



BOA



AHTS BOA Bison

General Information

Owner	NFDS Offshore 1 AS
Manager	Boa Offshore AS
Type	Anchor Handling Tug Supply Vessel
Design	VS 491 CD
Delivery	May 2014
Builder	Bergen Group Fosen
Build No.	83
Flag	Malta
Port of Registry	Valletta
Class	DNV
IMO	9544413
MMSI	229 629 000
Class Notations	1A1, Ice C, Tug, Supply Vessel, Oilrec, SF, E0, Fire fighter -I+II, Dynpos- AUTR, Clean Design, Naut- OSV, COMF-V(3) C(3), T- MON, BIS, DK(+), HL (2.8)
Max. Propulsion Power	Total 19.830 kW (26.969 BHP)
Bollard Pull Design	Abt. 275 tonnes *

Engines and Propulsion

Main Engines	2 x Wärtsila W32V16 720/750 rpm depending on mode
Output	2 x 8000kW (diesel conventional) @ 750 rpm corresponding propeller rpm 144
PTI	2 x 1500 kW
Max output in Boost mode on propellers	2 x 8000kW + 2 x 1500 kW = 19.000 kW
Aux Engines Genset	Caterpillar/Siemens 2 x 2100 kW
Shaft Genset	Siemens 2 x 3335 kW
Emergency Generator	Caterpillar 1 x 531 kW
Bow Thrusters	Brunvoll 2 x 1000 kW
Bow Azimuth Thruster	Brunvoll 1 x 830 kW
Tunnel Thruster Aft	Brunvoll 2 x 1000 kW
Gear box input from main engine and PTI	2 x Wartsila type SHC 105-SDC63
Propulsion Control System	Wartsila Lipstronic and communication with Siemens propulsion control system.
Propellers	2 x Wartsila CPP type 4E1190
Rudders	2 x Rolls Royce Flap rudders
Steering Gear	2 x Rolls Royce Tenfjord

Main Particulars

LOA	91 m
LPP	81,93 m
Breadth Moulded	22 m
Depth to first deck	9,6 m
Moulded Depth	7,9 m
Maximum Draught	8,2 m
Minimum Draught	6,0 m
Freeboard, min, FW Tropical	1345 mm
Freeboard, FW Summer	1511 mm
Freeboard, Tropical	1494 mm
Freeboard, Summer	1660 mm
Freeboard, Winter	1826 mm
Freeboard, North Atlantic	1876 mm
Air draught from B.L.	46 m
Height to 1st deck	9,6 m
Height to C-deck	19,0 m
Height to Bridge Deck	27,4 m
Lightship	Approx. 6000 tonnes
Deadweight	Approx. 4250 tonnes
Max DWT @ SLL	Approx. 4600 tonnes
Gross Tonnage	Approx. 7347 tonnes
Net Tonnage	Approx. 2200 tonnes

Cargo Deck Capacity

Cargo Deck Area	828 m ²
Deck Length	46,0 m
Deck Breadth	18,0 m
Max Deck Load	Approx. 1600 tons
Deck Strength	10 t/m ²
Deck Strength (stern to frame) # -5 to # 25	15 t/m ²
Cargo Rail Height	

