PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
280,012.02	964,304.60

PUNCT LEGATURA DE INCEPUT	
X	Y
280,012.02	964,304.60

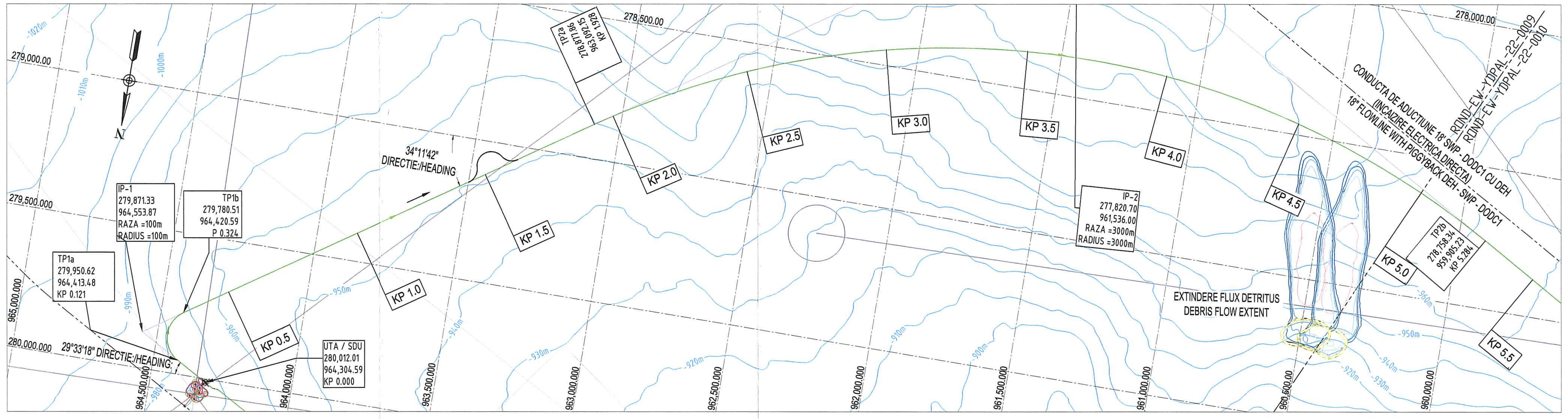
MATCH POINT END	
X	Y
278,628.94	960,158.13

PUNCT LEGATURA DE FINAL	
X	Y
278,628.94	960,158.13

LEGENDA / LEGEND

- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA DE ADUCTIUNE DOMINO 14"/ 14" DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



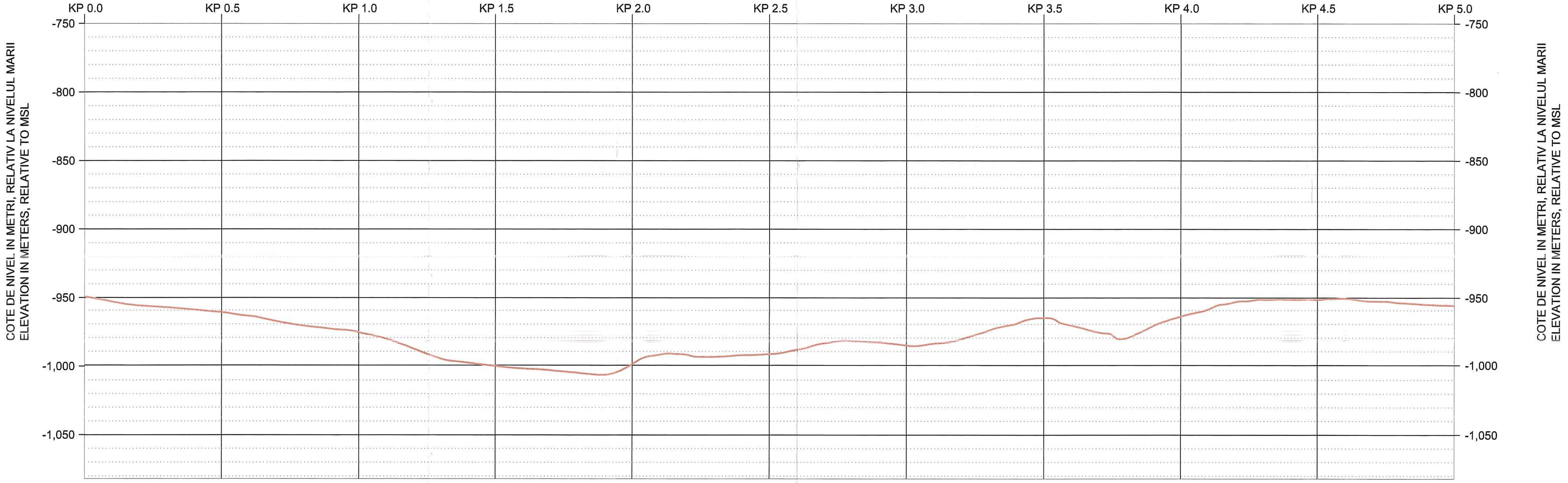
PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL

