



EQUIPMENT DATA SHEETS

Customer:

Canadian Natural Resources Ltd.

Project:

CE414040 / Kirby Oil Sands

Document-No.:

VP058410-M200-00001

Date / Revision:

04 January 2012 / Rev. 00

23 April 2012 / Rev. 01



DATA SHEET
SLOP OIL CENTRIFUGE

CLIENT Canadian Natural Resources Ltd.
PROJECT CE414040 / Kirby Oil Sands
PLANT Slop Oil Centrifuge Package

1 APPLICABLE TO: QUOTATION PURCHASE AS BUILT Tag: 1-X-360
2 MANUFACTURER GEA WESTFALIA SEPARATOR MODEL ODA 80-01-537
3 No. OF CENTRIFUGES REQUIRED One (1) No. OF SLUDGE TANKS One (1)
4 TYPE: Nozzle centrifuge, continuous discharge SPECIFICATION _____
5 SERVICE CONTINUOUS INTERMITTENT STAND BY

DESIGN CONDITIONS	
TEMPERATURE, °C	120
PRESSURE, barg	10

OPERATING CONDITIONS			
INLET CONDITIONS (AT SKID EDGE)	MINIMUM	NORMAL	MAXIMUM
FLOWRATE, m³/hr	15		
TEMPERATURE, °C	60 - 80		
RAW DIESEL SUPPLY 'PRESSURE, barg	300 kPag		
RAW DIESEL OIL CHARACTERISTICS	as indicated in Jacobs Specification No. CE414030-P-21-20-00014 (In situ process specification)		

INLET FUEL CHARACTERISTICS	LIMIT	REMARKS
TYPE OF FUEL	Slop Oil	
VISCOSITY	100cP	diluted with diluents
DENSITY	0,96 - 0,98 g/ml	diluted with diluents
TEMPERATURE	85°C - 98°C	
PRESSURE	300 kPag	
WATER CONTENT	15 - 46 vol% at inlet	
SOLIDS IN SUSPENSION	4 % w	
SOLID CONTENT	YES	

PERFORMANCE			
OUTLET CONDITIONS			
FLOWRATE, m³/hr	15		
WATER CONTENT, vol %	< 0,5 BS&W		
SOLIDS CONTENT, vol %	< 0,2		
ABSORBED POWER / RATED	EACH 60 hP	NOISE LEVEL	dBA <85 @ 1m
FOR ELECTRIC MOTOR	TOTAL 63 hP		

31 **SITE CONDITIONS**
32 TEMPERATURE MAX 35 °C MIN 0 -29 °C RELATIVE HUMIDITY MAX 87.8 % MIN 53.8 %
33 LOCATION: INDOOR OUTDOOR OFFSHORE UNDER ROOF HEATED TROPICALISATION
34 MARINE ATMOSPHERE WINTERISATION
35 AREA CLASIFICATION: _____
36 OTHER CONDITIONS _____

CONSTRUCTION FOR DIESEL TREATMENT PACKAGE (Note 3)

CENTRIFUGE	CONNECTIONS					
	TP	SERVICE	No.	SIZE	RATING	FACING
<input checked="" type="radio"/> MANUFACTURER'S STANDARD						
<input type="radio"/> OTHER	10	Treated Dilbit	1	2"	150 LBS	ACT1N
MOUNTING MODULAR	11	Slop Oil Inlet	1	2"	150 LBS	ACT1N
FEED PUMP NO	12	Untreated Slop Return	1	2"	150 LBS	ACT1N
FILTER TYPE DOUBLE FILTER	13	Hot Process Water	1	1"	150 LBS	ACT1N
SLUDGE PUMP YES	14	Water Supply	1	1"	150 LBS	ACT1N
SLUDGE TANK YES	15	Hot Glycol Supply	1	3"	150 LBS	ACT1N
<input type="radio"/> LOOSE <input checked="" type="radio"/> INTEGRAL	16	Glycol Return	1	3"	150 LBS	ACT1N
	17	Produced Water	1	2"	150 LBS	ACT1N
	18	Vent	1	2"	150 LBS	ACT2S
	19	Leak Oil Discharge	1	1"	150 LBS	ACT1N
	20	Instrument Air Inlet	1	1/2"	150 LBS	ACT1N
	21	Nitrogen Inlet	1	1/2"	150 LBS	ACT1N
	22	Slop Relief	1	3"	150 LBS	ACT2S

