

Karara Mining Limited

HPGR Cooling Station Relocation

August 2025

HPGR COOLING STATION RELOCATION					
REV	DESCRIPTION	ORIG	REVIEW	KML APPROVAL	DATE
A	Issued for Tender	Fei TONG	Zhennian WANG	Zuoxin ZHANG	28-8-25

KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION

CONTENTS

1.	INTRODUCTION	3
2.	GLOSSARY.....	4
3.	SCOPE OF WORK.....	5
3.1	Overall.....	5
3.1.1	General.....	5
3.1.2	Pipeline.....	5
3.1.3	Structural	5
3.1.4	Drawings and Documentation.....	6
3.2	Work Excluded	6
3.2.1	valves	6
4.	HEALTH SAFETY AND ENVIRONMENT MANAGEMENT.....	7

APPENDICES

APPENDIX A.	PIPELINE LIST.....	VIII
APPENDIX B.	REFERENCE DOCUMENT LIST.....	XI

Disclaimer

“This document has been prepared by Karara Mining Limited for exclusive use on the Karara Iron Ore Project (“the Purpose”). Use of this document other than for the Purpose is not permitted.”

KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION

1. INTRODUCTION

In summary, this document covers the scope of work for the:

- Calculation, Design, and Certification of Mechanical & Structure Engineering Design (including chillers & associated pump / heat exchanger skid). KML prefers replacing the existing chillers & associated pump / heat exchanger skid by new ones due to equipment ages, please ensure to comply.

**KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION**

2. GLOSSARY

Wherever the words “Company, Purchaser or Buyer” are used, it shall mean Karara Mining Limited,

Wherever the words “Contractor, Supplier” are used it shall mean the person so named in the Contract (and its successors and permitted assigns).

Wherever the words “Company’s Representative, Purchaser’s Representative or Buyer’s Representative” are used, it shall mean the person so named in the Contract (and its successors and permitted assigns).

Term	Definition
Authorities	Any statutory, public, municipal, governmental or administrative department, commission, authority, agency or entity with jurisdiction in connection with the WUC.
BoD	Basis of Design.
CDRL	Contractor Data and Document Requirements List.
Company’s Project Requirements	Has the meaning ascribed to it in the Contract
Company’s Representative’s nominee	Means an individual appointed in writing by the Company’s Representative under the Contract.
Contract	The agreement between the Company and the Contractor to which this Scope of Work pertains.
Execution Date	Means the date on which the Formal Instrument of Agreement is signed by the Company.
Equipment	Means the goods to be supplied or supplied by the Supplier.
FAT	Factory Acceptance Testing.
HAZOP	Hazard and Operability Review.
IFC	Issued For Construction.
Mine site	The location of the KIOP mine at Karara in the Mid-West Region of Western Australia, approximately 215 km East of Geraldton and 320 km North-North East of Perth.
P&IDs	Piping and Instrumentation Diagrams.
PMC	Project Management Contracting
SDRL	Supplier Data and Document Requirements List.
SoW	Scope of Work.
Supplementary Requirements	Specifications, standards, regulations and codes of practice set out at Section 4 of this SOW.
Tenderer	Means a person who lodges a tender for the Work.

KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION

3. SCOPE OF WORK

3.1 Overall

This Scope of Work defines the activities to be performed by the Contractor for the calculation, design, and certification of mechanical & structural design.

All Works shall be carried out in a professional and workmanlike manner in accordance with applicable laws and regulations, the Contract documents, Procedures, Specifications and Drawings.

Obligations, goods and services not expressly shown on the Drawings or mentioned in the Contract documents, but which are necessary for the proper completion of the work or for good Engineering practice, shall be supplied and executed by the Contractor at its own cost.

3.1.1 General

The successful Contractor shall be required to:

- Calculation, design, and certification of mechanical & structural design (including chillers & associated pump / heat exchanger skid).
- Review existing design drawings, project specifications and equipment data sheets to be provided by KML
- Mechanical, piping, civil and structural engineering design.
- 3D Navisworks model for KML's review and approval.
- CAD design drawings.
- Design calculations in PDF.
- Material take-off to allow KML to call for tenders for procurement, fabrication and construction for budgetary purposes.

3.1.2 Pipeline

The contractor/supplier shall supply the following:

- Design the piping and pipe supports in accordance with this document and the Technical Specification 1300-PI-SPC-1001.

