to equipment.	2	2	4	Provide adequate manning levels / Take regular rest breaks / Working in excess of normal hours must be authorized by client and to be controlled by supervision.	2	1	2

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
23	High pressure gas in storage during working activities and diving operations	Damage to HP bottles	Impact to bottles Release of high-pressure gas Fire & explosion Excessive noise Flying objects Damage to equipment Personnel injury Fatality Fragmentation	5	4	20	Equipment to be supplied in the format of a land support vehicle with no requirement to transfer equipment to the vessel Vehicle to have - Proper storage rack, Certified lifting frame, Certified Equipment No deck activities during diving activitiesRestricted smoking locations	4	1	4

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
24	Decompression related illness.	Compression & Decompression of diving personnel	Pressure injury (ruptured ear drum etc) Serious injury – paralysis, pneumothorax Fatality	4	4	16	Adherence to US Navy Rev 7 Decompression Tables No decompression diving Primary chamber in case DDRC refer the casualty to a professional medical chamber located at Spires Hospital, Anlaby, Hull or nearest named location. Secondary decompression Chamber located @ Northern Divers Hull. Divers report fit for diving operations Controlled ascent /descent Umbilical management No excessive exercise after diving operations Rotation of divers during excessive strenuous works	4	1	4
25	Heat exhaustion	Standby Diver dressed in & ready in warm conditions	Dehydration Serious illness Increased risk of DCI	3	3	9	Designated standby diver location Protection from elements Fluids – keep hydrated Monitor standby Spray with water	3	1	3
26	General site work	Immersion into water	Hypothermia Lost person Drowning Fatality	5	4	20	All personnel wearing appropriate PPE Hand railing may not be present around the dock edge, care to be taken at all times. Adequate lighting TOOLBOX Talk PPE and life jackets to be worn	4	2	8

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
29	Manual Handling	Load Weight, Size Shape, Location. Lifting, Moving, Carrying, Lowering.	injury to Personnel/ Third Party Personnel. Physical Damage to Equipment e.g./ Equipment Dropped.	4	3	12	Manual Handling/ Trained Personnel/ Site Toolbox Talk/ Weight Identification/ Warning Signs/PPE. Tandem lift	3	1	3
30	Effluent/polluted Water.	Contaminated Water Sewer outfalls.	Burns, sickness and diarrhoea.	4	3	12	Divers to wear enclosed helmet and gloves. User of barrier cream. Recommended inoculations. Wash down after dive. First aid kit on site.	3	2	6
31	Lowering equipment. Crane movements	Personnel stood below a suspended load.	Crush injuries. Fatalities.	5	4	29	Divers/personnel to move to a safe distance from lift. All crane movements to be made via the supervisor. All crane movement to be accompanied with a lift plan.	3	2	6
21	Crane Operations	Dropped / Failure of Lifting Equipment	Physical injury to diver and/or deck crew. Injury to personnel / Third party personnel Equipment Damaged/Dropped.	4	3	12	HSE instructing at the working place before operations commencement / Inspection/certification of lifting equipment. Trained Personnel / Follow procedures i.e.	3	2	6

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
							no overhead lifts, diver will be clear of the path of the load. Follow LOLER regulations			
33	Adjacent Work	Hazards generated by other work parties	Physical Injury personnel/Third party Personnel. Damage/Down time of equipment.	4	4	16	Use PTW System / Discuss interface with supervisory personnel / Where conflict cannot be avoided work to be prioritized by Management / Trained Personnel.	3	1	3
34	Vessel Movements Pleasure and commercial	Injury to diver through contact with moving vessel, propulsion systems.	Physical injury to diver. Death	5	4	20	Strict control of vessel movements. Diver removed from the water prior to approach of vessel. Permit to Work. Liaise with third party users and local waterways / dock / harbours.	3	1	3
35	Working With Hand Tools / power tools	Injury to personnel	Physical Injury to personnel/Third Party personnel Damage to equipment.	3	3	9	HSE instructing at the working place before operations commencement / Ensure all hand tools are operational / Personnel trained in tool use / Take relevant precautions	3	1	3
36	Buried Services/high-pressure gas pipeline.	Vehicles travelling over service causing damage.	Damage to service/release of gas. Explosion risk.	5	4	20	Marking-out of all services along access route. No vehicles or mobile plant, etc., to travel along access route without prior permission/permit being issued	3	1	3
37	Oil pipeline.	Damage to gas pipeline when probing	Explosion, serious gas leak, damage. Damage to coating	5	4	20	Works to be undertaken in accordance with permits. No excavations near pipeline. Gentle probing technique, hand digging	3	1	3

8.4 On-Site Risk Assessment

ACTIVITY: Position Rock Mattresses

CONTRACT:ND11081 , MAINLINE PIPELINES LTD. VALERO, AFON TYWI

PERSONNEL:

5

PROBABILITY				
Highly Improbable	Improbable	Possible	Probable	Frequent
1	2	3	4	5
1	2	3	4	5
2	4	6	8	10
3	6	9	12	15
4	8	12	16	20
5	10	15	20	25

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
1										
2										
3										
4										
7										