Winches & Wires

Anchor handling/Towing Winch	1x National Oilwell Varco AHT 600/500/500t - w/ stub shafts for four (4) gypsies
600 tons AH Winch	AH Main Drum - Wire capacity 3800m of 92 mm - Chain capacity: - 76 mm, about 1145 m including socket compartment - 84 mm, about 930 m including socket compartment - Barrel dia. 2800 mm - Barrel length 5000mm - Flange dia. 4500mm
AH Main Drum Socket Compartement	- Wire Capacity 780 m of 92mm - Barrel dia. 2800mm - Barrel length 1100 mm - Flange dia. 4500mm
AH winch line pull and payout	600 t at first layer, 528 t layer 4, 461 t layer 7 with 92 mm wire - max line speed 1 layer 23 m/min
AH winch line Dynamic pay out	Two drive units/Four Electric-motors + water cooled LOADLIM brake/clutch with continious pay out Layer 1: 600 tons max pay out speed 61 m/min Layer 4: 528 tons max pay out speed 71 m/min Layer 7: 461 tons max pay out speed 81 m/min
AH winch brake load	Layer 1: 780 tons Layer 4: 690 tons Layer 7: 600 tons
Chain Wheels	76 mm: Chain tension 310 tons 84 mm: 370 tons
Tow/Work Winches	2 x 500 tons - Wire Capacity 1875 m of 92mm - Barrel dia. 1500mm - Barrel length 2200mm - Flange dia. 3800mm - Brake holding capacity 650 tonnes on 1st layer
Tow/Work Winch Line pull and payout	500 t at first layer, 340 tons layer 6, 254 tons layer 11. Max line speed 1st layer 15 m/min. layer 11: 30 m/min
Tow/Work winch line dynamic pay out	One drive unit/Two EI motors + water cooled LOADLIM brake/clutch based on continious pay out. Layer 1: 500 tons max pay out speed 36 m/min. Layer 6 max line pull 340 t, max pay out speed 55 m/min Layer 11 max line pull 254 tons, max pay out speed 73 m/min"
Work Winch Brake Load	Inner: 650 tons Middle: 442 tons Outer: 330 tons
Chain Wheels	76 mm: Chain tension 310 tons / 84 mm: 370 tons

Wires on Board

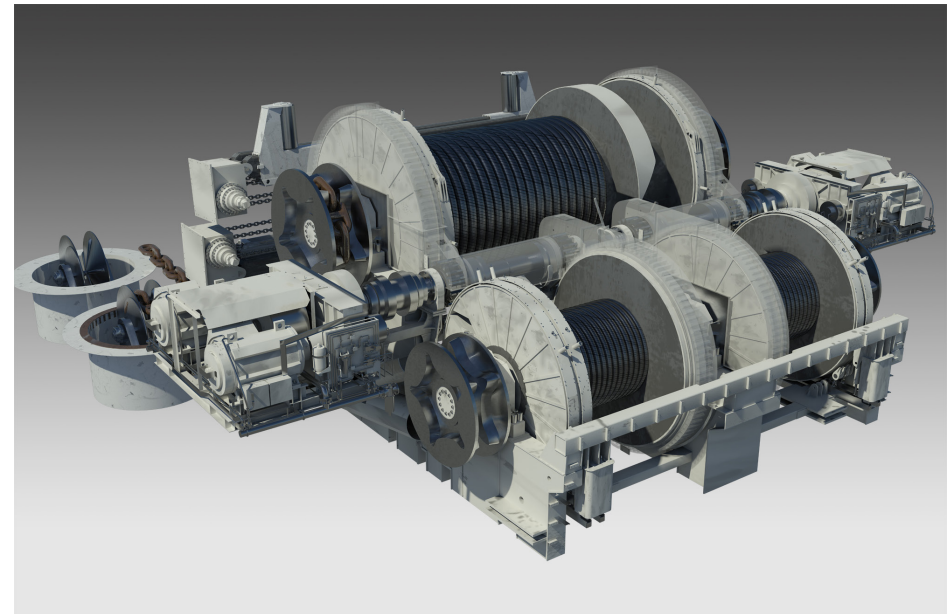
Towing wire(s)	2 x 1500 m 90 mm 659 t MBL
Work wire	1 x 650 m 90 mm 659 t MBL
Fore runner(s)	2 x 150 m 77 mm 1 x 150 m 80 mm

Secondary Winches

Secondary Winches	2 x National Oilwell Varco 170t secondary winch, model SW170 w/spooling device - Wire capacity 3998m of 92mm - Barrel dia. 1500 mm - Barrel length 4500/1100 mm - Flange dia. 4500 mm - 1600 m of 8" synthetic rope
Secondary winch line pull	Inner: 170 tons @ 15m/min, Middle: 113 tons @ 22m/min Outer: 85 tons @ 30m/min