3.1.3 Structural

- Provide pipe supports drawings.
- Provide extra structural design and send the structural drawings to KML to review and approval.

KARARA MINING LIMITED HPGR COOLING STATION RELOCATION

- Calculation, verification, and certification of structural strength.

3.1.4 Drawings and Documentation

- Provide pipeline ISO & P&ID drawings to KML to review.
- Provide designed CAD drawings, pipeline 3D model to KML to add into KML 3D model.
- Design calculations in PDF.
- Material take-off to allow KML to call for tenders for procurement, fabrication and construction for budgetary purposes.
- Provide IFC drawings and as built drawings to KML to update the pipeline drawings.
- All the drawings must be completed by following KML drawings specification.
- The Company's Representative reserves the right to request any additional information necessary to clarify the pipeline design

3.2 Work Excluded

3.2.1 valves

- Contractor do not supply all valves.

4. HEALTH SAFETY AND ENVIRONMENT MANAGEMENT

All work must comply with the requirements of document CORP-HS-PLN-1001 Occupational Health and Safety Plan and document CORP-EN-PLN-1001 Construction Environmental Management Plan.

The EP Contractor will be required to include in all site based tender documents the above documents and have all successful contractors prepare a Project Specific Health Safety and Environment Management Plan that aligns with project requirements prior to mobilization to site.

Appendix A. Pipeline list

Pipeline modification list as below:

1. From the Chiller until connecting with the existing HPGR Chiller Water Supply pipe under the HPGR building.

Table 1 Equipment List

Equipment Number	Equipment Name	Notes
1304-CU-007/008/019	HPGR Chiller Unit	
1304-PU-270/271	HPGR Chiller Water Return Pump	1304-CU006 Skid
1304-PU-272/273	HPGR Chiller Water Supply Pump	
1304-HX-016/017	HPGR Chiller Heat Exchanger	

