



Method Statement & Risk Assessment

Installation of Outfall Extension

Saltburn

Cromarty Firth

Date(s): **December 2018**

Client: Whyte & Mackay Ltd 	Contractor: Caldive Ltd 
Contact: [Redacted] Telephone: [Redacted] Mobile: [Redacted] Email: [Redacted] @whyteandmackay.com Address: Invergordon Grain Distillery Cottage Brae Invergordon IV18 0HP	Contact: [Redacted] Telephone: [Redacted] Mobile: [Redacted] Email: admin@caldive.co.uk Address: 29 Mackean Crescent Castle Avenue Industrial Estate Invergordon Ross-shire IV18 OSD

Approved and certified by the following:



Revision Document No:	Date Written:	Project Job No:
Rev. 0	18.08.18	tbc

Record of Amendments

Details of changes to the risk assessment, method statement or emergency plan are to be logged as part of the permanent record. Reasons for change should also be recorded.

Change:			Revision No:	
By:		Signed:		Date:
Change:			Revision No:	
By:		Signed:		Date:
Change:			Revision No:	
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Change:			Revision No:	
By:		Signed:		Date:

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Authorisation for Use

This dive plan has been prepared in accordance with the Diving at Work Regulations 1997 and the Approved Code of Practice for Commercial Diving Projects Inland/Inshore L104 (Second edition) Published 2014.

The information contained in this document is confidential and proprietary. The contents must not be disclosed to any third party without the express and written approval of Caldive Ltd.

In accordance with the Diving at Work Regulations 1997 (SI 2776), Regulation 6(2)(b) (I) and Regulation 9, [Redacted] is appointed by Caldive Ltd as a Diving Supervisor for this project as covered by the Approved Code of Practice for Commercial Diving Projects Inland/Inshore.(L104)

If for any reason [Redacted] has to leave site or dive himself, [Redacted] will take over as Diving Supervisor.

NAMED PERSON will be allocated as Caldive's site safety representative and will assist the Supervisor in ensuring the safety on site.

This document has been prepared in accordance with Caldive Limited's quality procedures and has been authorised for issue by the following signatory.

[Redacted]

Managing Director



18.08.18

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Date of Issue

1.0 Project Management Overview

Project Title	Installation of Outfall Extension at
Project Location	Saltburn, Cromarty Firth
Workscope Summary	Dive crew and equipment will be mobilised to Invergordon. The diving operation will be based on the Woodstock.
Contract Conditions	Purchase order no.
Diving Contractor	Caldive Limited
On-site Date	TBA. December 2018
Health and Safety	Conduct on site will be consistent with the Caldive Health, Safety and Environment manuals, copies of which will be available on site. Diving will take place in compliance with the UK Diving at Work Regulations 1997, the Inland/Inshore Diving Projects Approved Code of Practice, and Caldive Limited diving procedures.
Permit Details and Notifications	Marine License by Client. Diving Permit from PoCF.

2.0 Project Information Summary

Diving Contractor	Caldive Ltd, is contracted to Whyte & Mackay under purchase order.
Diving Supervisor (s)	[Redacted] is appointed as diving supervisor for this project, in accordance with Regulation 6(2)(b) (I) and Regulation 9 of the Diving at Work Regulations 1997. All supervisors are familiar with the conduct of diving operations on Outfall Installations All nominated divers are qualified to a minimum of HSE Part III and have in-date HSE diving medical certificates.
Team size and specialist skills	An 8–man team will be used for this project. All nominated divers are qualified to a minimum of HSE Part III and have in-date HSE diving medical certificates. Person specific tasks or responsibilities are to be itemised. (Supervisor) (Diver/Asst. Supervisor) (Diver) (Diver) (Diver)
Dive equipment / system	All equipment will be designed and certified in accordance with the International Marine Contractors Association Code of Practice for the Inspection, Testing and Certification of Diving Plant and Equipment as specified in documents IMCA D018 & D023. Test and Inspection certificates will be on site.
Additional equipment	Air Lift System/Underwater welding rig/ Underwater MPI system/Hydraulic power pack & tools/ CP Meter/Thickness Meter
Subcontractor	Support vessel supplied by Seafast Marine Ltd.
General site characteristics	Inshore location within Cromarty Firth. Subject to strong tidal currents.
Access / Egress / Stricken diver recovery	Dive ladder on the Woodstock and crane basket/recovery diver for emergency diver recovery.
PPE required	Standard PPE.
Medical Emergency Care	‘MedDive’ provides a diving emergency medical service worldwide. Specialist medical advice is available on a 24/7 basis. +44 20 8762 8347 (See Appendix B) In the event of connection problems, contact Topside support on +44 20 8762 8379