Chain Lockers & Capacity

Rig Chain Gypsies	Gypsies mm 2 x 76mm + 2 x 84mm
Chain Lockers	4x161,5 m3 - Total 649 m3
Capacities	76 mm - 9200 m 84 mm - 8319 m
Chain Pulling winches to chain lockers	Rotating



Cranes

Gantry Crane	Triplex MHD 42, Travelling Gantry Crane 42 tons
Manipulator Finger Crane	TRIPLEX TKN-75-V4
Lifting Capacity	60 Tm
Gripper lift capacity max arm	50 kN
Winch Capacity	70 kN
Heavy lift eye capacity	245 kN
Max swing radius gripper	12,4 m
Max swing radius hook	9,0 m
Max swing radius lift eye	2,5 m

Manipulator Finger Crane	TILT ROTATOR
Break/lifting Capacity	90 kNm
Rotating Speed	6,3 rpm
Rotating Torque	9,1 kNm
Tilt Angle	+/- 40 degrees
Tilt Torque	24,5 kNm
Rotation	n X 40 degrees
Tools	1 ea Big Gripper, 1 ea Big Claw, 1 Pendant Gripper, 1 Bouy Cather

Triplex Manipulator Crane	
Max Lifting Capacity	11 Tm
Max Lifting Capacity at Jib Tip	2.500kp. S.W.L. at 4,4 m arm
Max Swing Radius Jib Tip	0-5,2 meters (incl. Telescopic arm 1 m)
Max turning torque with one gir	6.000 kpm
Slewing Speed (90 l/min)	3,0 rpm
Max heel when slewing	14 degrees
Slewing Angle	+/- 400 degrees

2 x Deck Cranes	Maker TTS, Type GPK 260-12-16
Lifting Data	Min arm 3,0 meter, max arm 16 meter
Harbour	6 tons @ 16 m / 10 tons @ 12 m / 12 tons @ 10 m arm
Internal	6 tons @ 16 m / 10 tons @ 12 m / 12 tons @ 10 m arm
Personnel	1 ton @16 meter / min 3 meter
Hoisting Speed	6 tons 30 m/min 12 tons 15 m/min (calculated at middle layer)
Luffing speed main boom only Up/down	70 sec. Average speed
Slewing Range	360 deg unlimited
Slewing Speed	1,2 rpm
Hoisting Height	40 m
A-frame	Prep. for 250t A-frame

AH & Deck Equipment

Towing Pins	2 x Triplex 300 t SWL, V - type
Shark Jaws	2 x Triplex 700 t SWL
Stern Roller	2 x 4000 mm dia l = 4000 mm, 750 tonns MWL , VS design
Tugger Winches	2 x Rapp Hydema 24 t max pull first layer (Max cap 230 m of 26 mm wire)
Capstans	2 x Rapp Hydema type CF 3500D/16,3
Spooling Sheave	Max pull force 100 t.

Cargo Securing Permanent Systems

Pad Eyes	12 on each side
Lashing Stations	6 lashing stations each with four lashing points in side bulkhead SWL 20 t
Rollers	8 rollers on each side dia 300 mm SWL 2 rollers aft of frame # -6 dia 300 mm SWL
Cargo Deck Sockets	16 cargo deck sockets twist lock SWL 20 t, top of sockets flush with deck

ROV System

ROV	Oceaneering Magnum work ROV Tophat TMS 3000 m max working depth
LARS	Sepro Active Heave Compensation winch system (electrical drive)

Dry Bulk System

Type	Randaberg
Discharge	Discharge of two different products simultaneously 1 x 75 tonnes/h through 80 m vertical and 120 m horizontal 5" hose.
Discharge	Discharge one products by 2 x 75 tonnes/h through 2 x 80 m vertical and 120 m horizontal 5" hose.



Fire Fighting & Anti Pollution Equipment

FIFI CLASS	I + II
Fire Pumps:	2 x Jason 3600 m3/h - 170mlc total 7200 m3/h
Fire Monitors:	2 x Jason 3600 m3/h total 7200 m3/h located on top of wheel
Sprinkler Pump	Azcue BOB 50/250 capacity 1000 cub.m/hour
ORO	The vessel is prepared for NOFO 2005 oil recovery equipment.

