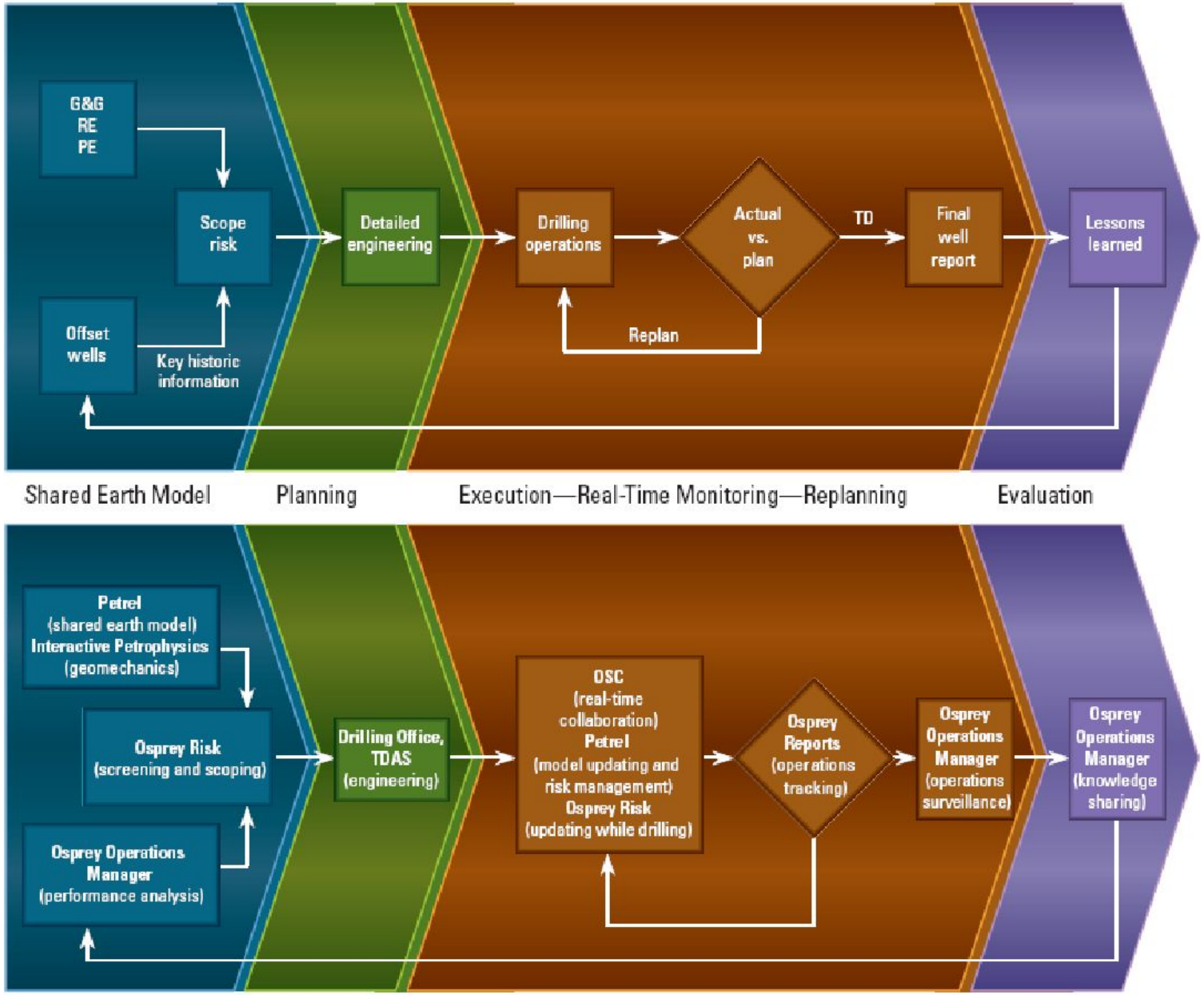
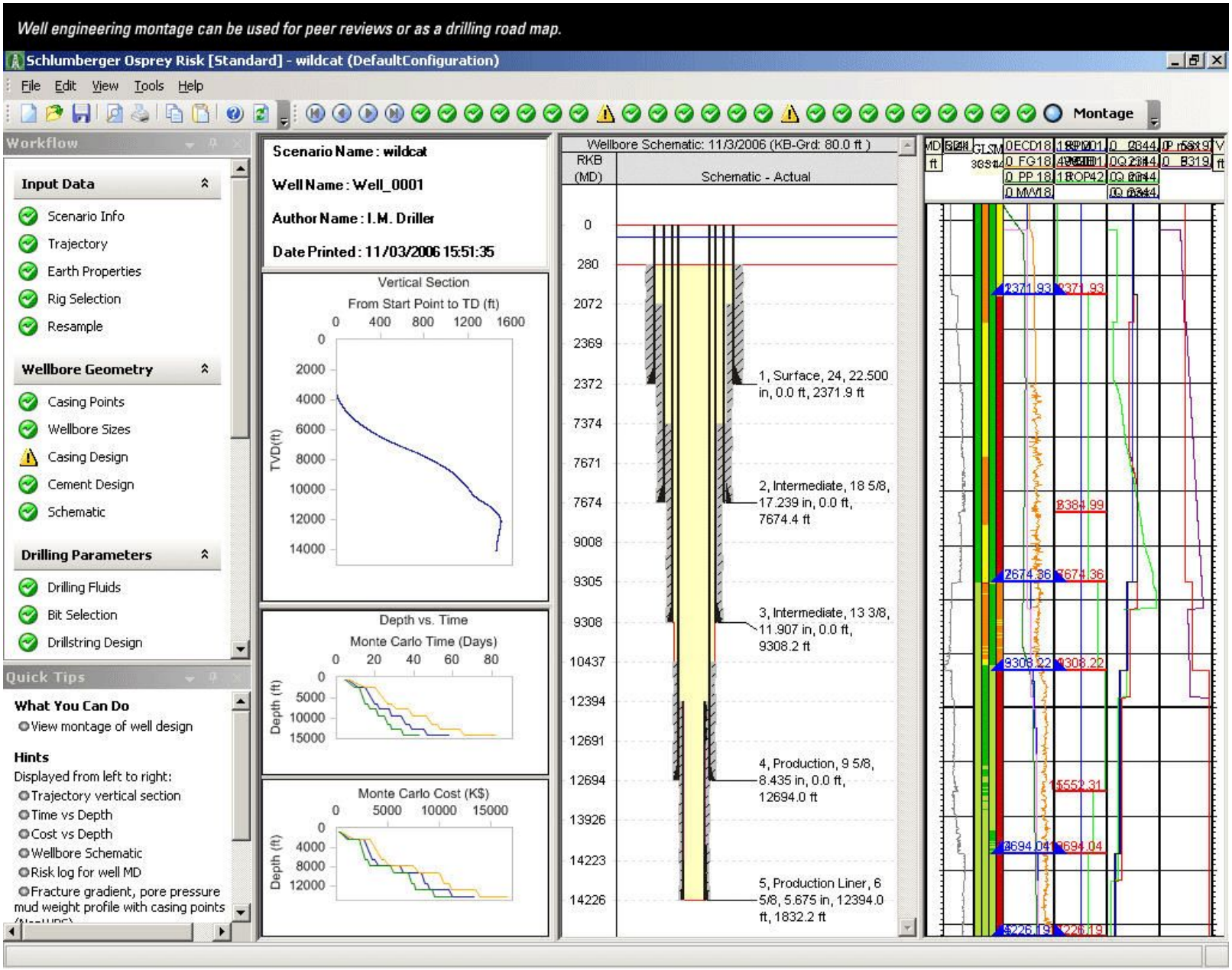
СТРУКТУРА ПРОЕКТИРОВАНИЯ БУРЕНИЯ СКВАЖИН