3.0 Dive Plan

Item	Details
Exposure	Exposed from the south and east.
Tidal conditions (range)	5m
Tidal conditions (current)	String tidal current. Diving operations will be limited to slack water periods.
Depth	Water depths will be in the region of 0-10m. Working depth 7m.
Underwater visibility	Anticipated visibility (with lights if required) is 2m
Dive equipment	The diving equipment will consist of a containerised surface supplied dive system using a low pressure compressor to provide the main air supply with two high pressure reserves on both the diver and stand-by diver supply lines. The divers will use KMB 37 and 18 hats with voice communication, hat mounted camera and lights. The length of the diver umbilicals will be 100m. The divers will carry 12l bailout cylinders on integrated recovery and weight jackets.
Recompression chamber	Twin lock recompression chamber is available at Caldive Base, Invergordon. The travel time from site to the recompression chamber is 10 mins.
Diver's gas supply	The diver's main supply will be air at 15 cfm and 10 Bar. Bailouts will be 12l minimum capacity at 230 Bar.
Dive times	Dives will be carried out using USN Revision 7 decompression tables and all dive times will be kept within no-decompression limits. Exposure limits will be restricted in accordance with Table 1 of ACOP L104
Pollution	None significant anticipated.
Weather cut-offs	Weather cut-offs will be determined on site by the supervisor. For this site, 20mph wind speed from the south and east will be marginal.
Air temperature	8°C anticipated.
Water temperature	8°C anticipated.
Diver access to water	Ladder mounted on the support vessel.
Surface communications	Mobile phones and VHF radio.
Signs, symbols and notices to be displayed	The ship will fly flag 'A', and display red-white-red lights during the hours of darkness.
Vehicle access	At Invergordon Shore base
Crew welfare facilities	On board Woodstock.
First aid personnel	All personnel have first aid training.
Medical equipment	First aid kit and oxygen administration set available on site.
Casualty evacuation	See emergency procedures below.

4.0 Health and Safety

All site activity will be subject to a detailed risk assessment which will allow a safe, efficient method to be documented in advance of any site activity taking place.

Site incidents will be managed using the Caldive Emergency Procedures Manual, a copy of which will be held in dive control.

The closest known recompression chamber to the site is listed below. Journey time by road to this facility is 10 minutes.

Caldive Ltd
29 Mackean Crescent
Invergordon
IV18 0SD

01349 853 688 (24 hrs) / 07713 064672

In the event of a decompression incident, the Caldive site manager will contact the **'MedDive' hyperbaric consultant** on call on:

+44 20 8762 8347

They will advise on the most appropriate course of action, this may include transfer of the casualty to a chamber other than that named above.

First aid, including therapeutic oxygen, is to be administered as appropriate. The supervisor is to record the onset and development of any condition and accompany the casualty to the point of qualified medical evaluation.

In the event of an accident or incident on site requiring external assistance, contact the emergency services by telephone (999 or 112); at sea the coastguard may be contacted on VHF Channel 16. Upon making contact, follow their instructions. Take steps necessary to make the site safe and prevent further incident where possible. First aid is to be administered on site. Minor injuries are to be treated with first aid on site, the casualty is then to be taken to a place of treatment as required to allow evaluation of the injury and treatment by trained medical personnel if necessary.

All accidents, incidents and near misses are to be recorded and reported to management. Accident investigation will be carried out in accordance with company operating procedures. Minor incidents requiring first aid are to be recorded, reported and first aid kit used is to be replaced.

Emergency Services may be contacted by telephone on 999 or 112 or by using VHF on Ch16.