Accomodation

Total	39 persons
Single Cabins	19
Double Cabins	10
Deck Office	1
Hospital	1
Gymnasium	1
Cooler Room	1 - abt 30 m3
Freezer Room	1 - abt 30 m3
Dry provision/general store	1 - abt 130 m3
A/C for accommodation	Novenco, 100 % fresh air with entaphi recovery

Communication Equipment

Satcom	Fleet Broadband 512 KB
Satcom 2	Marlink KU-Band
MF/HF Systems	1 x Sailor 6363 MF/HF 250 W
VHF System	1 x Sailor 6222 5 x Sailor 6248
UHF	Fixed stations located at bridge FWD and AFT and ECR.
Inmarsat C	2 x Sailor 3027C
Passive UHF antenna system installed	Yes
Ship Security Alert System	SAILOR 6194
EPIRB-AUTO	1 x Syberg - TT-4062BSE406
EPIRB TRON	1 x EPIRB TRON 40SMKII/FBH-4
SART II	2
GMDSS-VHF-HANDHELD	Syberg - SP 3520 3+3

Dynamic Positioning System

Class Definition	IMO DP II, DNV Class AUTR
Dynamic Positioning	Kongsberg Maritime Type K-Pos DP-21/22
Reference system	
MRU	Kongsberg 1x MRU 5, 2 x MRU-D
HiPAP	HiPAP 500
RADius	2 receivers installed
Extended Kalman filter, Green DP control, High Precision control	
Winch control system interfaced to NOV AH/ Towing winch	
ERN calculation	99, 99, 99, 95

Speed & Consumption

Max Speed	18,0 kn/ 72 t/d
Transit Speed - Economical	10,0 kn/ 12 t/d
Transit Speed - Medium	12,0 kn/ 18 t/d
Transit Speed - High	14,0 kn/ 32 t/d
Transit Full Speed High (long duration)	16,0 kn/ 60 t/d
Harbor Consumption	1 t/d
Stand by (idling at sea)	4 t/d
DP Light	6 t/d
DP Heavy	20 t/d
Anchor handling ops	20-30 t/d
Towing 50% pull	43 t/d
Towing 80% pull	60 t/d
Towing 100% pull	75 t/d
Type of fuel	MDO/ MGO

Navigation Equipment

Gyro Compass	3 x Anschutz STD 22
Radar	1 x X-Band Raytheon Synapsis 1 x S-Band Raytheon Synapsis
Autopilot	1 x Ansschutz NP 5000 AS
ECDIS	Raytheon Synapsis ECDIS
AIS	Yes
Weather Fax	Yes
Navtex	Yes
Speedlog	Yes
Echosounder	1 x Skipper 50/200 kHz GDS102
DGPS 1	Syberg
DGPS 2	Syberg
Anemometer	Syberg
Sound Reception	Syberg

Tank Capacities (m3)

Ballast /Drill Water	2872 m3/2944 mt
Fresh Water	1004m3/1004 mt
Fuel Oil	1156 m3/994 mt
Liquid Mud	650 m3/1820 mt
Dry Bulk	291m3/699 mt
Rig Chain	649 m3/666 mt

Cargo Discharge Pumps

Fresh Water	2 x 150 m3/h
Ballast-/Drill	2 x 150 m3/h
Fuel Oil	2 x 150 m3/h
Liquid Mud	2 x 100 m3/h
Brine	2 x 100 m3/h