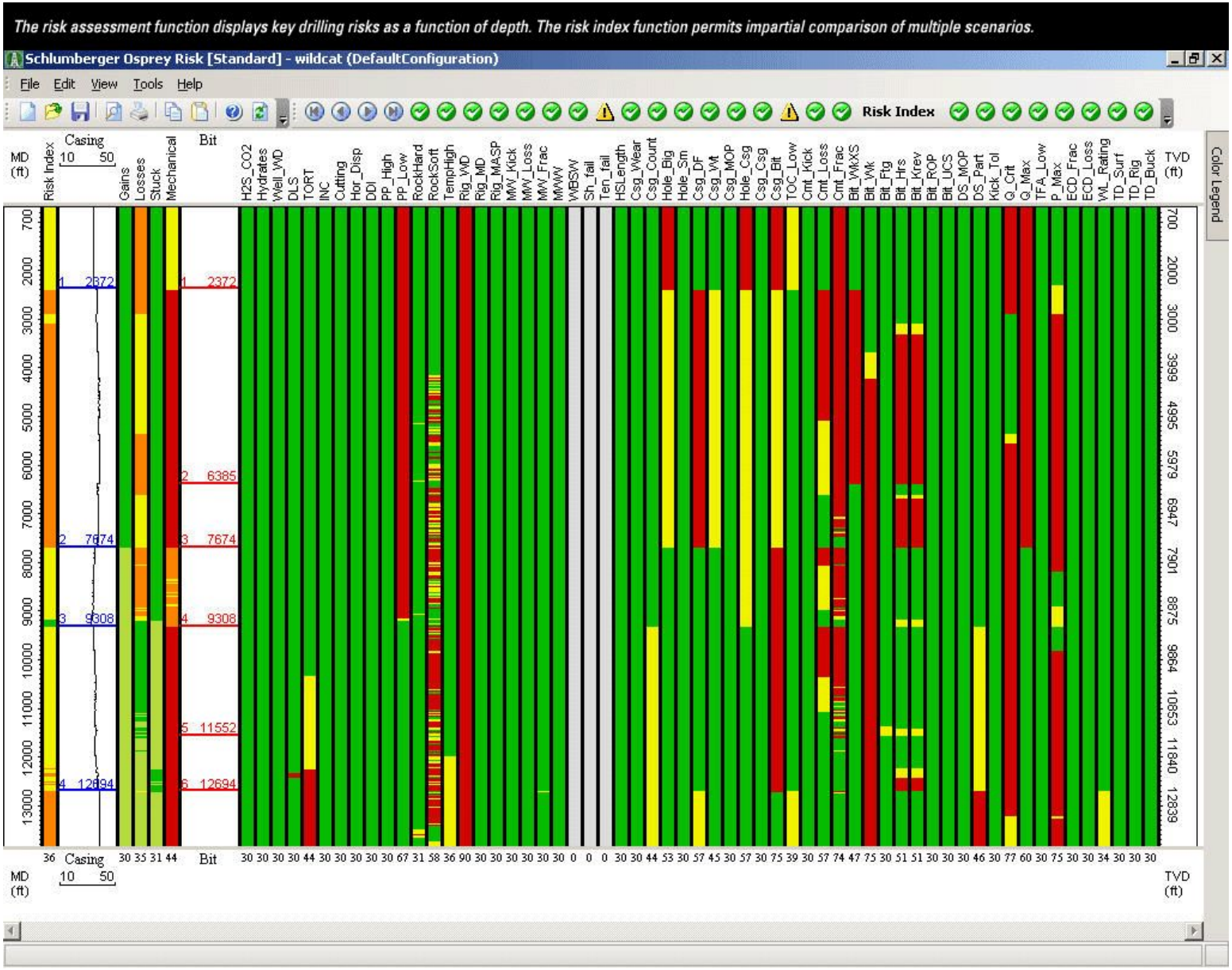
G&G = Geology and geophysics RE = Reservoir engineering PE = Production engineering OSC = Operation Support Center TD = Total depth



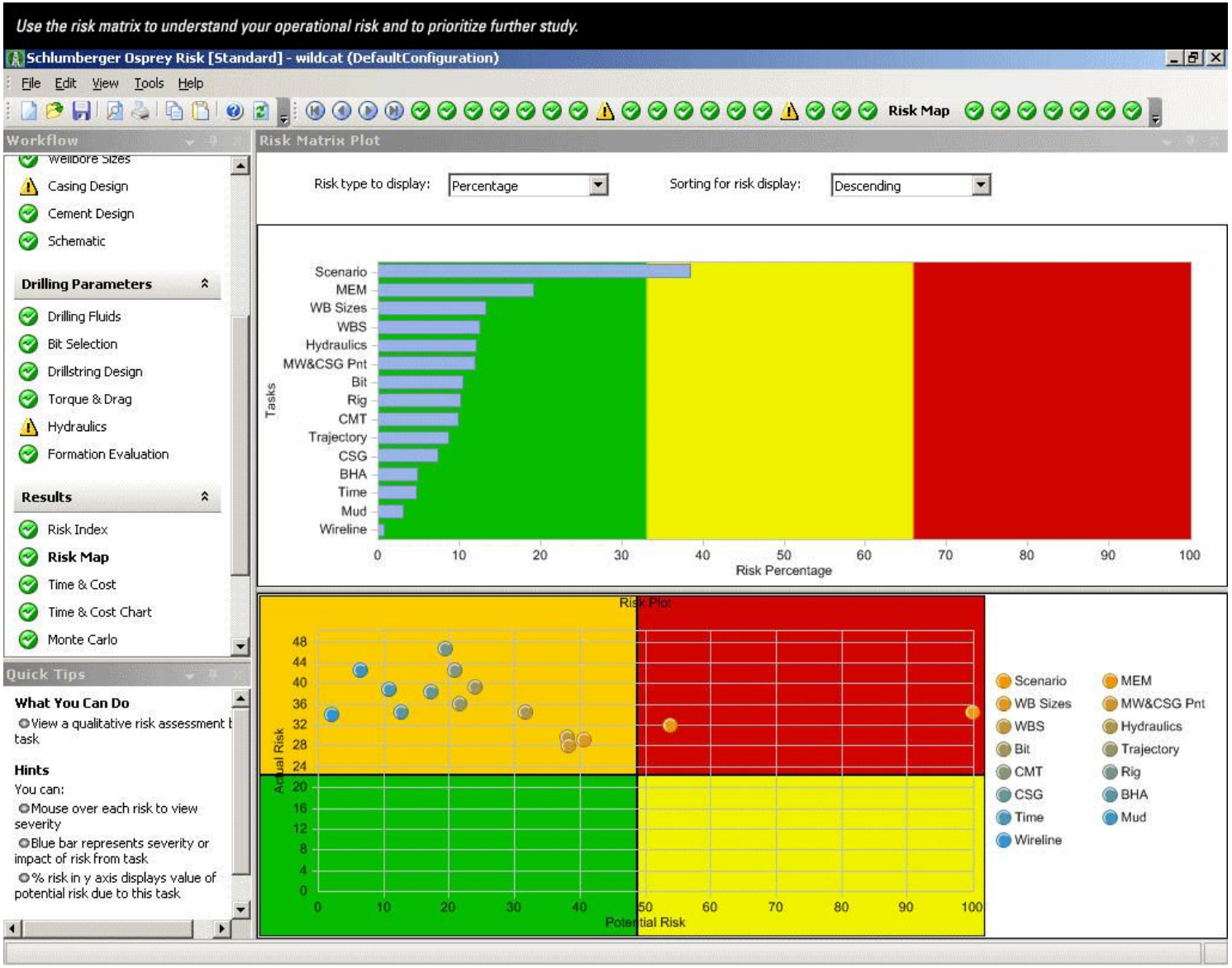
ФОРМИРОВАНИЕ РАСЧЕТНОГО ВАРИАНТА В ПРОГРАММЕ OSPRAY RISK



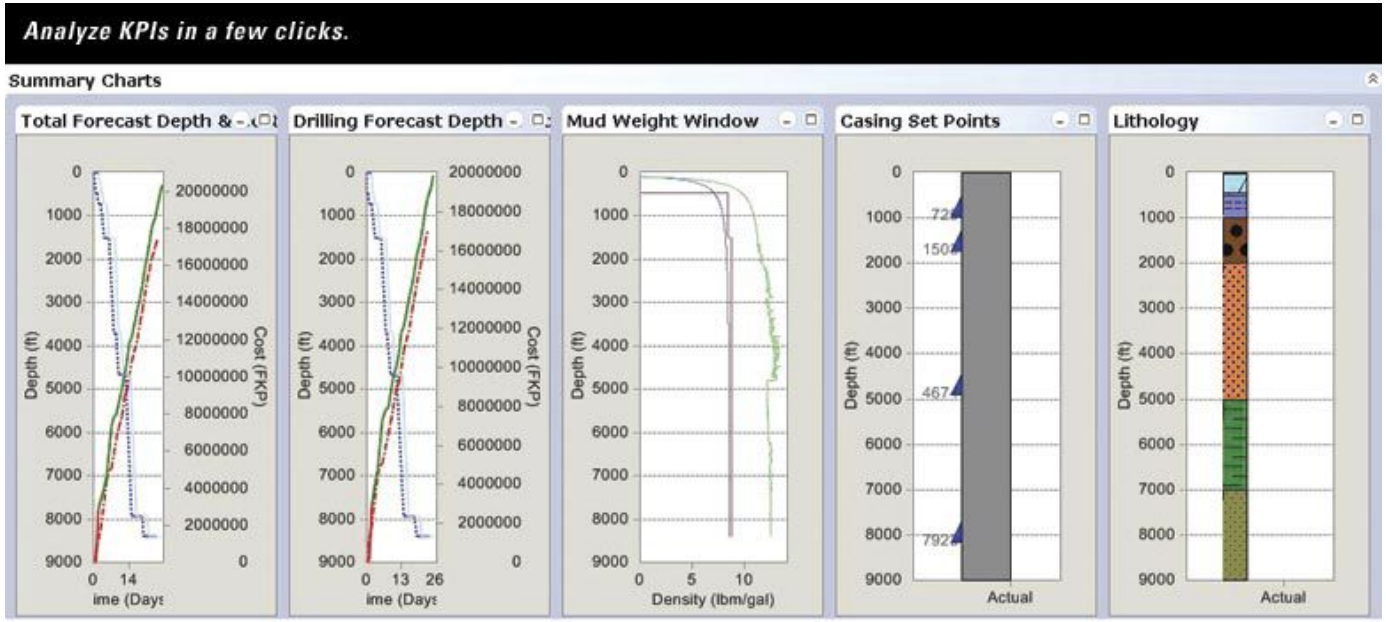
РЕЗУЛЬТАТЫ РАСЧЕТА ИНДЕКСА РИСКА В ПРОГРАММЕ OSPRAY RISK