4.1 Hazard identification

Risks relevant to civil engineering diving operations will be reviewed prior to commencement of operations on site by:

Name:	Role:	Signed:	Date:
[Redacted]	Dive Supervisor		
	Client		
	Woodstock Master		

With regard to site operations, risks are accounted for in the risk assessment shown in Appendix A, which includes all the items considered in the Caldive Limited risk assessment requirements. Following risk assessment, all residual risk ratings will be judged to be acceptable before diving operations commence.

4.2 General note

All injuries, accidents and dangerous incidents must be reported to John Beaton, and accident report forms completed as appropriate.

In the event of an accident, the diving supervisor will contact Iain Beaton, Caldive MD and **To be advised** (Client rep) at the earliest opportunity.

5.0 Key Contacts

Name / Position	Company	Contact Details
Managing Director [Redacted]		Tel: [Redacted] Mob: [Redacted] E-mail: [Redacted] caldive.co.uk
Ops Director/Dive Supervisor- [Redacted]		Mob: [Redacted] E-mail: [Redacted] @caldive.co.uk
Project Engineer [Redacted]		Tel: [Redacted] Mob: [Redacted] E-mail: [Redacted] @whyteandmackay.com
Project Engineer [Redacted]		Tel: [Redacted] E-mail: [Redacted] whyteandmackay.com
[Redacted]	KWA Consulting Engineers	Tel: [Redacted] Mob: [Redacted] Email [Redacted] kwa.uk.net
Crane Barge 'Woodstock I'		Tel: 01349 854186
Anchor Handling Vessel 'Shuna'		Tel: 01349 854186
6m Pioner Workboat		Tel: 01349 854186
Port of Cromarty Firth		Tel: 01349 852208 E-mail: shipping@cfpa.co.uk
Coastguard	Aberdeen	01224 592334
Medical Assistance		
Local Doctors	Invergordon County Community Hospital Saltburn Road Invergordon IV18 0JR	01349 852496
Hospital	Raigmore Hospital Old Perth Rd Inverness Inverness-shire IV2 3UJ	01463 704000
MedDive, diving emergency medical service (See Appendix B)		+44 20 8762 8347



Any problems with connection, contact Topside support		+44 20 8762 8379
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6.0 Method Statement

6.1 General Conduct

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

All personnel will wear appropriate PPE.

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.

6.2 Site Safety

6.2.1 PPE

All personnel will wear standard personal protective equipment when on site.

This will consist of high visibility jackets or waistcoats, minimum Class II, 150n Auto Inflation 'Crewsaver' type lifejackets, protective footwear with mid-sole protection, and hard hats. Additional hand, eye and face protection will be worn when using power tools, oxy-acetylene or oxy-arc cutting equipment.

Hearing protection must be worn in noisy environments.

Diving will be carried out using Kirby Morgan 37 hard hats c/w hat mounted lights and camera where necessary. The divers will use neoprene dry suits. Gloves will be 5mm neoprene in good condition and free of holes with elasticised wristbands.

Hats will be fitted with welding visors and divers will wear an additional layer consisting of latex gloves for welding and oxy-arc burning tasks.

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

The Caldive project manager 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 Caldive Limited site supervisors.

6.3 Resources Supplied by Caldive Limited

- Eight-man dive team
- Mobile dive control system
- Crane barge 'Woodstock I'
- Anchor Handling Vessel 'Shuna'
- 6m Pioner workboat

6.4 Schedule of Work

6.4.1 Site Documentation

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

- The Caldive method statement and risk assessment
- All divers' certification to be approved.
- The dive system certification to be issued and approved.
- Harbour authority dive permit.

6.4.2 General Site Management

- The dive supervisor will maintain a day log recording the site activity for each shift. The 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.
- 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.
- All refuelling of machinery to be carried out while engines are off and cool. The vessel is equipped with a range of fire extinguishers which will be used to control any fire resulting from a spillage of fuel.
- 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 area for vessel movements and will ensure that non-essential personnel remain outside the area of the diving operation.