PERSON COMPLETING ASSESSMENT:

DATE:

REVIEW DATE: On Going

8.5 Environmental Risk Assessment

ACTIVITY: Position Rock Mattresses

CONTRACT:ND11081 , MAINLINE PIPELINES LTD. VALERO, AFON TYWI**PERSONNEL:** 5

PROBABILITY				
Highly Improbable	Improbable	Possible	Probable	Frequent
1	2	3	4	5
1	2	3	4	5
2	4	6	8	10
3	6	9	12	15
4	8	12	16	20
5	10	15	20	25

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
1	Company Vehicles	Un serviced vehicle	Air Pollution, Oil Pollution, Unsafe vehicle, Unnecessary usage	E4	4	16	All company vehicles to be regularly serviced. Vehicle checks prior to use. Tracker systems fitted. Where required drip trays to be utilised. Oil spill kits to be carried at all times.	4	2	8
2	Fuel	Improper storage of fuel containers	Fuel spillage	E4	4	16	All fuel to be stored in the correct containers and to be securely stored in the vehicles. Oil spill kits to be carried at all times. Only the required amount of fuel to be carried at any one time.	4	2	8
3	Oils	Improper storage of oil containers	Oil spillage contamination of land and water courses	E4	4	16	All oil to be stored in the correct containers and to be securely stored in the vehicles. Oil spill kits to be carried at all times.	4	2	8
4	Waste	Incorrect disposal	Pollution	E4	4	16	Minimal waste is produced. General waste ie food wrappers and none polluted items to be disposed of on site in the designated bins or returned to ND depot and disposed of in the general waste bin.	4	2	8
5	Tools	Improper use. Poorly maintained	Hydraulic leaks ,Oil Leaks ,Air Leaks	E4	4	16	All equipment to be checked prior to use. Regular servicing. Oil spill kits to be carried at all times.	4	2	8
6	Batteries	Incorrect disposal of batteries	Contamination	E4	4	16	The Battery Recycling Regulations came into force on 5th May 2009. All Batteries are to be returned to ND and placed into the battery can for recycling	4	2	8

8.6 Dynamic Environmental Risk Assessment

NO	HAZARD	CAUSE/RISK	EFFECT	BEFORE CONTROL			CONTROL	AFTER CONTROL		
				(C)	(F)	(RR)		(C)	(F)	(RR)
1										
2										
3										
4										
5										
6										
PERSON COMPLETING ASSESSMENT: DATE: REVIEW DATE: On Going										

8.7 Request for Permit to Dive

NO DIVING OPERATIONS ARE TO BE CARRIED OUT PRIOR TO THE PERMIT BEING COMPLETED IN FULL			
Date: 12/09/2024	Time:	Job No: ND11081	Client: MAINLINE PIPELINES LTD. VALERO
Site/Location: AFON TYWI			
Job Description: Position Rock Mattresses			
DIVING SUPERVISOR:			
A Diving Project Plan has been prepared and there is a copy on site? YES A Risk Assessment has been prepared and there is a copy on site? YES Diving Supervisor's Name:(Print) Signature: Contact Numbers:			
CLIENT REPRESENTATIVE RESPONSIBLE FOR PERMITS AND ISOLATIONS			
Vessels/Work Site Permit to Work Ref No			
	The Client's Representative will:		
1	Ensure the 'A' Flag is displayed at all times during the Dive Operation.		
2	Ensure the vessel/worksite staff monitor the VHF/Radio channel: at all times informing the Diving Supervisor of any changes or potential risks that might occur.		
3	Take steps to eliminate ALL hazards to divers from propellers, inlets, outlets, localised shipping, pumps, machinery, movements etc.		
4	Liaise with the Diving Supervisor regarding all operations.		
Precautions Taken:			
1		SHIP'S COMPANY STAMP	
2			
3			
4			
5			
I declare that all of the aforementioned requirements have been carried out. Precautions have been taken and these safety arrangements will be maintained for the duration of the Diving Operation. Name: (Print) Signature: Contact Tel No's:			
COMPLETION			
Diving Supervisor: (Print) Signature: Date: Client Rep Name: (Print) Signature: Date: Position:..... THE DOCK MASTER HAS BEEN INFORMED? YES/NO			