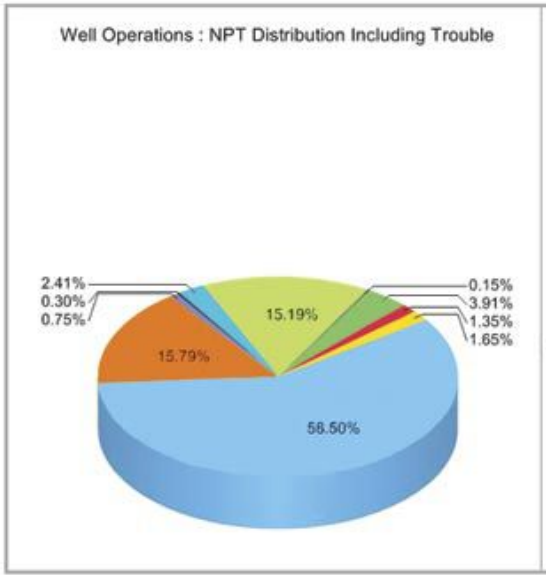


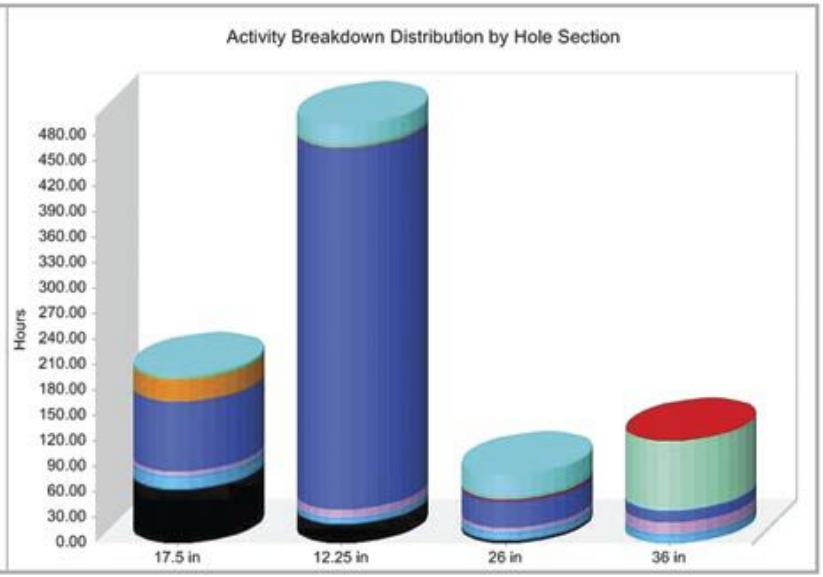
КАРТА РИСКОВ, СПРОГНОЗИРОВАННАЯ В ПРОГРАММЕ OSPRAY RISK



ОЦЕНКА ТЕХНОЛОГИЧЕСКИХ РЕШЕНИЙ ПРИ ПОМОЩИ OSPRAY RISK







РЕЗУЛЬТАТЫ АНАЛИЗА МЕТОДОМ МОНТЕ-КАРЛО

Accurately determine your financial exposure with Monte Carlo probabilistic analysis of time and cost.

Schlumberger Osprey Risk [Standard] - wildcat (DefaultConfiguration)

File Edit View Tools Help

Monte Carlo

Input Probability

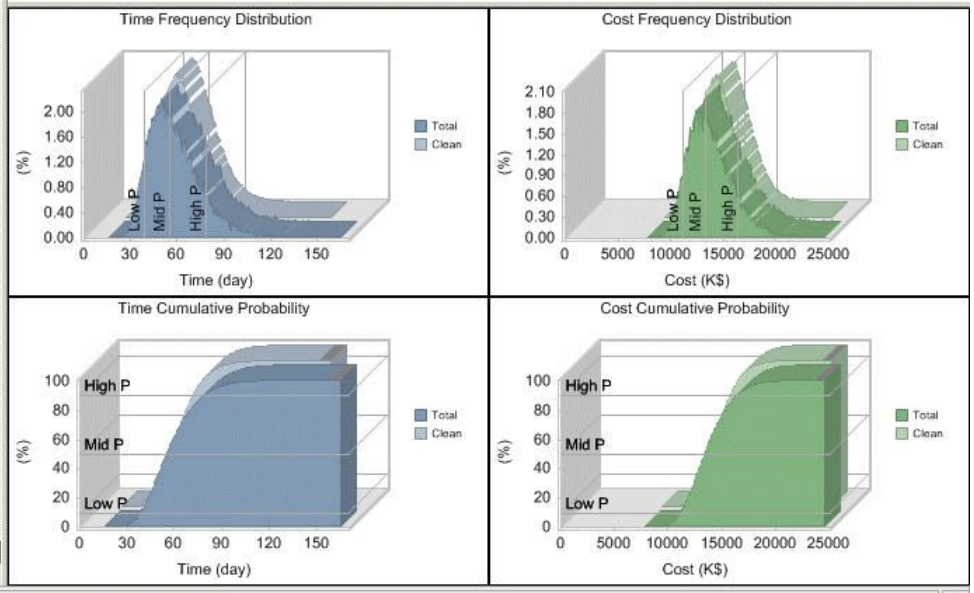
Number Of Iterations: 12000 | Low P% Time: 10 | Mid P% Time: 50 | High P% Time: 90 | Show Clean | Recompute

Monte Carlo Detailed Grid

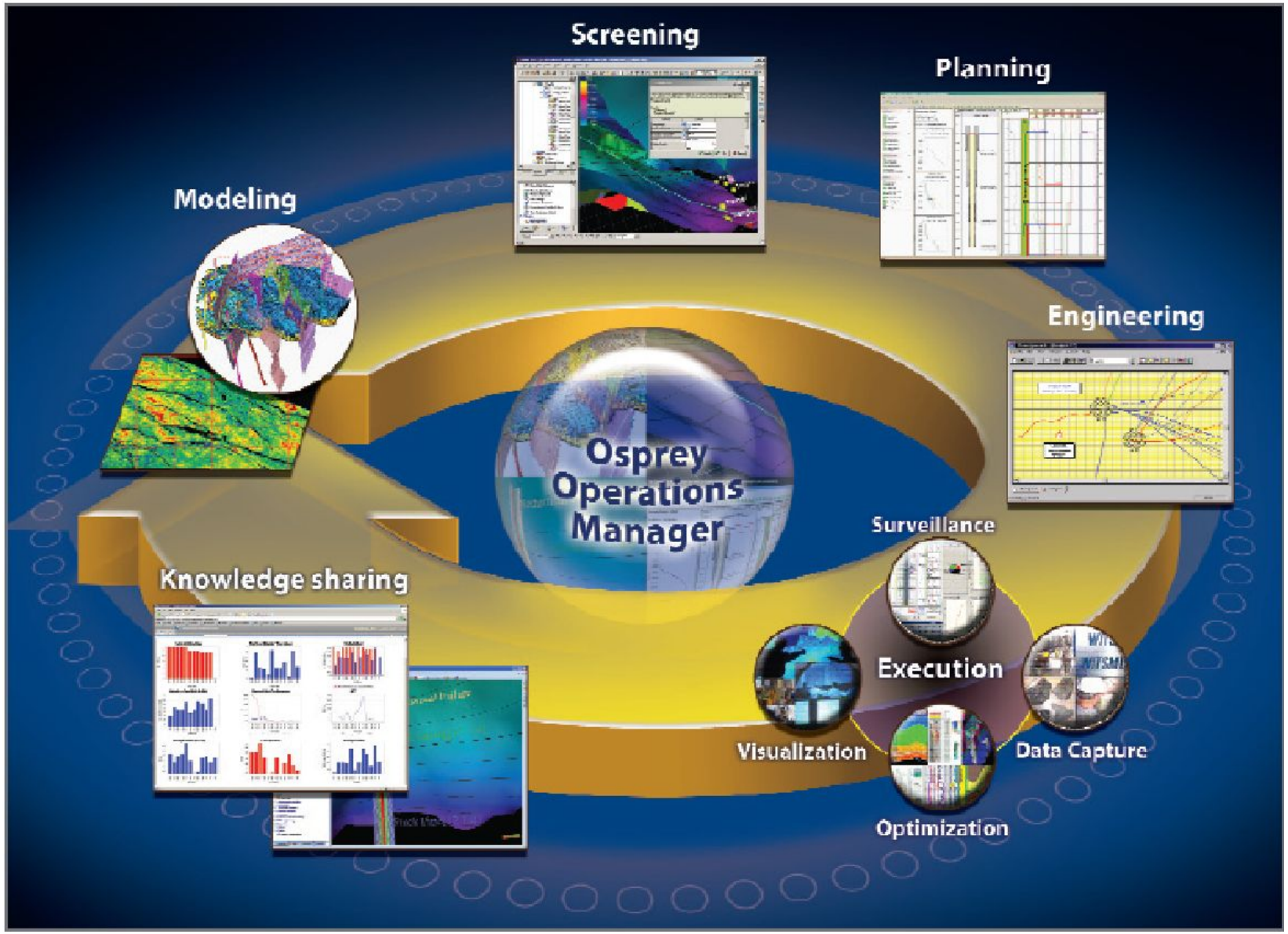
	Task Name	Low P% Time
		h
1	Total	861.11
2	Mobilize Rig Job	35.81
3	Tow Rig	18.19
4	Inspect Area	0.76
5	Safety Meeting	0.33
6	Position Rig	3.03
7	Extend Leg	5.26
8	Jack Up Rig	5.26
9	Skid Drilling Tower	0.76
10	Pick Up And Make Up Tub	2.23
11	Drill Wellbore Job	766.19
12	Surface	140.01
13	Drill Surface	94.49
14	Drill Rotary	84.78
15	Circulate	2.35
16	Short Trip	1.93
17	Circulate	2.35
18	Pull Out Of Hole	1.01
19	Pull Out And Lay	2.05
20	Wiper Trip	8.48
21	Safety Meeting	0.32
22	Pick Up And Make	1.91
23	Run In Hole	0.92
24	Circulate	2.36
25	Pull Out Of Hole	0.92
26	Pull Out And Lay	2.05
27	Run Surface	10.35
28	Clear Rig Floor	0.41
29	Assemble Equipm	0.41
30	Safety Meeting	0.32