6.4.3 General Method

1. The project will be mobilised from Invergordon shore base and the Caldive base at Balblair.
2. The pipeline materials will be delivered to Balblair.
3. Two pipe strings will be fabricated, 500m & 300m respectively.

4. Both pipe strings will be laid out along the shore above the highest tide mark at the Caldive shore base at Balblair.
5. The 500m string will be fitted with concrete 'doughnut' type collars at 3m intervals.
6. In conjunction with the client's civil engineering contractor, Caldive will arrange for a winch to be installed at the plant and a pull through wire to be installed in the existing outfall from the plant to the shore termination point.
7. Once the pull through wire is in place and subject to weather, the 300m pipe string will be towed by the tug Shuna from Balblair to Saltburn.
8. The pipe string will be moored on to a pre-laid anchor pattern.
9. On the first suitable high tide slack water, the pipe string end will be taken ashore by a 6m Pioner Multi workboat and attached to the pull through wire.
10. Direct communication will be established between the shore crew, the workboats and the winch team.
11. The winch will pull the HPPE pipe into the existing outfall pipe.
12. The shore crew and tug will hold the HPPE pipe in alignment with the existing outfall throughout the pull in operation.
13. The HPPE pipe will be pulled into the existing outfall until the shore end is at the agreed distance from the outfall end.
14. The 500m pipe string with additional buoyancy as required will be moved in increments by a telehandler from above the high tide mark to as position 2m below the high tide mark.
15. On the next suitable weather window and high water slack, the pipe string will be towed from Balblair to Saltburn.
16. The pipe will be held on a pre-laid anchor pattern.
17. The Woodstock will set up on a four point mooring system immediately offshore of the new outfall termination point.
18. On the approach of the first suitable high water slack, the pipe end will be pulled into the shore.
19. The flange connection between the offshore and inshore pipes will be competed.
20. The pipe string will be pulled straight and held in tension buy the Woodstock deck winch.
21. The pipe string will be deballasted by opening the offshore end valve and allowing the pipe string to be flooded with sea water.
22. Once the pipe string is on the seabed, the dive team on the Woodstock will remove any additional buoyancy from the pipe string.
23. The Woodstock will proceed to construct the outfall end assembly and lay concrete mats as required.
24. A video survey of the competed installation from offshore termination point to inshore flange connection will be carried out by the dive team.
25. The Woodstock will reposition on its anchors and start the pipe string burial by jetting the underlying mud to allow the pipe string and concrete blocks to bury below seabed level.
26. On completion, a further video survey of the installation will be carried out.

Appendix A - Risk Assessment



RISK ASSESSMENT / TASK SAFETY ANALYSIS RECORD

Customer: Whyte and Mackay
Activity: Float & Sink Outfall Extension
Procedures: Hazard Identification and Risk Assessment
Location: Saltburn, Cromarty Firth.
Date(s): December 2018

Basic HSE Requirements							
1. Basic PPE / Coverall	✓	8. Respirator		15. Electrical Isolation		22. Competent Personnel	✓
2. Basic PPE/ Hard Hats	✓	9. Life Vest	✓	16. Permit to Work	✓	23. Toolbox Talks / Briefings	✓
3. Basic PPE/ Safety Boots	✓	10. Safety Harness		17. Risk Assessment	✓	24. Certified Equipment	✓
4. Basic PPE/ Goggles	✓	11. Face Shield	✓	18. Life Buoy		25. <i>other</i>	
5. Basic PPE / Gloves	✓	12. Ventilation	✓	19. Guarding		26. <i>other</i>	
6. Basic PPE /Hearing Protection	✓	13. Fire Extinguisher	✓	20. Lockout/Tag out	✓	27. <i>other</i>	
7. Basic PPE /Eye Protection	✓	14. Equipment Rigging/Lifting	✓	21. Communications	✓	28. <i>other</i>	

HSE Procedures:
<ol style="list-style-type: none"> 1. Health, Safety and Environment Policy 2. Air Diving Procedure Manual 3. Accidents and Incidents Procedure 4. Environment Protection Procedure 5. Hazard Identification and Risk Assessment 6. Diving Emergency Response Plan 7. Lifting & Rigging Strategy