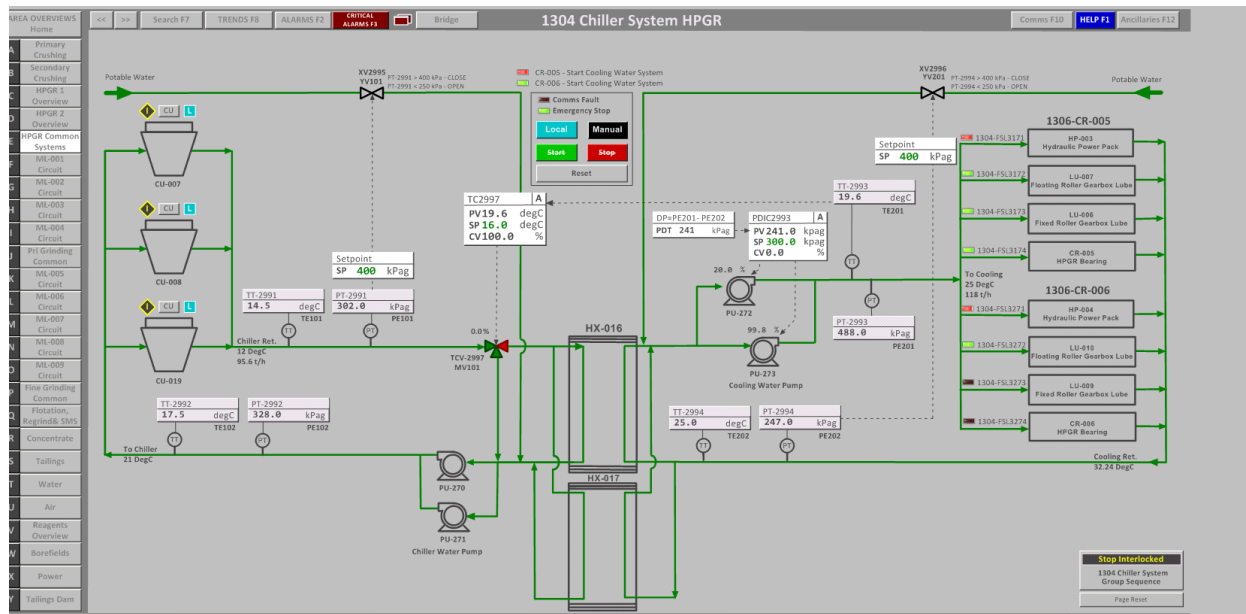


Figure 1. Existing HPGR Cooling Station System Overview

KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION

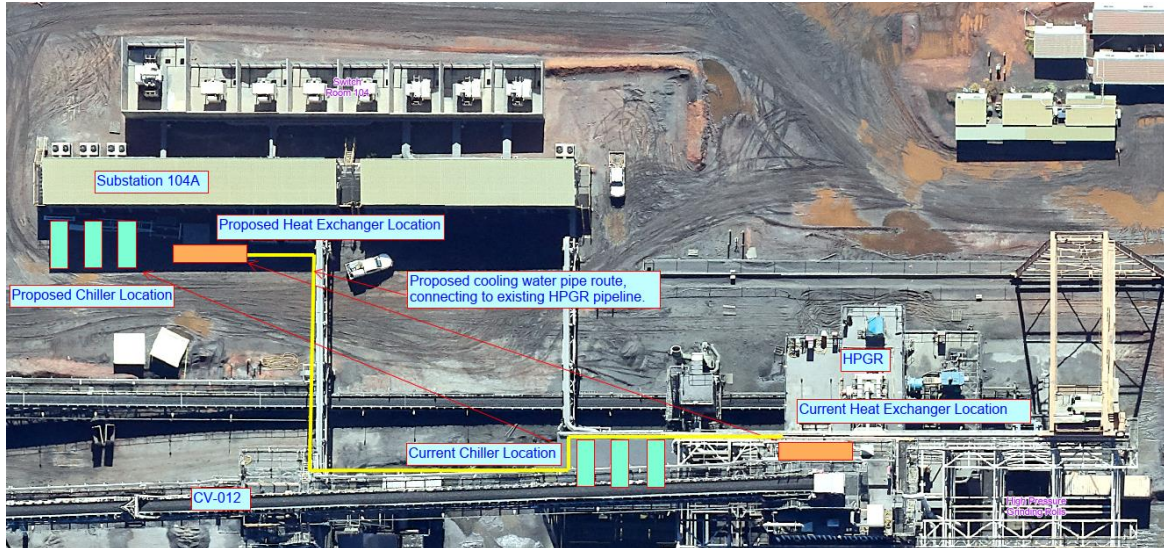


Figure 2. Relocation Proposal Overview



Figure 3. Site Photo for the New Location

KARARA MINING LIMITED HPGR COOLING STATION RELOCATION

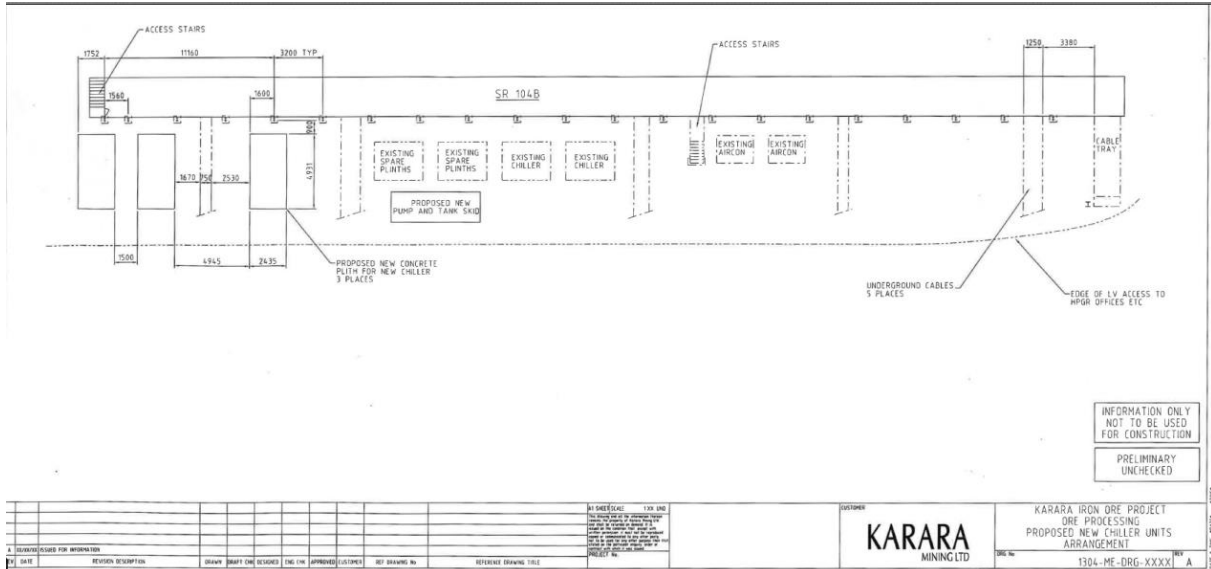


Figure 4. Roughly Equipment Layout (Reference Only)