Monte Carlo Summary Grid

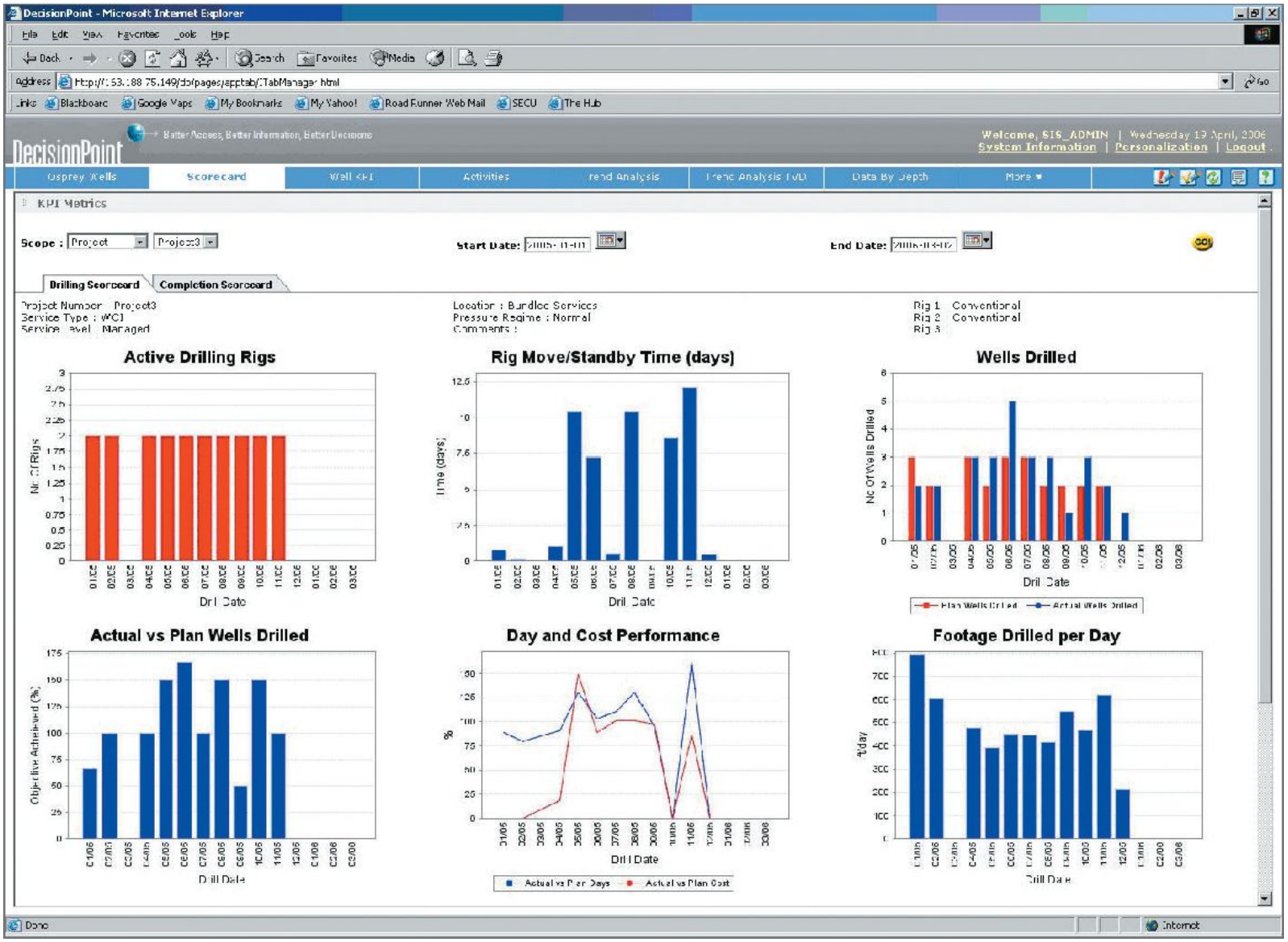
	Task Name	Low P% Time	Mid P% Time	High P% Time	Low P% Cost	Mid P% Cost	High P% Cost
		day	day	day	K$	K$	K$
1	Total	38.78	54.69	78.67	11,076	13,253	16,483
2	Mobilize Rig Job	1.68	2.39	3.51	151	215	316
3	Drill Wellbore Job	34.33	48.34	69.36	10,506	12,508	15,466
4	Well Completion Job	0.55	0.79	1.16	219	244	283
5	Demobilize Rig Job	2.22	3.17	4.64	199	285	418