57 Built-In Centripetal pump for oil and water discharge inside Centrifuge
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							EQUIPMENT No	1-Z-360		
							EQUIPMENT TITLE			
							SLOP OIL CENTRIFUGE PACKAGE			
1	23. Apr 12	Revised for approval	HE	HE		ZM	DOCUMENT No	REV.	SHEET	
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1 MATERIALS (Vendor to advise)

2 CENTRIFUGE	Cast Iron / Stainless Steel	FUEL PIPING	ACT1N	SLOP RELIEF	ACT2S
3 SLUDGE PUMP	Stainless Steel	WATER PIPING	ACT1N	VENT	ACT2S
4		INSTR. AIR	ACT1N		
5 DISCHARGE TANK	Carbon Steel	DISCH. PIPING	ACT1N		
6 COATING:	<input type="radio"/> MANUFACTURER'S STANDARD <input checked="" type="radio"/> According to Spec. KBP-SPEC-PL-101_R1, VP058410-M612-00001				

7 NOTES

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9 Note 3) Centrifuge Tie-In data can be found on the attached Dimensioned Drawing

10 Note 8) Instrument Power Supply (24VDC) derived in customer DCS for loop powered (2 wire) instruments.

11 Instrument Power Supply (24VDC) for field powered (4 wire) instruments is from GEA supplied 24 VDC power supply located in Terminal Box.

12 (120 VAC power to terminal box by Jacobs.)

13 Weight Centrifuge with bowl and motor: 1600 kg (empty) / 1620 kg (operating)

14 Centrifuge - Belt driven

15 Centrifuge Operating Speed: 6000 rpm

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18 ELECTRICAL, INSTRUMENTATION & CONTROL SYSTEM

19 Unit Control Panel (UCP) is scope of supply by the customer

20 WS only provides 4 Terminal Boxes and 1 Local Operator Panel

21 The instruments are connected with the Terminal Boxes

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23 Vibration monitoring 200150-18, with monitoring unit type 1900/27 Maker: Bently Nevada

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29 UTILITIES (Note 8)

ELECTRICAL	DRIVERS	CONTROL	INSTRUMENT
VOLTAGE	575	120	24VDC
HERTZ	60	60	---
PHASE	3	1	---

INSTRUMENT AIR		POTABLE WATER	
DESIGN PRESSURE	1035 kPag	SUPPLY PRESSURE	500 kPag
SUPPLY PRESSURE	550 - 862 kPag	SUPPLY TEMPERATURE	10 °C

TOTAL UTILITY CONSUMPTION			
INSTRUMENT AIR	0.1 Nm ³ /hr		
ELECTRICAL	approx. 65 HP	(Centrifuge motor & pump motor)	
POTABLE WATER	----* m ³ /day	*:variable; depends on water content in slop oil;	

42 SHOP INSPECTION AND TESTS

	SHOP INSPECTION AND TESTS		SHIPMENT		
	REQ'D.	WITNESS	DOMESTIC	EXPORT	EXPORT BOXING REQ'D.
43				<input checked="" type="radio"/>	<input checked="" type="radio"/>
44 SHOP INSPECTION	<input checked="" type="radio"/>	<input type="radio"/>	LONG TERM STORAGE FOR 12 MONTHS		
45 HYDROSTATIC	<input checked="" type="radio"/>	<input type="radio"/>			
46 MECHANICAL RUN	<input checked="" type="radio"/>	<input type="radio"/>			
47 DIMENSIONAL CHECK	<input checked="" type="radio"/>	<input type="radio"/>			
48 NOISE LEVEL TEST	<input checked="" type="radio"/>	<input type="radio"/>			
49 VIBRATION TEST	<input checked="" type="radio"/>	<input type="radio"/>			
50 FUNCTIONAL TEST	<input checked="" type="radio"/>	<input type="radio"/>			
51 GAS LEAK TEST	<input type="radio"/>	<input type="radio"/>			
52					

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