		Severity of Harm			Risk Rating = Probability x Severity			
		1	2	3	Probability	Severity	Rating	
		Slightly Harmful	Harmful	Extremely Harmful				
Probability of Occurrence	1	Highly Unlikely	Minimal Risk	Tolerable Risk	Moderate Risk	1	1	1
	2	Unlikely	Tolerable Risk	Moderate Risk	Substantial Risk	1	2	2
			2	1	2			
	3	Likely	Moderate Risk	Substantial Risk	Intolerable Risk	3	1	3
			1	3	3			
			2	2	4			
	2	3	6					
	3	2	6					
	3	3	9					

Risk Assessment Guide		
Risk Rating	Description	Hierarchy of Risk Control
0-2	Minimal/Tolerable Risk	The probability of occurrence and severity of harm is minimal. The task/operation will be able to commence. No additional controls required or at least with very little implication.
3-5	Moderate Risk	Risk needs to be reduced but only balanced with cost. Actions and control measures can be agreed to carry out the task in a safe manner. If moderate risk is linked to high severity then further reviews may be necessary to implement correct control and procedures.
6	Substantial Risk	Agreed actions, costs, timescale and reviewed controls to be authorised by management.
9	Intolerable Risk	Task must not proceed until risk has been reduced to tolerable level. Agreed actions, costs, timescale and reviewed controls to be authorised by management.



LEVEL 1 ASSESSMENT										
Activity Description	Hazard Description	Potential Effects & Personnel Exposed	Severity Rating			Recommended Safe Job Procedures	Recommended Safety Requirements	Residual Severity		
			S	P	R			S	P	R
Table Legend: S = Severity P = Probability R = Risk										
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.	3	2	6	Manual Handling/ Trained Personnel/ Onshore Base Safety Handbook/ Site Toolbox Talk/ Weight Identification/ Warning Signs/PPE / Posted Safety Notices.	1-7	3	1	3
Maintenance & Use of HP Systems	225 Bar high pressure	Serious injury to, Compressor Sets-servicing personnel. Physical Damage to Equipment	3	3	9	Isolate all power supplies / Support/restrain equipment to prevent movement / Before dismantling ensure all residual pressure in all parts of equipment, on the panels of air supply, in hoses are released / Trained Personnel / Certified Equipment / Warning Signs	1,2,3, 20 - 24	3	1	3
Use of All Type of Air Diving Equipment (General)	Equipment used outside operating parameters / Mixing/ use of uncertified equipment	Physical Injury personnel/Third party Personnel. Damage/Down time of equipment.	3	3	9	Use trained competent personnel / Operate within Caldive Operating procedures / Check all equipment for certification / Secure/dispose of all non-certified equipment	21 - 24	3	1	3
General Movement of Personnel Around Site	Slip/Trip/Fall	Injury to Personnel/Third Party Personnel. Equipment/Device Damaged/Dropped	2	2	4	Site Toolbox Talk / Good Housekeeping / Anti-slip Surfaces / Warning Signs / To keep working place clean	17, 23	2	1	2
General Movement of Personnel Around Site	Quayside ropes	Injury to Personnel/Third Party Personnel. Equipment/Device Damage	2	2	4	Keep diver/tender activity clear of vessel moorings/do not interfere with 3 rd party mooring ropes	17, 21 - 23	2	1	2
Dropped/Falling Items During Handling or Transport Movements	Dropped / Failure of Lifting Equipment	Injury to personnel / Third party personnel Equipment Damaged/Dropped	2	2	4	HSE instructing at the working place before operations commencement / Inspection/certification of lifting equipment. Trained Personnel / Follow procedures.	1 – 7, 21 - 23	2	1	2