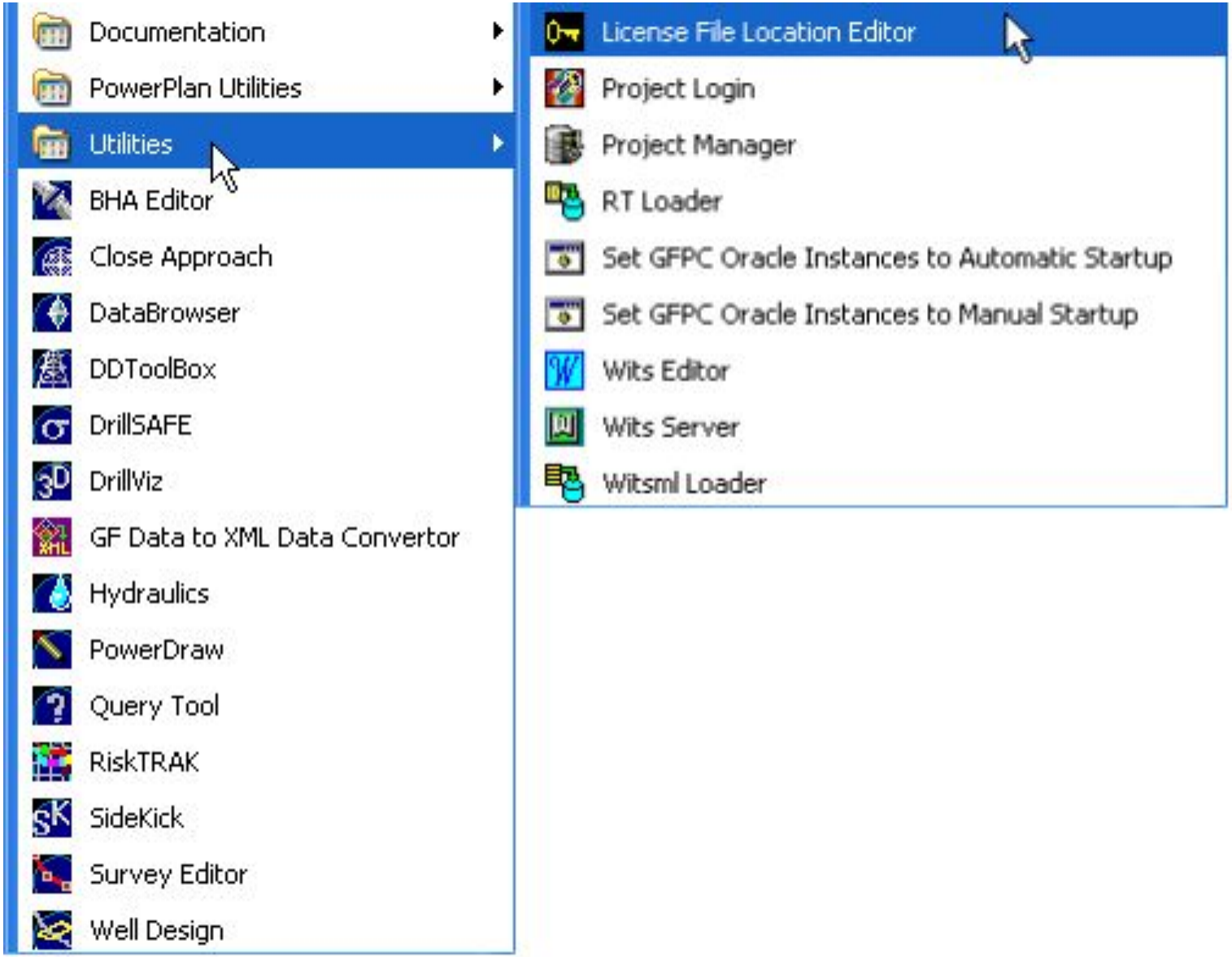
ДИНАМИЧЕСКОЕ УПРАВЛЕНИЕ БУРЕНИЕМ СКВАЖИНЫ НА БАЗЕ OSPREY OPERATIONS MANAGER



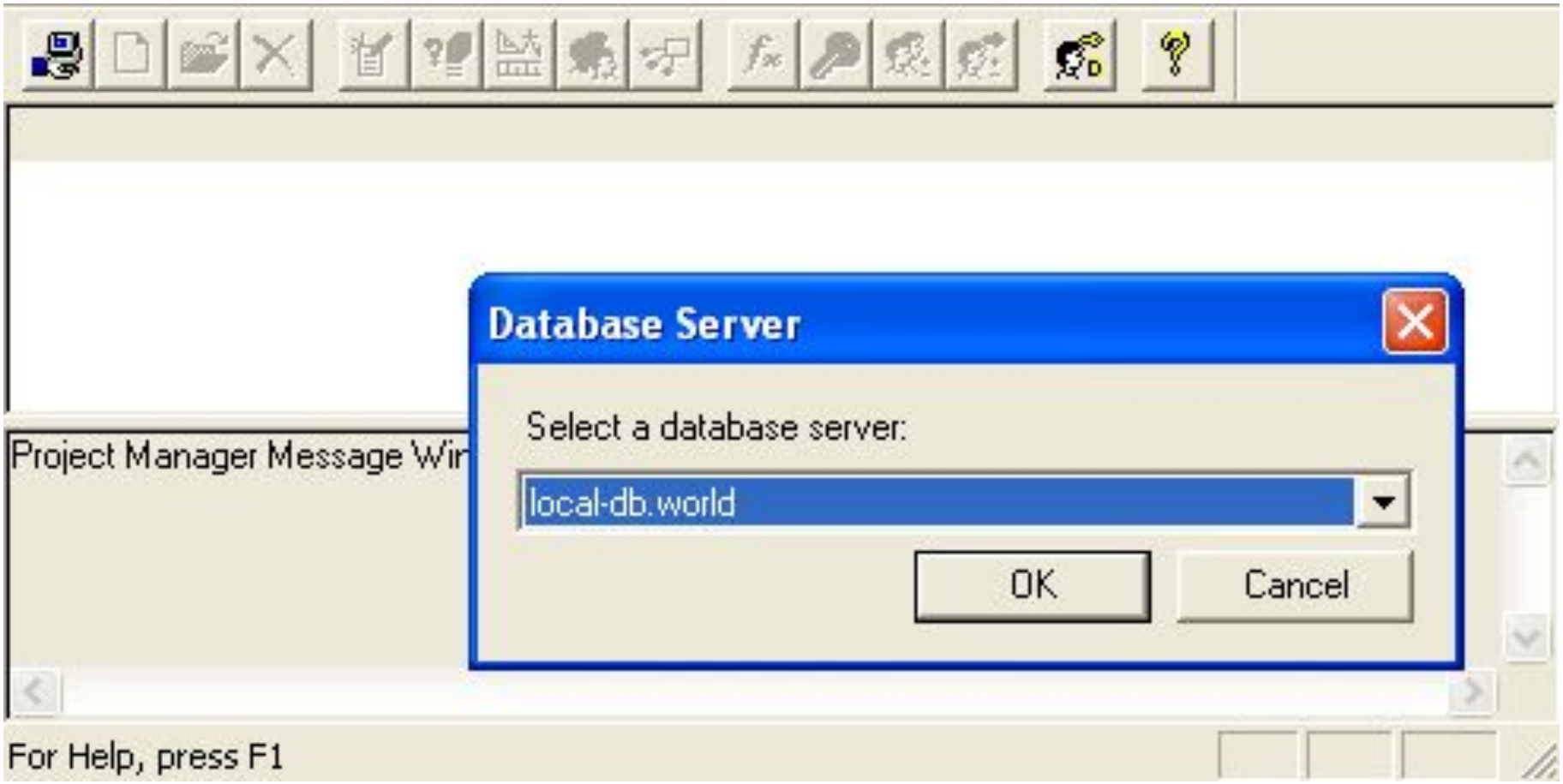
ДАННЫЕ, ОТСЛЕЖИВАЕМЫЕ OSPRAY OPERATIONS MANAGER



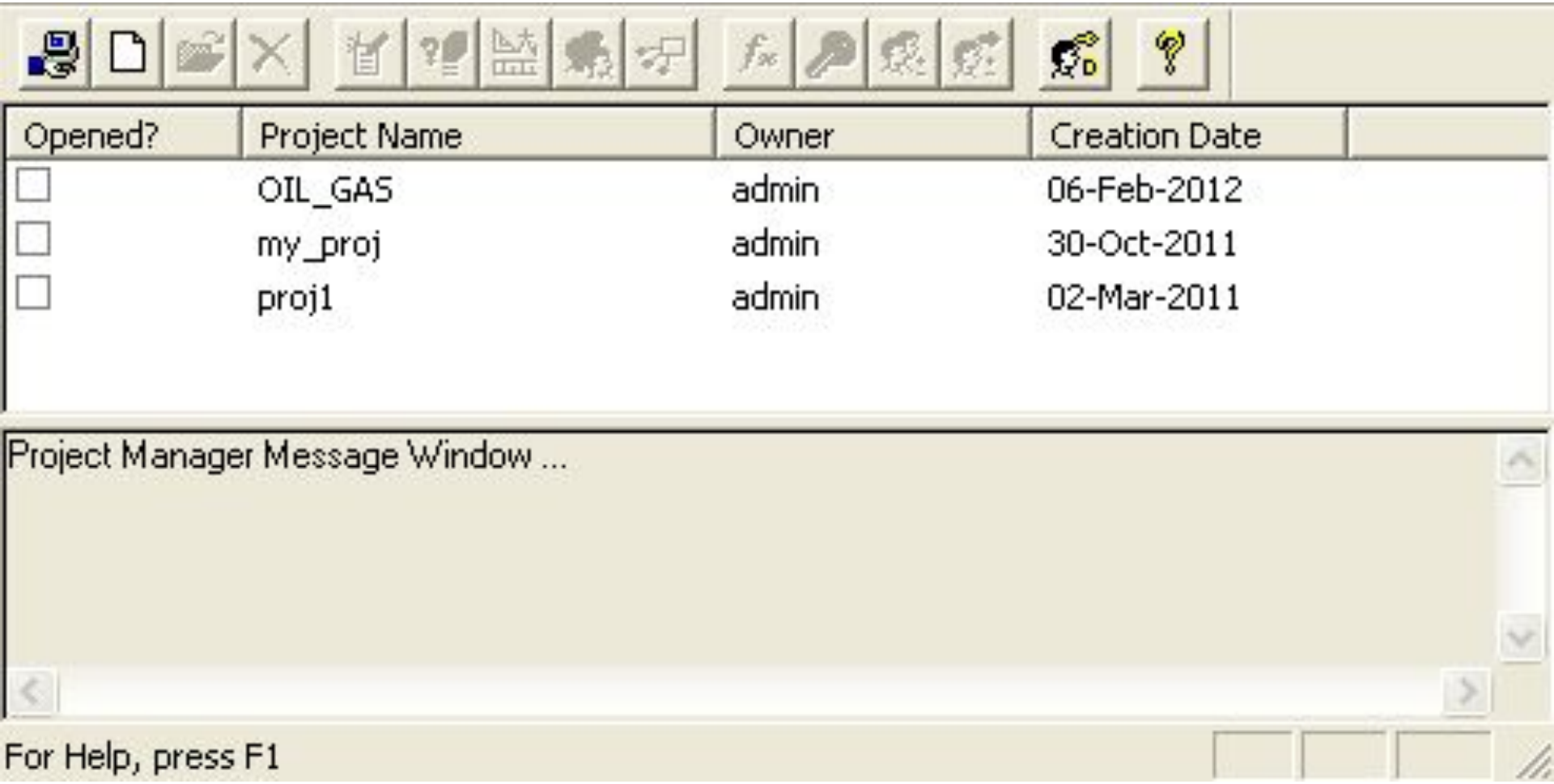
СТРУКТУРА ИНЖЕНЕРНОГО ПАКЕТА DRILLING OFFICE