Connections

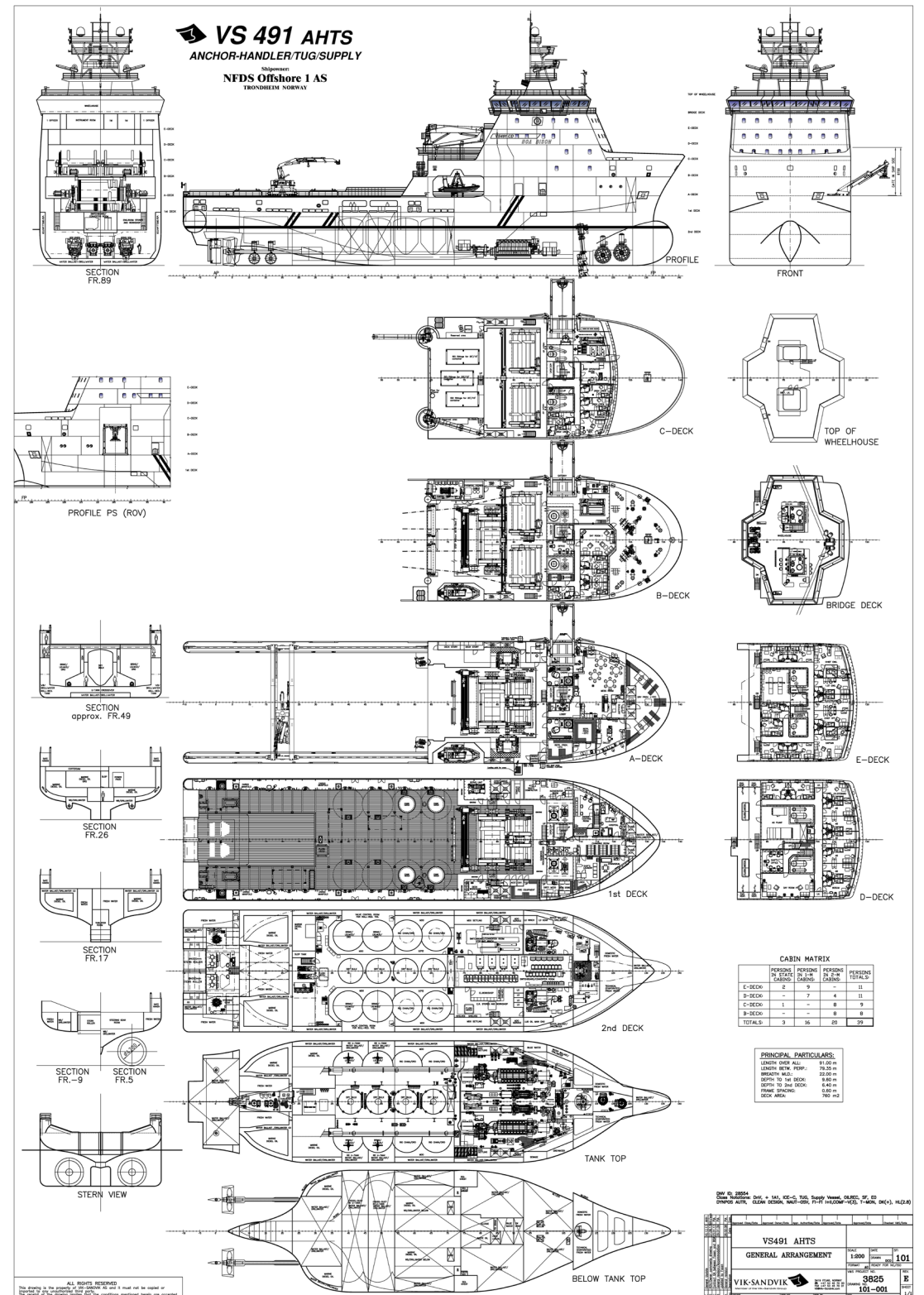
Drill Water	Weco 4" Female
Fresh Water	Weco 4" Female
Fuel Oil	Avery Hardoll 4" male
Dry Bulk	Weco 5" Female
Brine	Weco 4" Female
Liquid Mud	Weco 4" Female
ORO	Weco 6" Female