LEVEL 1 ASSESSMENT										
Activity Description	Hazard Description	Potential Effects & Personnel Exposed	Severity Rating			Recommended Safe Job Procedures	Recommended Safety Requirements	Residual Severity		
			S	P	R			S	P	R
Table Legend: S = Severity P = Probability R = Risk										
Personnel Environment	Weather conditions	Injury to personnel./ Third Party Personnel / Equipment/device damage	2	2	4	Risk Assessment – Delay work, Use appropriate protective equipment	21 - 23	2	1	2
Adjacent Work	Hazards generated by other work parties	Injury to personnel./ Third Party Personnel Equipment/Device damage	2	2	4	Use PTW System / Discuss interface with supervisory personnel / Where conflict cannot be avoided work to be prioritized by Management / HSE instructing at the working place before operations commencement / Trained Personnel	20 - 24	2	1	2
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.	16, 21 - 23	2	1	2
Working With Hand Tools	Injury to Personnel	Physical Injury to personnel/Third Party personnel Damage to equipment.	3	2	6	HSE instructing at the working place before operations commencement / Ensure all hand tools are operational / Personnel trained in tool use / Take relevant precautions.	1 – 7, 22 , 23	3	1	3
Working With Power Tools	Electrical, mechanical, physical exposure	Physical Injury to personnel/Third Party personnel Damage to equipment.	3	2	6	HSE instructing at the working place before operations commencement / Ensure all hand tools are operational feasibility / Personnel trained, qualified, certified in tool use / Take relevant precautions.	1 – 7, 22 - 24	3	1	3
Oxy-arc (Broco) Cutting	Injury to diver due to contact with electrical current/ Eye injury due to welding flash/ Injury due to contact with cutting rod	Physical Injury to Diver	3	2	6	Use trained competent personnel / Operate within Caldive Operating procedures / Check all equipment for safe function/ Use Correct PPE	5, 7, 17, 21- 23	3	1	3
Working in Hazardous	Fire/explosion risk	Serious Injury to	3	3	9	HSE instructing at the working place before	16, 17, 20, 21	3	1	3



LEVEL 1 ASSESSMENT										
Activity Description	Hazard Description	Potential Effects & Personnel Exposed	Severity Rating			Recommended Safe Job Procedures	Recommended Safety Requirements	Residual Severity		
			S	P	R			S	P	R
Table Legend: S = Severity P = Probability R = Risk										
Area		personnel/third party personnel. Major equipment damage.				operations commencement / Personnel trained in Permit System / Follow safety worksite procedures / Control all work with appropriate Permit to Work / Hot or other Especially Hazardous Work Permit				
Equipment Unfit For Purpose	Use of potentially unfit/hazardous equipment.	Physical Injury personnel/Third party Personnel. Damage/Down time of equipment.	3	3	9	Ensure work-scope is fully detailed and supplied equipment is of correct standard / Follow mob/demob. procedures / Unfit equipment must be off-hired	17, 22 - 24	3	1	3
Fueling of Plant	Pollution/ Fire Risk	Severe Injury to Personnel/Contaminati on of harbour area / physical injury Down time of equipment/ Damage	3	3	9	Correct storage containers and fuel transfer systems/ Use of drip trays / Emergency spill kits on site/ No refueling of hot engines/ Fire extinguishers of the correct type to be immediately available	17, 22, 23	3	1	3
Harbour Vessel Movements	Injury to diver through contact with moving vessel, propulsion systems, acoustics.	Physical injury to diver.	3	3	9	Strict control of vessel movements by harbour control. Diver removed from the water prior to approach of vessel. Permit to Work.	16, 17, 21 - 23	3	1	3
Crane Operations	Dropped / Failure of Lifting Equipment	Physical injury to diver and/or deck crew. Injury to personnel / Third party personnel Equipment Damaged/Dropped.	3	2	6	HSE instructing at the working place before operations commencement / Inspection/certification of lifting equipment. Trained Personnel / Follow procedures i.e. no overhead lifts, diver will be clear of the path of the load. Follow LOLER regulations	1 – 5, 14,17 ,21 - 24	3	1	3
Crane Operations	Injury to diver during lift process/ diver entrapment	Physical Injury to diver through contact with the load, fouling of diver's umbilical under load.	3	3	9	The diver will remain clear of the load and will only control the load by way of a tag line/ the diver will constantly monitor the position of his umbilical.	,17 ,21 - 24	3	1	3
Recovery of an Injured	Time Delay in securing	Injury to diver, Death	3	3	9	Provision of FRC to Recover the Diver from	17, 21 - 23	3	1	3