PROJECT MANAGER – ВЫБОР СЕРВЕРА БАЗЫ ДАННЫХ



PROJECT MANAGER – ВЫБОР СУЩЕСТВУЮЩЕГО ПРОЕКТА



PROJECT MANAGER – СОЗДАНИЕ НОВОГО ПРОЕКТА

New Project Name: gb_10_1

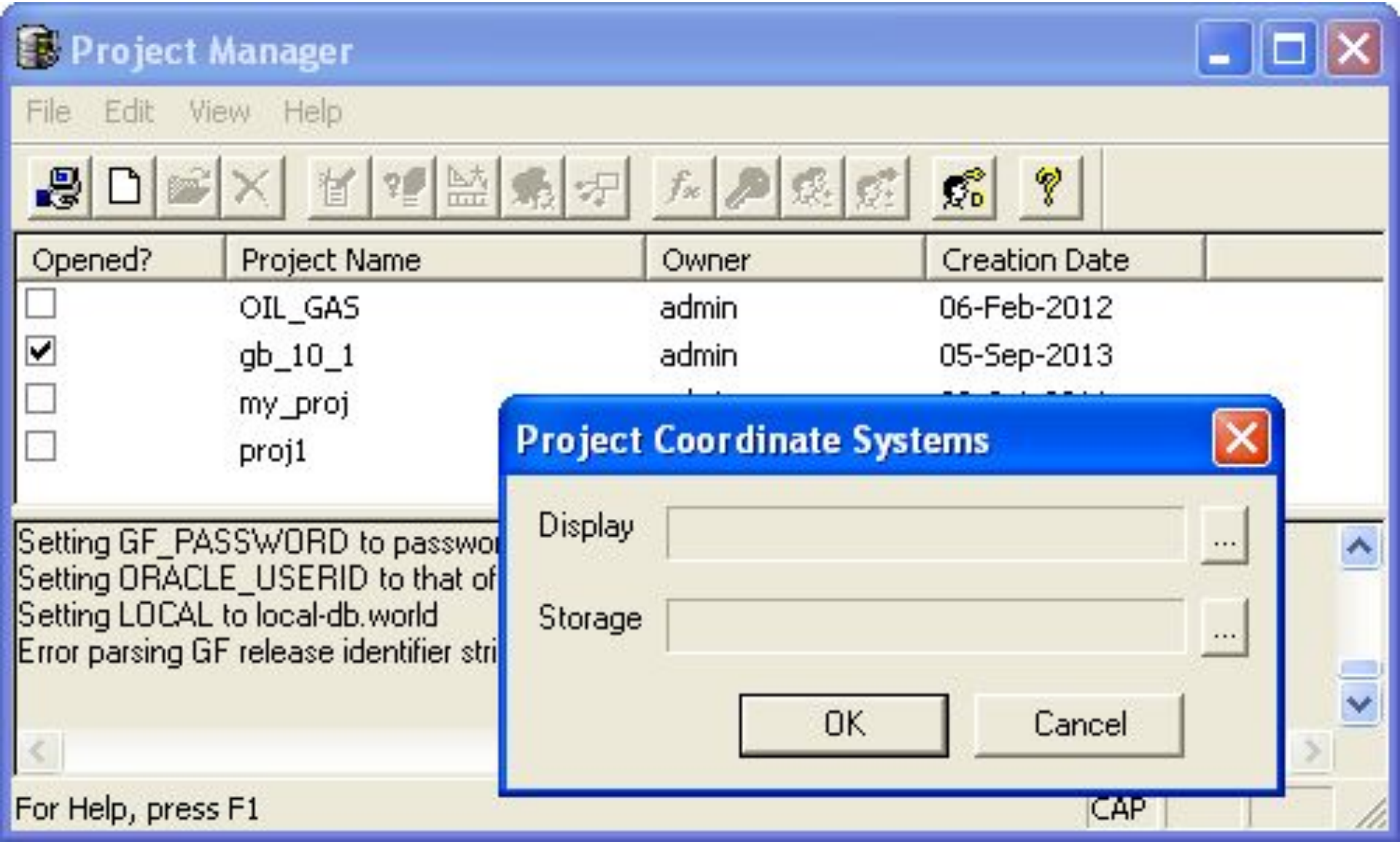
Catalog: DOC40X_100

Password: ******

Password Verification: ******

OK Cancel

PROJECT MANAGER – ЗАДАНИЕ СИСТЕМЫ КООРДИНАТ ДЛЯ НОВОГО ПРОЕКТА



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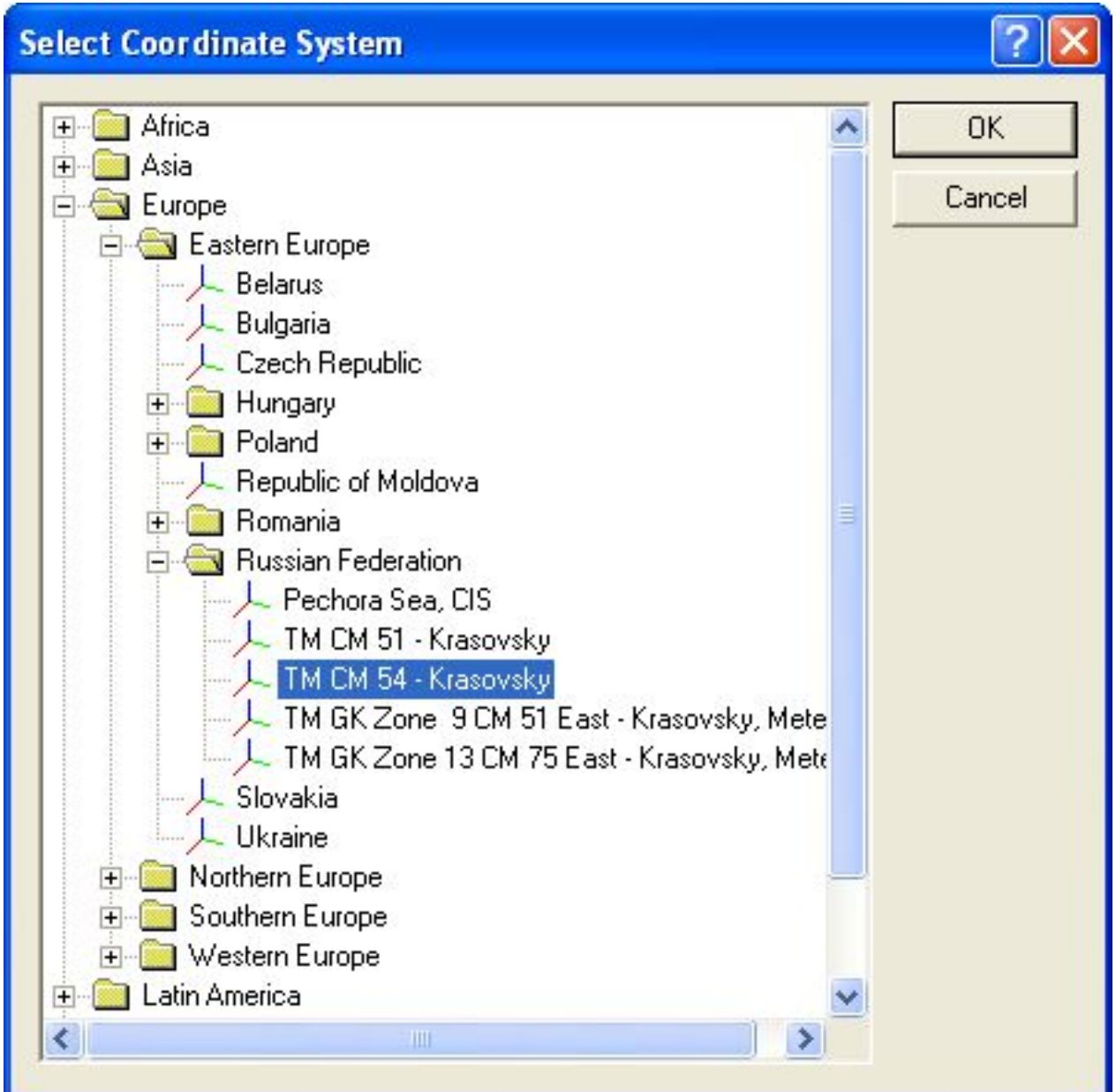