Safety Equipment

MOB Boat	Mare safety 700 FRB
MOB Boat Davit	TTS HL9D MOB3500

Miscellaneous

Box Cooling systems for fresh water system	Type NRF
Galvanic Hull Protection ICCPS	Type Cathwell
Working air/ Service air system	1 x Tamrotor TMC 18-8 EANA compressor 150 m3/h pressure 7,5 - 8,0 bar, receiver 1000 liter Air dryer
Nox Reducing Equipment	H + H Cathalysators on main and aux engines.
Hot Water Boiler	1 x Pyro 581 kW



TANK CAPACITIES

			Water Ballast	Fresh Water	Diesel Oil	Dry Bulk	Liquid Mud	Rig Chain
TONNES PER CBM			1,025	1,000	0,860	2,400	2,800	1,025
Tank ID		M3	MT	MT	MT	MT	MT	MT
01C	FOREPEAK	234,1	239,9					
11P	DOMESTIC	151,2		151,2				
12S	TECHNICAL	151,2		151,2				
13P	DOMESTIC	120,0		120,0				
14S	TECHNICAL	120,0		120,0				
201P	DOUBLE	65,3	66,9					
202S	DOUBLE	64,4	66,0					
20P	WING TANK	78,8	80,8					
26S	WING TANK	39,8	40,8					
301P	DOUBLE	86,4	88,6					
302S	DOUBLE	84,7	86,8					
31P	WINGTANK	105,7	108,3					
32S	WING TANK	105,7	108,3					
33P	MDO SERV.	23,1			19,9			
34S	MDO SERV.	23,1			19,9			
35P	MDO SETT.	57,9			49,8			
36S	MDO SETT.	57,9			49,8			
39P	EMERGENCY	3,2			2,8			
401P	DOUBLE	160,4	164,4					
402S	DOUBLE	160,4	164,4					
403C	DOUBLE	158,4	162,3					
407P	MDO Tank PS	85,3			73,3			
408S	MDO Tank SB	85,3			73,3			
411C	DryBulk No.1	72,8				174,8		
412C	DryBulk No.2	72,8				174,8		
413C	DryBulk No.3	72,8				174,8		
414C	DryBulk No.4	72,8				174,8		
41P	MDO WING	95,0			81,7			
421P	RIG/ORO Tank 1	161,5						165,6

TANK CAPACITIES

			Water Ballast	Fresh Water	Diesel Oil	Dry Bulk	Liquid Mud	Rig Chain
TONNES PER CBM			1,025	1,000	0,860	2,400	2,800	1,025
Tank ID		M3	MT	MT	MT	MT	MT	MT
422S	RIG/ORO Tank 1	161,5						165,6
423P	RIG/ORO Tank 2	163,1						167,2
424S	RIG/ORO Tank 2	163,1						167,2
425P	Liq./Brine/ORO No.1	164,4					460,2	
426S	Liq./Brine/ORO No.1	164,4					460,2	
427P	Liq./Brine/ORO No.2	160,6					449,8	
428S	Liq./Brine/ORO No.2	160,6					449,8	
42S	MDO WING	95,0			81,7			
43P	MDO TANK	62,3			53,5			
44S	MDO TANK	62,3			53,5			
45C	ROLL RED. TANK	297,7	305,1					
46C	ROLL RED. TANK	244,5	250,6					
501C	DOUBLE BOT. TANK	198,0	203,0					
51P	WING TANK	85,9	88,1					
52S	WING TANK	85,9	88,1					
53P	MDO TANK	196,6			169,1			
54S	MDO TANK	124,4			106,9			
601P	FW. TANK	156,7		156,7				
602S	FW. TANK	156,7		156,7				
61P	MDO TANK	92,4			79,5			
62S	MDO TANK	92,4			79,5			
65P	COFFERDAM	197,3	202,2					
66S	COFFERDAM	197,3	202,2					
71P	WING TANK	74,1		74,1				
72S	WING TANK	74,1		74,1				
73P	TANK AFT.	110,7	113,4					
74S	TANK AFT.	110,7	113,4					
TOTAL WEIGHTS TONNES			2943,6	1004,0	994,2	699,2	1820,0	665,6
TOTAL VOLUME CMB			2871,8	1004,0	1156,0	291,3	650,0	649,4



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