LEVEL 1 ASSESSMENT										
Activity Description	Hazard Description	Potential Effects & Personnel Exposed	Severity Rating			Recommended Safe Job Procedures	Recommended Safety Requirements	Residual Severity		
			S	P	R			S	P	R
Table Legend: S = Severity P = Probability R = Risk										
and/or Unconscious Diver	and recovering the diver to a Place of Safety Further Injury to the Diver					the Water/ Use trained competent personnel / Site Toolbox Talk/ Provide adequate manning levels				
Tending the Diver	Fouling of the Diver's Umbilical, Damage to Diver's Umbilical	Injury to Diver/ Physical Damage to Equipment	3	3	9	The tender will constantly monitor the position of the umbilical, the tender will be in direct communication with the supervisor,	17, 21 - 23	3	1	3
Diver Worksite Access and Egress	Injury to diver, diver exhaustion due to insufficient access system.	Injury to Personnel/ Third Party Personnel. Physical Damage to Equipment e.g./ Equipment Dropped.	3	3	9	Establish safe access and egress system/Use trained competent personnel / Site Toolbox Talk/ Provide adequate manning levels	17, 21 - 24	3	1	3
Diving in a Tideway	Diver Entrapment	Injury to diver/ Death/ Physical Damage to Equipment	3	3	9	Detailed Planning of Task/ Site Assessment to Cover Tidal Conditions/ Diving Ops Restricted to Slack Water Period or Period of Reduced Tidal Flow/ Diver to be Aware	17, 21 - 23	3	1	3
Diver Buoyancy Control	Uncontrolled, Rapid Ascent or Descent	Serious Injury to the Diver	3	3	9	Detailed Planning/ Establish Down Line(s) to Job Site /	17, 21 - 23	3	1	3
Loss of Primary Air Supply	Interruption to Diver's Air Supply	Injury to diver, Death	3	3	9	Use of bail-out cylinder fully charged, 2no. HP reserve lines to the diver's supply on the dive control panel	17, 21 - 24	3	1	3
Loss of Communication with the Diver	Failure of Voice Comms	Hazard to Diver due to loss of direction by supervisor	3	2	6	Detailed planning of Diver Recovery Plan in the Event of Comms Failure/ Alternative Communication Plan e.g. Use of Hat Light to Signal Diver	17, 23	2	1	2
Diving in Poor In-water Visibility	Diver Entrapment, Diver Unable to Locate Worksite	Physical Injury to Diver, Lost time,	3	2	6	Detailed planning of work site access/ diver familiarization with the vessel and task location/ establish down lines and work lines/	17, 21 - 23	3	1	3



LEVEL 1 ASSESSMENT										
Activity Description	Hazard Description	Potential Effects & Personnel Exposed	Severity Rating			Recommended Safe Job Procedures	Recommended Safety Requirements	Residual Severity		
			S	P	R			S	P	R
Table Legend: S = Severity P = Probability R = Risk										
Barge Operations	Failure of mooring system due to weather	Physical Injury to diver through contact and/or fouling of diver's umbilical by barge, mooring cables & anchors.	3	2	6	No diving operations will be carried out during adverse weather or sea conditions which could result in a failure of the mooring system.	21 - 24	3	1	3
Water Jetting	Diver injury through contact with the water jet. Diver injury through contact with excavated material	Physical injury to diver	3	3	9	The diver will be instructed to remain clear of the water jet discharge. The water pump control valve will be manned at all times during the operation and the operator will be in direct radio contact with the dive supervisor.	17, 21 - 24	3	1	3



THIS RA/TSA MUST BE DISCUSSED WITH PERSONNEL DIRECTLY INVOLVED WITH THE JOB PRIOR TO JOB EXECUTION!

Attendees of Job:

Full Name	Position	Signature

Prepared by:
(name, surname) (position) (date)

Reviewed by:
(name, surname) (position) (date)

Authorised By: John Beaton Managing Director
(name, surname) (position) (date)

Safety Representative's Responsibilities

To assist in ensuring the health and safety of all personnel, one member of the dive team shall be appointed 'Safety Representative'.