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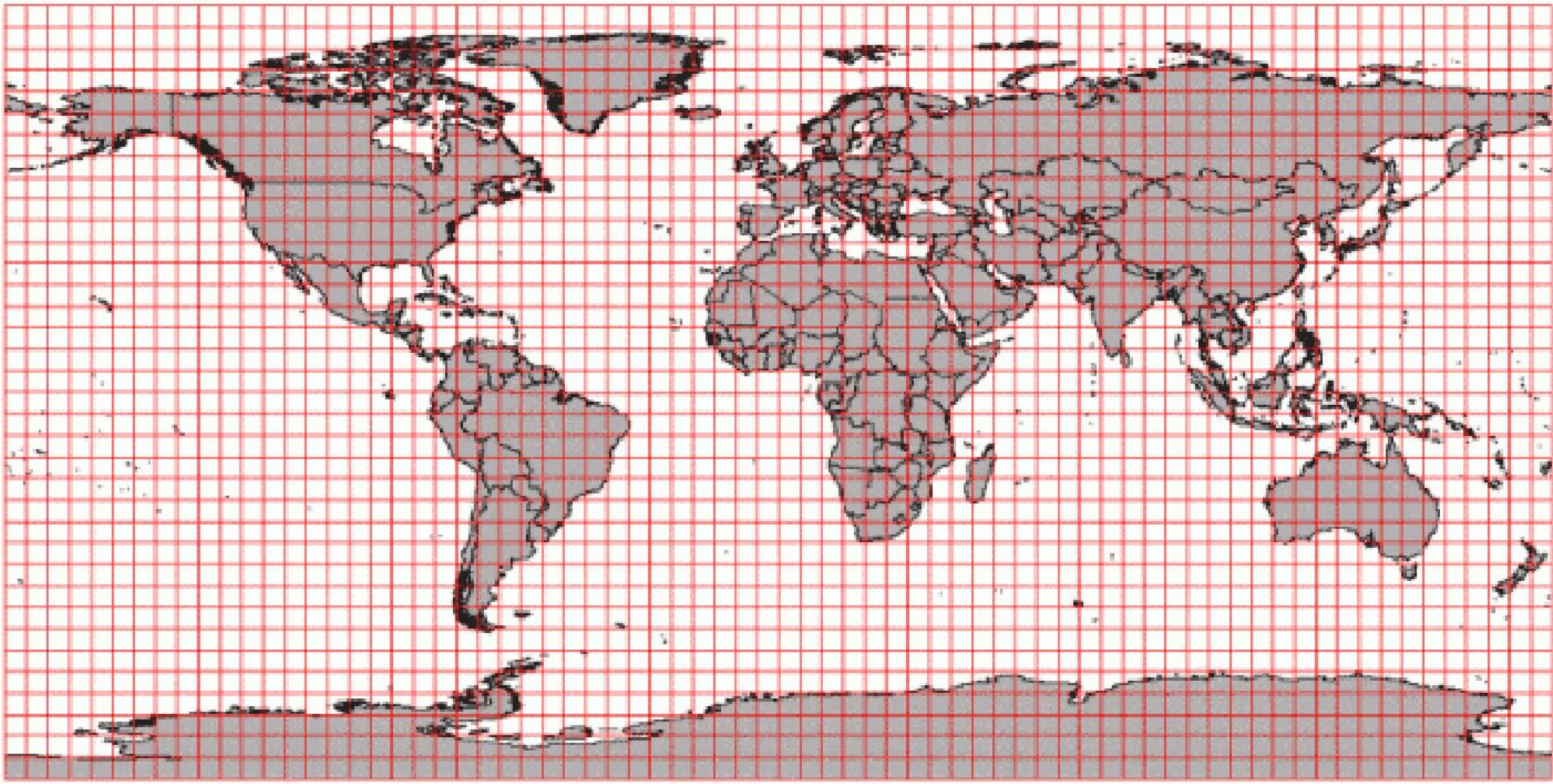
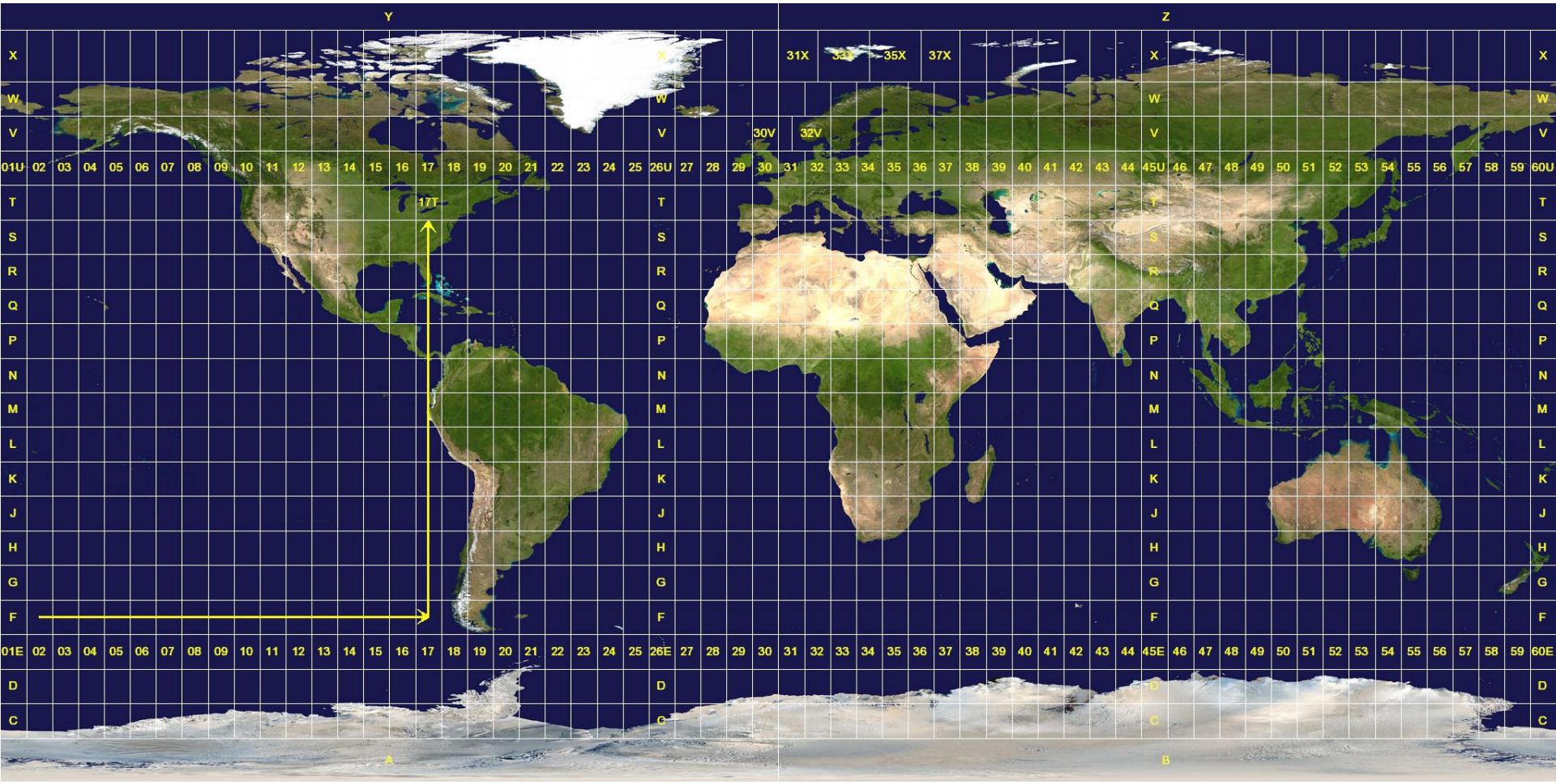
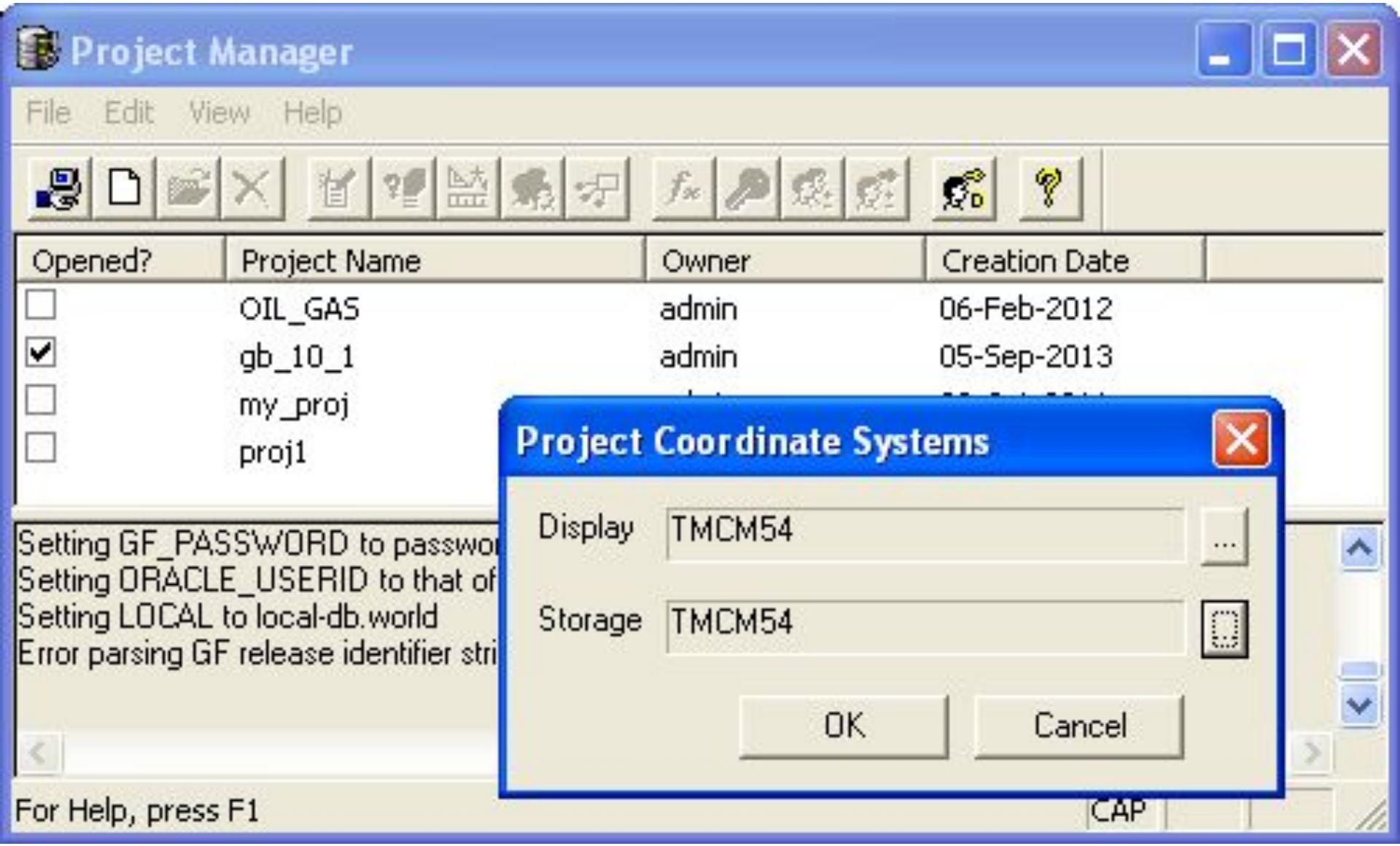