8.8 Pre-Dive Check List

PLEASE CHECK ALL OF THE FOLLOWING PRIOR TO COMMENCING WORK UNDERWATER

Vehicle Reg **W/C:.....**

LP COMPRESSOR	M	T	W	T	F	S	S
General Condition of dive compressor							
All fuel and lube levels before starting							
Filtration unit(s) and hoses to panel							
Intake filter is upwind and clear of any pollution							
All personnel are familiar with start and running of compressor							
DIVE PANEL							
General condition of dive panel							
All valves in correct open/closed mode							
Pneumo gauges and valves							
Non return valves on inlets							
Calibration certificates are in-date							
Air purity BS4001 Certification is in-date							
DIVER'S UMBILICAL							
General condition of diver's airline							
Hose and fittings for wear or damage							
Safety clip for easy release							
Diver's breast safety line							
Communication cable and integrity							
Airline clear of any small particles prior to connecting by an air blow-through							
St/by DIVER'S UMBILICAL							
General condition of diver's airline							
Hose and fittings for wear or damage							
Safety clip for easy release							
Diver's breast safety line							
Communication cable and integrity							
Airline clear of any small particles prior to connecting by an air blow-through							
DIVER'S HELMET							
General condition of diver's mask and hood							
DV is clear of obstruction and is working							
Non return valve is in good working order							
Communications and speakers are in good, loud audible order							
KM spider is in good order and not split							
St/By DIVER'S HELMET							
General condition of diver's mask/helmet and hood							
DV is clear of obstruction and is working							
Non return valve is in good working order							
Communications and speakers are in good, loud audible order							
KM spider is in good order and not split							
All helmet locking pins securely fastened							
DIVER / Stby COMMUNICATIONS							
General condition of radios							

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8.9 Tool Box Talk

Date:		<u>Site/Location:</u> AFON TYWI <u>Job Description:</u> Position Rock Mattresses
Time:		
Job No:	ND11081	
Given By:		
Discussion Type: Training ☐ Information ☐ Instruction ☐		Mark
1.	Consideration of Environmental events	X
2.	Safe disposal of waste – Procedures in the event of spillage etc	
3.	Public access, ensure members of the public are not obstructed or endangered with works.	
4.	Weather Conditions / Environmental	
5.	Reason for works	
6.	Client - Site Familiarisation	
7.	PPE Requirement – Glasses, Overalls, Hard Hats, High Viz, Life Jackets with crotch straps	
8.	Permit to work	
9.	Equipment Check. dive equipment function test	
10.	Access and Egress diver and emergency recovery of injured unconscious person.	
11.	Equipment Set Up	
12.	METHOD and RISK ASSESMENTS	
13.	Unforeseen Risk – Changes to Method Statement	
14.	Local HAZARDS	
15.	Manual Handling	
16.	Emergency Procedures – Hospital Location	
17.	Poor Visibility - Pinch Points - Sharp objects – Fouling – Entrapment	
18.	Lock off / tag out procedure	
19.	Lifting operations / suspended loads	
20.		
21.		
22.		
23.		
24.		
Title: Supervisor		Signature:
Attendance List		
I Confirm I have listened to and understood all the above TOOLBOX Talk points and read and understood the Method statements and Risk Assessments.		
Name	Job Title	Signature / Verbal acknowledgement / acceptance

8.10 Pre Dive Check List

Date		Location	Afon Tywi			
Vessel		Client	Mainline Pipelines Ltd. Valero			
Brief Description of dive						
Check		Diver 1		St/By		
		Pressure	Checked	Pressure	Checked	
1	Tenders to dress in the Diver and St/by and confirm ready for checks					
2	Confirm supply & pressure primary air/gas supply to Diver and St/by at panel					
3	Confirm supply & pressure secondary air/gas supply to Diver and St/By at panel					
4	Communications check– mains & battery power					
5	Record bail-out cylinder pressure & record					
6	Diver / St/by hat off line at panel check the bail-out supply and contents					
7	Diver and st/by back online. Inform both Diver and St/by on primary supply is back on line					
8	Umbilical clipped to harness					
9	Diver / St/by is wearing a knife					
10	Diver / St/by Pnuemo positioned and secure at the divers chest height					
11	Diver / St/by fins and straps secure					
12	Diver / St/by has appropriate tools etc as per tool box talk					
13	St/by diver to confirm readiness					
14	Tender to dress in the Diver and confirm:					
15	Tender to confirm Helmet on and secure					
16	Check hat pins are securely in place					
17						
Divers Ready for the water						
St/By Diver ready for deployment		Name				
Diver Ready for deployment		Name				
Diving Supervisor		Signed		Date		

8.11 Daily Operations Log

Date of Dive:				Client:	MAINLINE PIPELINES LTD. VALERO
Location:	AFON TYWI			Location / Vessel:	
Breathing Equipment:	Mix:			% O ²	
Diving Supervisor:					
Diver:				BOP:	
Standby Diver:				BOP:	
	Dives				St/By
	1	2	3	4	
Left Surface					
Arrived Bottom					
Left Bottom					
Arrived Surface					
Bottom Time					
Max Depth Dive					
Total Bottom Time (in minutes):					
Work Description and Tools Used:					
REMARKS – state decompression table used plus any emergency, injury, decompression sickness or other unusual aspects of the dive:					
Diver Signature :		Date			
Supervisor Signature:		Date			

9 QA7 Non-Conformance Report

For Administration Use Only NUMBER:	DATE:
	Originated By:
	Signature:
NON-CONFORMANCE DESCRIPTION: Is this a Supplier NC: Yes ☐ No ☐	
SITE/LOCATION OF NC:	
CORRECTIVE ACTION:	
PREVENTIVE ACTION:	
<u>NC Investigated and Authorised By:</u> Name: Job Position: Signature: Date: Name: Job Position: Signature: Date:	
<u>Quality Assurance Procedure:</u> NC Added to NC Management Review ☐ NC Discussed/Actioned at MRS Meeting: (date) NC Management Review Report circulated to relevant staff showing NC action: (date)	