Appendix B. Reference Document List

Document Number	Description
CORP-AD-FRM-1002	Document & Revision Numbering System
CORP-AD-FRM-1057	KML Capital Project Documents - Document & Revision Numbering System
CORP-GE-PLN-1002	Document & Data Management Plan
CORP-GE-BOD-1001	Basis of Design
CORP-GE-SPC-1001	Equipment Labeling Specification
CORP-GE-SPC-1002	Specification for Packing, Marking and Documentation Specification
CORP-HS-PLN-1001	Occupational Health and Safety Management Plan
CORP-AD-SPC-1001	Supplier Instruction Specification
CORP-QA-SPC-1001	Supplier Quality Requirements Specification
CORP-QA-SPC-1002	Requirements for Compilation of Manufacturers Data Report (MDR) by Contractors
1300-PI-SPC-1001	PIPING TECHNICAL SPECIFICATION
CORP-PI-BOD-1001_C	PIPING DESIGN CRITERIA
CORP-PI-DRG-1034	STANDARD PIPE SUPPORT DRAWING SUPPORT CONTENTS
CORP-PI-DRG-1036	STANDARD PIPE SUPPORT DRAWING SLIDE PLATE SLP
CORP-PI-DRG-1037	STANDARD PIPE SUPPORT DRAWING EQUIPMENT LUG
CORP-PI-DRG-1038	STANDARD PIPE SUPPORT DRAWING EQUIPMENT LUG (FOR JT10)

**KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION**

CORP-PI-DRG-1039	STANDARD PIPE SUPPORT DRAWING EQUIPMENT LUG (FOR JT30)
CORP-PI-DRG-1040	STANDARD PIPE SUPPORT DRAWING J010C U-BOLT DN10-600
CORP-PI-DRG-1041	STANDARD PIPE SUPPORT DRAWING J060C SLIDE PIPE SHOE DN15-600
CORP-PI-DRG-1042	STANDARD PIPE SUPPORT DRAWING J070C SLIDE PIPE SHOE DN650-1000
CORP-PI-DRG-1043	STANDARD PIPE SUPPORT DRAWING J080C SLIDE PIPE SHOE DN1050-1300
CORP-PI-DRG-1044	STANDARD PIPE SUPPORT DRAWING J090C PIPE SHOE GUIDE DN15-600
CORP-PI-DRG-1045	STANDARD PIPE SUPPORT DRAWING J109C PIPE SHOE GUIDE DN650-1000
CORP-PI-DRG-1046	STANDARD PIPE SUPPORT DRAWING J110 PIPE SHOE GUIDE DN1050-1300
CORP-PI-DRG-1047	STANDARD PIPE SUPPORT DRAWING J120C HOLD DOWN GUIDE FOR SHOE
CORP-PI-DRG-1048	STANDARD PIPE SUPPORT DRAWING J160C LINE STOP FOR CLAMPED SHOE
CORP-PI-DRG-1049	STANDARD PIPE SUPPORT DRAWING J170C LINE STOP FOR CLAMPED SHOE
CORP-PI-DRG-1050	STANDARD PIPE SUPPORT DRAWING J180 LINE STOP FOR WELDED SHOE
CORP-PI-DRG-1051	STANDARD PIPE SUPPORT DRAWING J240 GUIDE FOR HOR. BARE PIPE DN15-1100
CORP-PI-DRG-1052	STANDARD PIPE SUPPORT DRAWING J250 LINE STOP FOR DN200-900 (CS)
CORP-PI-DRG-1053	STANDARD PIPE SUPPORT DRAWING J260 LINE STOP WITH PAD

**KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION**

CORP-PI-DRG-1054	STANDARD PIPE SUPPORT DRAWING J270 WELD LUG WITH U-BOLT
CORP-PI-DRG-1056	STANDARD PIPE SUPPORT DRAWING J270 WELD LUG WITH U-BOLT
CORP-PI-DRG-1057	STANDARD PIPE SUPPORT DRAWING J300 FOR DN15-150
CORP-PI-DRG-1058	STANDARD PIPE SUPPORT DRAWING J310 LUG FOR VERTICAL PIPE DN400-1150
CORP-PI-DRG-1059	STANDARD PIPE SUPPORT DRAWING J320 GUIDE LUG FOR VERTICAL PIPE DN400-1050
CORP-PI-DRG-1060	STANDARD PIPE SUPPORT DRAWING J330 SLIDE LEG FOR DN40-600
CORP-PI-DRG-1061	STANDARD PIPE SUPPORT DRAWING J340 ANCHOR LEG FOR DN40-600
CORP-PI-DRG-1062	STANDARD PIPE SUPPORT DRAWING J350 ADJUSTABLE LEG FOR DN40-150
CORP-PI-DRG-1063	STANDARD PIPE SUPPORT DRAWING J360 ADJUSTABLE LEG FOR DN200-600
CORP-PI-DRG-1064	STANDARD PIPE SUPPORT DRAWING J370 DUMMY PIPE SUPPORT DN40-600
CORP-PI-DRG-1065	STANDARD PIPE SUPPORT DRAWING J380 DUMMY PIPE SUPPORT DN40-600
CORP-PI-DRG-1066	STANDARD PIPE SUPPORT DRAWING J390 CANTILEVER SUPPORT
CORP-PI-DRG-1067	STANDARD PIPE SUPPORT DRAWING J400 TRIANGULAR BRACKET
CORP-PI-DRG-1068	STANDARD PIPE SUPPORT DRAWING J401 BRACKET FOR VERTICAL PIPE DN150-400
CORP-PI-DRG-1069	STANDARD PIPE SUPPORT DRAWING J410 TRIANGULAR BRACKET

KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION

CORP-PI-DRG-1070	STANDARD PIPE SUPPORT DRAWING J420 BRACKET FOR EQUIPMENT DN15-150
CORP-PI-DRG-1071	STANDARD PIPE SUPPORT DRAWING J430 BRACKET FOR EQUIPMENT DN200-350
CORP-PI-DRG-1072	STANDARD PIPE SUPPORT DRAWING J440 BRACKET FOR EQUIPMENT DN15-150
CORP-PI-DRG-1073	STANDARD PIPE SUPPORT DRAWING J450 BRACKET FOR EQUIPMENT DN200-350
CORP-PI-DRG-1074	STANDARD PIPE SUPPORT DRAWING J460 BRACKET FOR EQUIPMENT DN15-50
CORP-PI-DRG-1075	STANDARD PIPE SUPPORT DRAWING J470 'TT' TYPE ON STRUCTURE (ANGLE)
CORP-PI-DRG-1076	STANDARD PIPE SUPPORT DRAWING J480 'TT' TYPE ON STRUCTURE (CHANNEL)
CORP-PI-DRG-1077	STANDARD PIPE SUPPORT DRAWING J490 'TT' TYPE ON GROUND (ANGLE)
CORP-PI-DRG-1079	STANDARD PIPE SUPPORT DRAWING J520 CANTILEVER SUPPORT ON STRUCTURE (DN15-50)
CORP-PI-DRG-1080	STANDARD PIPE SUPPORT DRAWING J530 CANTILEVER SUPPORT ON GROUND (DN15-50)
CORP-PI-DRG-1081	STANDARD PIPE SUPPORT DRAWING J540 ANGLE CANTILEVER SUPPORT DN15-50
CORP-PI-DRG-1082	STANDARD PIPE SUPPORT DRAWING J560 ROD HANGERS WITH PIPE CLAMP
CORP-PI-DRG-1083	STANDARD PIPE SUPPORT DRAWING J562 DOUBLE ROD HANGER
CORP-PI-DRG-1084	STANDARD PIPE SUPPORT DRAWING J570 ROD HANGER WITH LUG DN50-350
CORP-PI-DRG-1085	STANDARD PIPE SUPPORT DRAWING J580 BRACKET THROUGH FLOOR DN50-400

**KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION**

CORP-PI-DRG-1088	STANDARD PIPE SUPPORT DRAWING J800 T TYPE SUPPORT FOR DN15-40
CORP-PI-DRG-1089	STANDARD PIPE SUPPORT DRAWING J810 T TYPE CANTILEVER SUPPORT
CORP-PI-DRG-1090	STANDARD PIPE SUPPORT DRAWING J820 CANTILEVER SUPPORT ON WALL
CORP-PI-DRG-1091	STANDARD PIPE SUPPORT DRAWING J830 TRIANGULAR SUPPORT ON WALL
CORP-PI-DRG-1092	STANDARD PIPE SUPPORT DRAWING J840 DOUBLE POST SUPPORT
CORP-PI-DRG-1093	STANDARD PIPE SUPPORT DRAWING J860 SUPPORT WITH U-BOLT
CORP-PI-DRG-1094	STANDARD PIPE SUPPORT DRAWING J870 SUPPORT WITH CLAMP
CORP-PI-DRG-1095	STANDARD PIPE SUPPORT DRAWING J880 SUPPORT WITH U-BOLT
CORP-PI-DRG-1096	STANDARD PIPE SUPPORT DRAWING J900 T TYPE SUPPORT
CORP-PI-DRG-1097	STANDARD PIPE SUPPORT DRAWING J920 TRUNNION DN80-600
CORP-PI-DRG-1098	STANDARD PIPE SUPPORT DRAWING J930 PICK-UP FROM BARE PIPE DN100-600
CORP-PI-DRG-1099	STANDARD PIPE SUPPORT DRAWING PIPE CLAMP TYPE-A DN15-600
CORP-PI-DRG-1100	STANDARD PIPE SUPPORT DRAWING PIPE CLAMP TYPE H DN650-1000
CORP-PI-DRG-1101	STANDARD PIPE SUPPORT DRAWING JT10 DOUBLE CANTILEVER BRACKET
CORP-PI-DRG-1102	STANDARD PIPE SUPPORT DRAWING JT30 DOUBLE CANTILEVER BRACKET

KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION

CORP-PI-DRG-1103	STANDARD PIPE SUPPORT DRAWING J561 HANGER FOR COLD INS. PIPE DN25-400
CORP-PI-DRG-1104	STANDARD PIPE SUPPORT DRAWING J620 SLIDE PIPE SHOE FOR COLD INS. PIPE DN15-900
CORP-PI-DRG-1105	STANDARD PIPE SUPPORT DRAWING J670 LUG FOR VER. PIPE FOR COLD INS. PIPE DN15-150
CORP-PI-DRG-1109	STANDARD PIPE SUPPORT DRAWING J890 SUPPORT FOR VER. COLD INS. PIPE DN15-100
CORP-PI-DRG-1111	PIPING STANDARD DRAWING RUBBER LINED LATERAL TEE
CORP-PI-DRG-1112	SPECIAL PIPE SUPPORT SPS002 U-BOLT ANCHOR FOR PE PIPE OD32-355
CORP-PI-DRG-1113	PIPING STANDARD DRAWING SAFETY SHOWER AND EYE BATH
CORP-PI-DRG-1115	SPECIAL PIPE SUPPORT DRAWING SPS003 ROD HANGERS WITH PIPE CLAMP
CORP-PI-DRG-1125	SPECIAL PIPE SUPPORT DRAWING SPS004 ROD HANGERS FOR MH1 DN50-350
CORP-PI-DRG-1126	SPECIAL PIPE SUPPORT DRAWING SPS005 U-BOLT CLAMP FOR MH1 DN50-600
CORP-PI-DRG-1127	PIPING STANDARD DRAWING TYPICAL GLAND WATER INSTALLATION
CORP-PI-DRG-1128	PIPING STANDARD DRAWING PIPING SPECIAL FLANGES
CORP-PI-DRG-1129	SPECIAL PIPE SUPPORT SPS006 RISER FOR VERTICAL PIPE
CORP-PI-DRG-1131	PIPING STANDARD DRAWING DN450 & ABOVE SPECTACLE BLIND
CORP-PI-DRG-1133	PIPING STANDARD DRAWING RUBBER LINED TEE WITH HATCH
CORP-PI-DRG-1134	PIPING STANDARD DRAWING BLIND FLANGE WITH DRILLED HOLES

**KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION**

CORP-PI-DRG-1135	PIPING STANDARD DRAWING SUMP PUMP DISCHARGE SPOOL
CORP-PI-DRG-1136	PIPING STANDARD DRAWING 43° & 43.5° SPECIAL BEND
CORP-PI-DRG-1142	PIPING STANDARD DRAWING PUMP SUCTION ARRANGEMENT
CORP-PI-DRG-1161	PIPING STANDARD DRAWING PUMP DISCHARGE ARRANGEMENT
CORP-PI-DRG-1162	PIPING STANDARD DRAWING SUMP PUMP DISCHARGE
CORP-PI-DRG-1163	PIPING STANDARD DRAWING 15° PULLED BEND 3D_5D
CORP-PI-DRG-1164	PIPING STANDARD DRAWING 22.5° PULLED BEND 3D_5D
CORP-PI-DRG-1165	PIPING STANDARD DRAWING 30° PULLED BEND 3D_5D
CORP-PI-DRG-1166	PIPING STANDARD DRAWING 45° PULLED BEND 3D_5D
CORP-PI-DRG-1167	PIPING STANDARD DRAWING 60° PULLED BEND 3D_5D
CORP-PI-DRG-1168	PIPING STANDARD DRAWING 90° PULLED BEND
CORP-PI-DRG-1169	PIPING STANDARD DRAWING LAP JOINT FLANGE FOR SR1 PIPING
CORP-PI-DRG-1170	PIPING STANDARD DRAWING FF SO FLANGE FOR SR1 PIPING
CORP-PI-DRG-1171	PIPING STANDARD DRAWING FOR UTILITY STATION
CORP-PI-DRG-1172	PIPING STANDARD DRAWING FOR VENTS AND DRAINS
CORP-PI-DRG-1173	PIPING STANDARD DRAWING WELD DISTANCE
CORP-PI-DRG-1174	PIPING STANDARD DRAWING PIPING SPACING
CORP-PI-DRG-1175	PIPING STANDARD DRAWING PIPERACK & TRENCH CLEARANCES

**KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION**

CORP-PI-DRG-1177	IPING STANDARD DRAWING RUBBER LINED FABRICATED BRANCH TEES
CORP-PI-DRG-1178	PIPE STANDARD DRAWING RUBBER LINED REDUCING SPOOLS
CORP-PI-DRG-1179	PIPING STANDARD DRAWING RUBBER LINED SPOOLS
CORP-PI-DRG-1180	PIPING STANDARD DRAWING RUBBER LINED Y PIECE
CORP-PI-DRG-1181	STANDARD PIPE SUPPORT DRAWING SUPPORT INDEX SH 1
CORP-PI-DRG-1182	STANDARD PIPE SUPPORT DRAWING SUPPORT INDEX SH 2
CORP-PI-DRG-1183	STANDARD PIPE SUPPORT DRAWING SUPPORT INDEX SH 3
CORP-PI-DRG-1184	STANDARD PIPE SUPPORT DRAWING SUPPORT INDEX SH 4
CORP-PI-DRG-1185	STANDARD PIPE SUPPORT DRAWING SUPPORT INDEX SH 5
CORP-PI-DRG-1186	STANDARD DRAWING RUBBER LINED 85° SPECIAL EQUAL TEE
CORP-PI-DRG-1187	PIPING STANDARD DRAWING UTILITY STATION HOSE RACK
CORP-PI-DRG-1188	STANDARD PIPING DRAWING ELECTROMAGNETIC FLOWMETER
CORP-PI-DRG-1189	PIPING STANDARD DRAWING RUBBER LINED LATERAL REDUCING TEE
CORP-PI-DRG-1191	PIPING STANDARD DRAWING RUBBER LINED 82.5° - 88.5° SPECIAL TEE
CORP-PI-DRG-1192	SPECIAL PIPE SUPPORT DRAWING SPS001 ROD HANGERS WITH PIPE CLAMP
CORP-PI-DRG-1195	PIPING STANDARD DRAWING PIPING SPECIAL BEND WITH SUPPORT
CORP-PI-DRG-1197	PIPING STANDARDS ORIFICE PLATE DN50 TO DN600 - DETAILS

KARARA MINING LIMITED
HPGR COOLING STATION RELOCATION

CORP-PI-DRG-1201	PIPING STANDARD DRAWING TYPICAL PIPE SUPPORTS
CORP-PI-DRG-1202	PIPING STANDARD DRAWING GLAND WATER ASSEMBLY - UNREGULATED
CORP-GE-SPC-1004_1	SPECIFICATION FOR SURFACE TREATMENT OF STRUCTURAL STEELWORK AND PIPEWORK