ACRONIME

TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE
UTA - ANSAMBLU CAPAT SISTEM OMBILICAL
SDU - UNITATE SUBACVATICA DE DISTRIBUTIE

ACRONYMS

TP - TORSION POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT
UTA - UMBILICAL TERMINATION ASSEMBLY
SDU - SUBSEA DISTRIBUTION UNIT



SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

KP 0.0 — KP 0.121 — KP 0.150 — KP 0.324 — KP 1.928 — KP 5.000

					KP 0.0 – KP 0.324	KP 0.324 – KP 1.928	KP 1.928 – KP 5.000
ELEMENTE PE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)		29° 33' 18" / 100	34° 11' 42"	3,000
	TRAVERSARE — CONDUCTA		CROSSING — PIPELINE		NU SE APLICA / N.A.		
	TRAVERSARE — CABLU		CROSSING — CABLE		NU SE APLICA / N.A.		
	TIP SOL PE SUPRAFATA FUNDULUI MARII		SEABED GROUND SOIL		ZONA1 - ARGILA VERZUI-INCHIS (NOTA 4) / ZONE 1 - DARK GREENISH CLAY (NOTE 4)		
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)	UMBILICAL DATA	OD (mm)		160		
	GREUTATE IN AER (USCATA) (N/m)		DRY WEIGHT (N/m)		347		
	GREUTATE IN APA (N/m)		SUBMERGED WEIGHT (N/m)		144		
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE (m)		MIN. CURVE RADIUS (m) INSTALLATION / OPERATION (m)		6.6 / 9.5		
SAPATURA & UMPLERE	ADANCIME SANT (m)	TRENCHING & BACKFILLING	TRENCHING DEPTH (m)		NU EXISTA / NONE		
	TIP UMPLUTURA / STRAT ACOPERIRE (m)		BACKFILLING TYPE / COVER TOP (m)		NU EXISTA / NONE		
CERINTE SPECIFICE	TOLERANTA LA INSTALARE(m)	SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)		±2.5 (KP 0.0 – KP 0.150); ±10		
	STRAT PIATRA / SALTELE		ROCK DUMP / MATTRESSES		NU SE APLICA / N.A.		