Caldive shall appoint one member of the Dive team as a Site Safety Representative. The Site Safety Representative's responsibilities will include:

- Assisting the Dive Supervisor with monitoring site safety
- Maintaining crew awareness of site safety
- Report any Hazards or Concerns (HOC) raised by the dive team to the Dive Supervisor
- Where required, attend site safety meetings

Safety Representative/Diver's Name: _____

Signature: _____

Date: _____

Appendix B – MedDive Procedure



APPENDIX 6

This is the Procedure for use of The Diving Medical Support Emergency Service

Calls will be handled by International SOS which is a 24/7 emergency call
facility

Emergency telephone number

+44 20 8762 8347

This number operates 24 hours a day.

- The operator will request caller details in case of disconnection
- State you have Diving Emergency
- State your contract is with the National Hyperbaric Centre
- You will be connected with the on-call Diving Doctor

If there is any problem with the connection or number please contact Topside
support on

+44 20 8762 8379

Appendix C – COSHH Assessment

COSHH Assessment

Oxygen

Material Name	Oxygen
Area of Use	Site. Open air in proximity to dive control and welding plant
Method of Application	By pressure hose to diver from pressurised cylinder.
Storage	Keep cylinder below 50 degrees C in well ventilated space. Secure cylinder from falling over. Segregate from other flammable materials.
Exposure Period	10 hours per day.
Health Risks	Not poisonous.
Spillage Controls	Ensure cylinder is closed when not in use. Ensure that delivery hoses are in good condition Check system for leaks
PPE	Hand and eye protection to be worn when handling cylinders.
Disposal	Return cylinder to supplier
Additional Comments	See attached data Sheet Do not smoke while handling this product.
First Aid	Inhalation not hazardous.
Fire Fighting	Exposure to fire may cause cylinders to rupture/explode. Oxidant. Strongly supports combustion. May react violently with combustible materials e.g. hydrocarbons.

Diesel Fuel

Material Name	Diesel Fuel
Area of Use	Site. Open air in proximity to dive control and welding plant
Method of Application	From steel storage containers.
Storage	To be stored in secure area. Containers (max.25l capacity) to be secured to prevent them from falling over. Segregate from other flammable materials.
Exposure Period	10 hours per day.
Health Risks	Toxic. Avoid direct skin contact and inhalation of fumes and exhaust gases.
Spillage Controls	Ensure cylinder is closed when not in use. Ensure that delivery hoses are in good condition Check system for leaks Spill kit available. Do not allow to pollute natural watercourse or drains. Store in bunded area
PPE	Hand and eye protection to be worn during refuelling of plant.
Disposal	Return all fuel to base.
Additional Comments	See attached data sheet. Do not smoke while handling this product.
First Aid	In the event of swallowing do not induce vomiting. Seek immediate medical assistance.
Fire Fighting	Exposure to fire may cause cylinders to rupture/explode. Oxidant. Strongly supports combustion. Foam or dry powder extinguishers only to be used.

Petrol

Material Name	Petrol Fuel
Area of Use	Site. Open air in proximity to dive control and welding plant
Method of Application	From steel storage containers.
Storage	To be stored in secure area. Containers (max. 25l capacity) to be secured to prevent them from falling over. Segregate from other flammable materials. Store away from sources of ignition. Designate storage area a no-smoking zone. Spill kit available. Do not allow to pollute natural watercourse or drains.
Exposure Period	10 hours per day.
Health Risks	Toxic. Irritant. Avoid direct skin contact and inhalation of fumes and exhaust gases.
Spillage Controls	Ensure cylinder is closed when not in use. Ensure that delivery hoses are in good condition. Check system for leaks. Spill kit available. Do not allow to pollute natural watercourse or drains. Store in bunded area
PPE	Hand and eye protection to be worn during refuelling of plant.
Disposal	Return all fuels to base.
Additional Comments	See attached data sheet. Do not smoke while handling this product.
First Aid	In the event of swallowing do not induce vomiting. Seek immediate medical assistance.
Fire Fighting	Exposure to fire may cause cylinders to rupture/explode. Highly flammable. Strongly supports combustion. Foam or dry powder extinguishers only to be used.