



**P-113A
MUD INJECTION PUMP**
 RATED CAPACITY: 112 m³/h @ 3803 kPa ΔP
 MOTOR: 150 kW
 (1 x 100%)
 INSULATION: NONE
 TRACING: NONE
 TRIM: PW-178-ASJ/PW-179-CSJ

**WATER TREATMENT PUMP BUILDING
BU-110**

- TRIP P-113A ON LALL-1072 OR LALL-1070
- ESD2
- ESD1
- TRIP P-113A ON LALL-1130A
- TRIP P-113A ON VAHH-1130A
- START P-113A ON LAH-1070
- STOP P-113B ON LAL-1070
- P-113A NOT PERMISSIVE ON PALL-1122
- TRIP P-113A ON FALL-1121
- TRIP P-113A ON PAHH-1314
- TRIP P-112A ON P-113A TRIP
- TRIP P-113A ON P-112A TRIP
- TRIP P-113A ON PAHH-1314
- TRIP P-112A/B & P-113A/B ON FALL-1121

- NOTES:**
1. ALL EQUIPMENT AND INSTRUMENT TAGS ARE PREFIXED WITH "BL-".
 2. ALL INSTRUMENT, VENT AND DRAIN CONNECTIONS SHALL BE 2" MINIMUM ON ALL INTERNALLY COATED PIPING.
 3. REFER TO P&ID PL12557B FOR DETAILS OF ELECTRICAL MONITORING AND CONTROL SIGNAL.
 4. REFER TO AUXILIARY P&ID PL12556A FOR LUBE OIL/SEAL SYSTEM AND VIBRATION/BEARING TEMPERATURE MONITORING DETAILS.
 5. P-109, P-112A AND P-113A ARE PROVIDED WITH A COMMON SUMP WITH LEVEL SWITCH. REFER TO PL12529A FOR LEVEL ALARM DETAILS.
 6. * DENOTES PULSATION DAMPENER SUPPLIED BY VENDOR.
 7. PSV-1130 SIZE TO BE CHECKED FOR REVERSE FLOW FROM THE PIPELINE IF OTHER HIGHER PRESSURE SOURCES ARE TIED INTO THE DISPOSAL SYSTEM.

REFERENCE DRAWINGS	DWG. NO.	NO.	DATE	PROJECT DESCRIPTION	PROJ.	AFE	EPCM Co.	EPCM No.	APPD.
		1	2012-06-28	BEAR LAKE 3IK BBL/D BATTERY		11140425	BANTREL	1083	JJM

CAUTION : READ BEFORE EXCAVATION
 ALL EXCAVATIONS MUST BE CARRIED OUT AS PER Cenovus Energy Inc. "GROUND DISTURBANCE PRACTICES"

ISSUE STAGE	DATE	BY	CHKD.	APPD.
DESIGN (A)	2012-11-22	YB	GB	LZ
CONSTRUCTION (C)	2013-05-23	MH	LZ	LZ
CONSTRUCTION (C)	2013-11-20	MH	LZ	LZ

PERMIT STAMP

BANTREL
 APEGGA PERMIT: P 3913
 D. Mitchell
 2013/12/10

ENGINEER'S STAMP

PROFESSIONAL ENGINEER
 License No. 1083
 2013/12/10

cenovus ENERGY

NORTH BTRY. 12-11
 12-11-083-20 W4M
 BATTERY
 12-11-083-20 W4M
 SCALE: NTS (A1 Size) EPC No. 1083

BANTREL
 TITLE: BEAR LAKE - P&IDS
 MUD INJECTION PUMP P-113A

AREA: PELICAN LAKE CLASS: A FILE NO.: PL12530A

Drawings Must Comply with Cenovus Energy Drafting & Drawing Specifications