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. PENTRU DETALII PRIVIND CONEXIUNILE DINTRE PLATFORMA SI SONDELE SUBMARINE, SE VOR CONSULTA PLANSELE:
   -ROND-EW-YDLAY-22-0012 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC1;
   -ROND-EW-YDLAY-22-0005 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DOCDC2;
   -ROND-EW-YDPAL-22-0011 - PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP).
6. DATELE SISTEMULUI OMBILICAL TREBUIE SA FIE CONFIRMATE DUPA DESEMNAREA FURNIZORULUI. VALORILE CURENTE SUNT INDICATIVE SI VOR FI ADOPTATE CAND VOR FI STIUTE.
7. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
8. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL DOMINO DE LA DODC-1 PANA LA DODC-2 ESTE EGALA CU 6,011m. ACEASTA EXCLUDE APROVIMATIV 40m LUNGIME SURPLUS.
9. CURBA DE COMPENSARE DE APROXIMATIV 40m. AJUSTAREA FINALA A CURBEI DE COMPENSARE VA FI DETERMINATA IN PROIECTUL DETALIAT. AJUSTAREA FINALA A SISTEMULUI OMBILICAL DE 3m DACA ESTE NECESAR PENTRU ALINIERE.
10. ORIENTAREA UTA/SDU VA FI OPTIMIZATA IN FAZA PROIECTULUI DETALIAT PENTRU A INCERCA ELIMINAREA CURBELOR CARE NU SUNT NECESARE.
11. DEVIATIA FINALA FATA DE RISCURILE ALUNECARILOR GEOLOGICE VA FI REVIZUITA SI CONFIRMATA IN PROIECTUL DETALIAT.
12. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT NUMBER 160424 V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. FOR DETAILS OF TIE-INS TO THE PLATFORM AND THE SUBSEA WELLS REFER TO DRAWINGS:
   - ROND-EW-YDLAY-22-0012 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC1
   - ROND-EW-YDLAY-22-0005 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC2
   - ROND-EW-YDPAL-22-0011 FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. UMBILICAL DATA TO BE CONFIRMED AFTER UMBILICAL SUPPLY AWARDED. CURRENT VALUES ARE INDICATIVE AND WILL BE UPDATED WHEN KNOWN.
7. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
8. TOTAL LENGTH OF DOMINO UMBILICAL FROM DODC-1 TO DODC-2 IS EQUAL TO 6,011m. THIS EXCLUDES APPROX. 40m OVERAGE LENGTH.
9. SLACK LOOP OF APPROX. 40m FINAL SLACK ADJUSTMENT TO BE DETERMINED DURING DETAIL DESIGN. FINAL ADJUSTMENT OF UMBILICAL OF 3m, IF NEEDED FOR ALIGNMENT.
10. UTA/SDU ORIENTATION TO BE OPTIMISED DURING DETAIL DESIGN IN ORDER TO TRY TO ELIMINATE ANY UNNECESSARY ROUTING BENDS.
11. FINAL OFFSET BETWEEN GEOHAZARD FLOW TO BE REVIEWED AND CONFIRMED DURING DETAILED DESIGN.
12. MINIMUM DISTANCE OF 100m BETWEEN THE FLOWLINE AND THE UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.

SCALA

METRI: 0 — 100 — 500 — 1,000

SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS: 0 — 100 — 500 — 1,000

HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

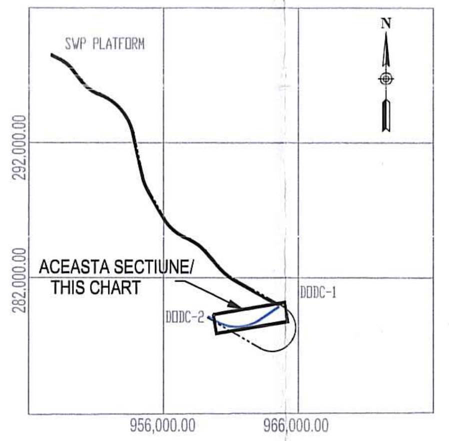
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	STEREO 70
PROIECTIE	Dublu Stereografica
Meridianul central (MC)	25.0
Latitudine Origine	46.0
Falsa origine estica	500,000.0
Falsa origine nordica	500,000.0
Factor de scala la MC	0.99975
DATE VERTICALE	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	STEREO 70
PROJECTION	Double Stereographic
Central meridian (CM)	25.0
Latitude of Origin	46.0
False Easting at origin	500,000.0
False Northing at origin	500,000.0
Scale factor at CM	0.99975
VERTICAL DATUM	MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
0-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
0-C	21.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
0-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
0-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA

VERIFICATOR / CHECKER		I. BUTNARIU		ANRE
VERIFICATOR/EXPERT / CHECKER/EXPERT	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/2007, RO 22804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
0	13OCT17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL DOMINO DODC-1 - DODC-2
DOMINO UMBILICAL DODC-1 - DODC-2

FISA ALINIAMENT
ALIGNMENT SHEET

FISA 1 DIN 2
SHEET 1 OF 2

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 10,000	ROND-EW-YDPAL-22-0009-C	DTAC	0-D

A1+ (1092x594)