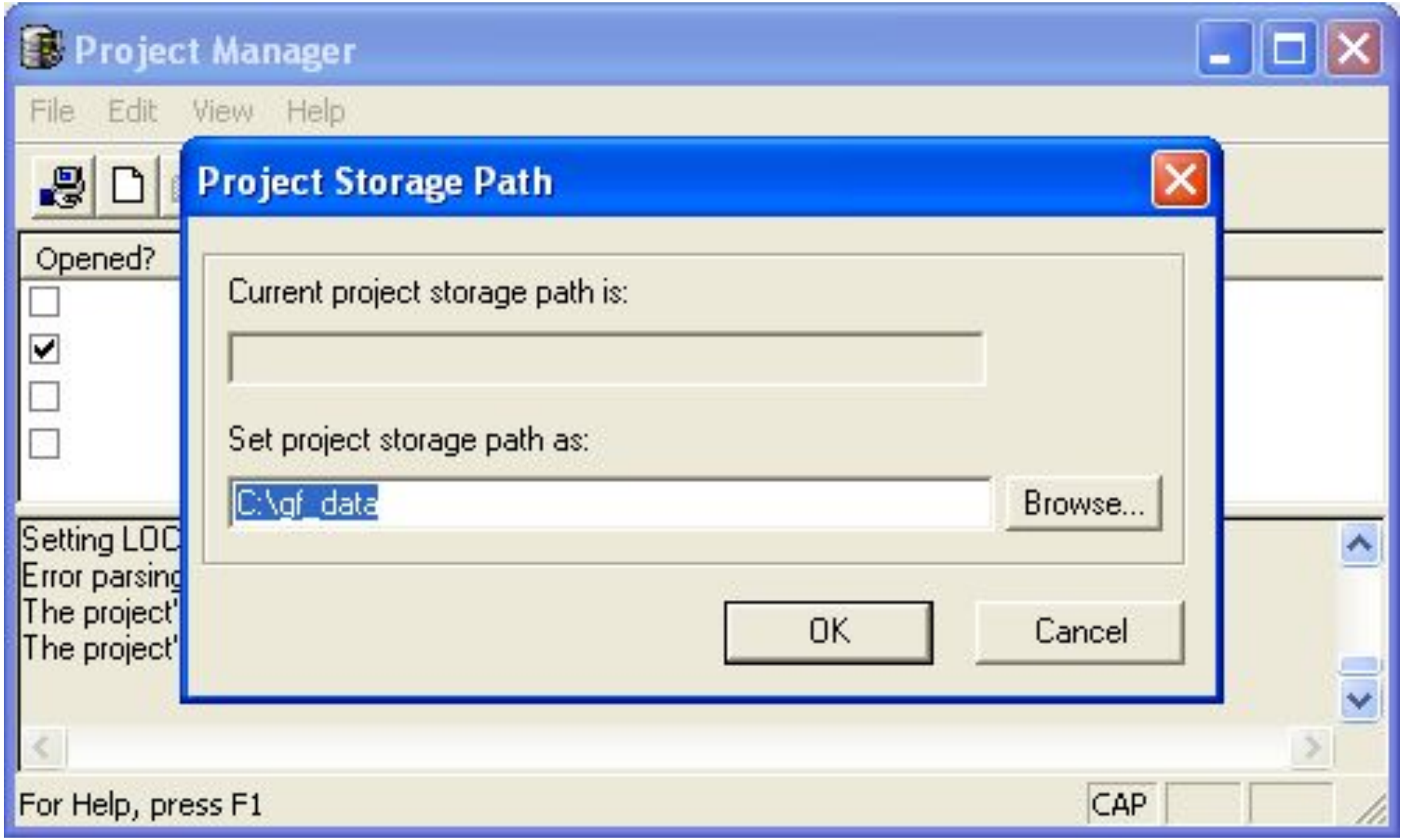
PROJECT MANAGER – СИСТЕМА КООРДИНАТ UTM



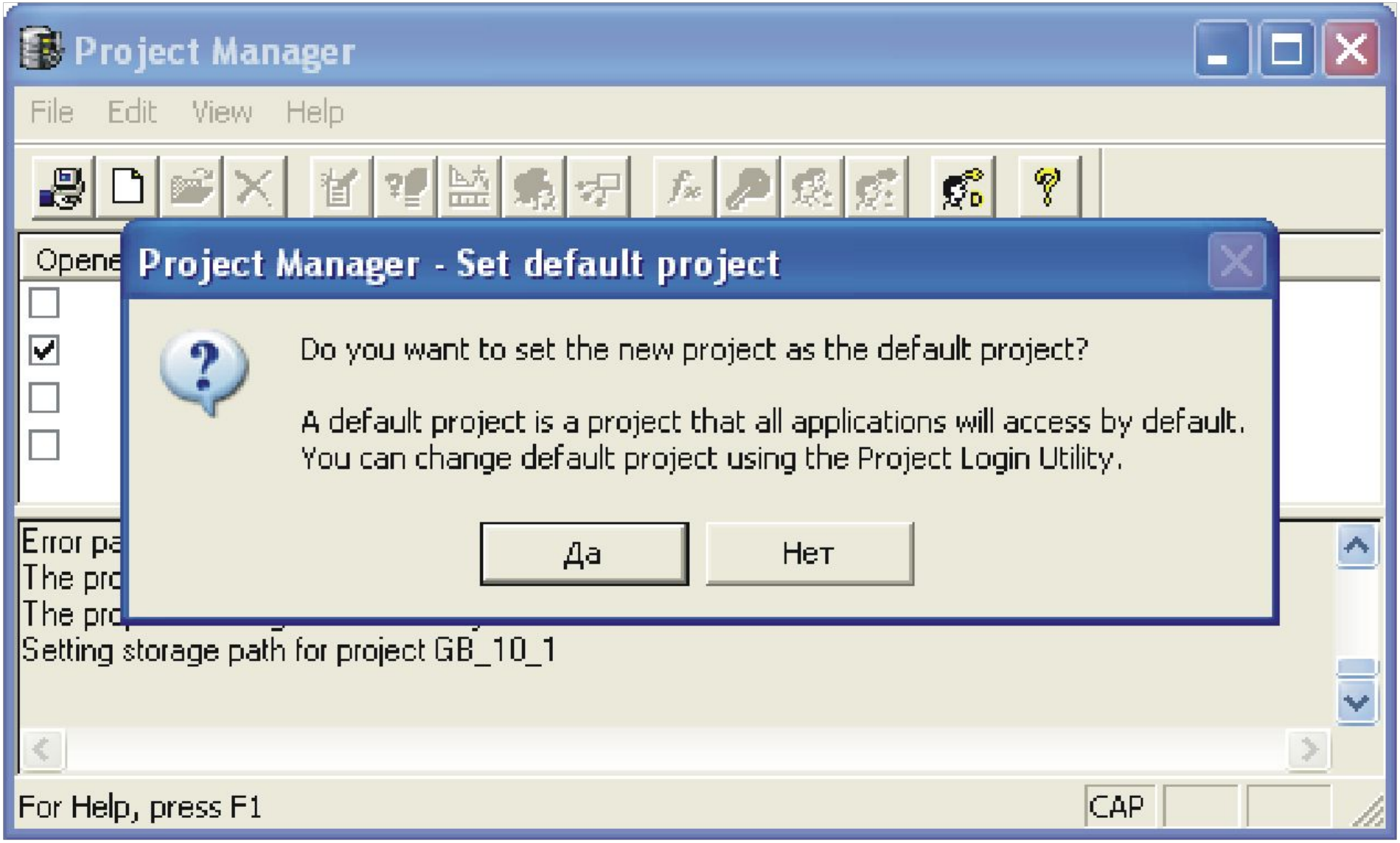
PROJECT MANAGER – ЗАДАНИЕ СИСТЕМЫ КООРДИНАТ ДЛЯ НОВОГО ПРОЕКТА



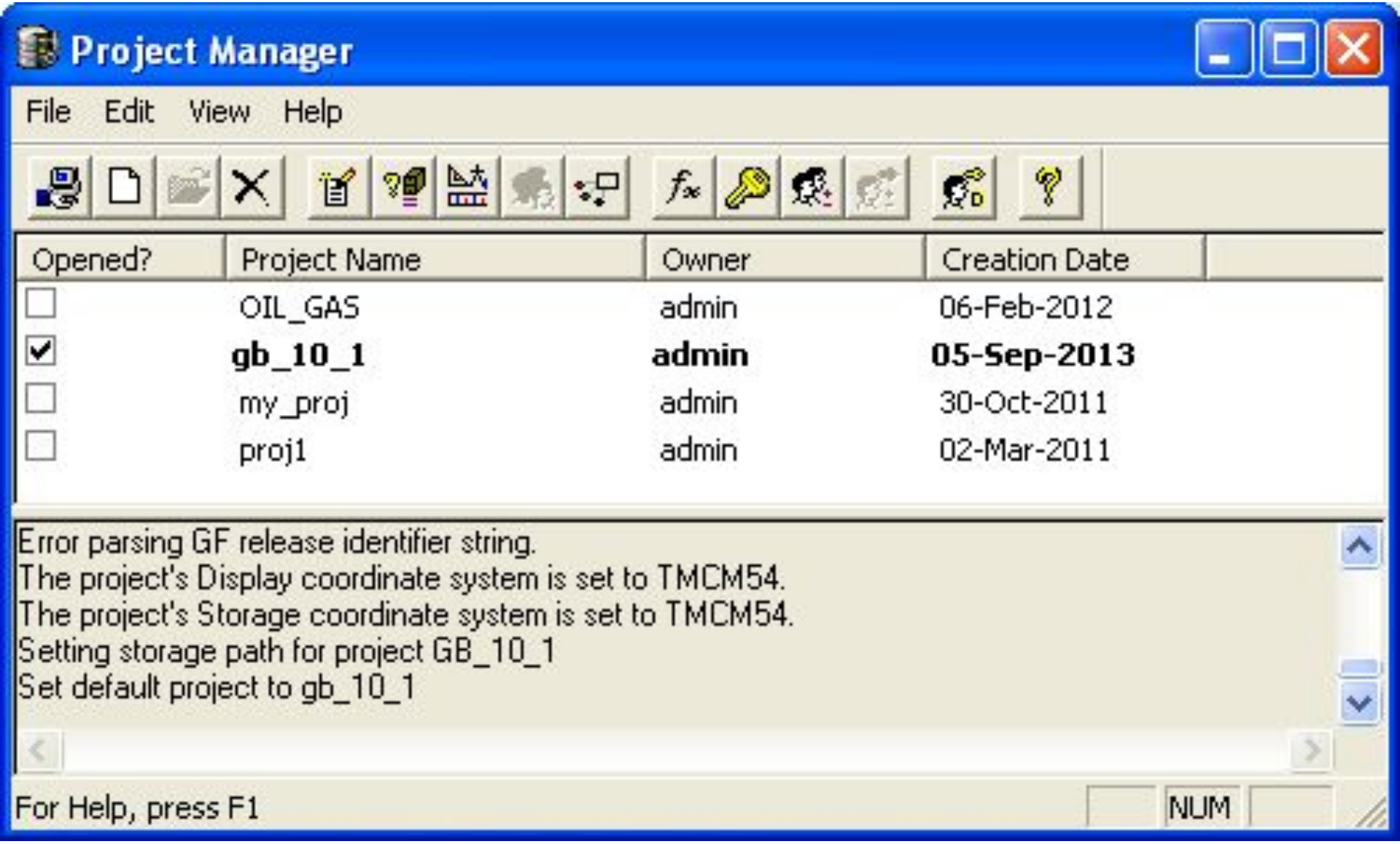
PROJECT MANAGER – ЗАДАНИЕ КАТАЛОГА ХРАНЕНИЯ ДАННЫХ ДЛЯ НОВОГО ПРОЕКТА



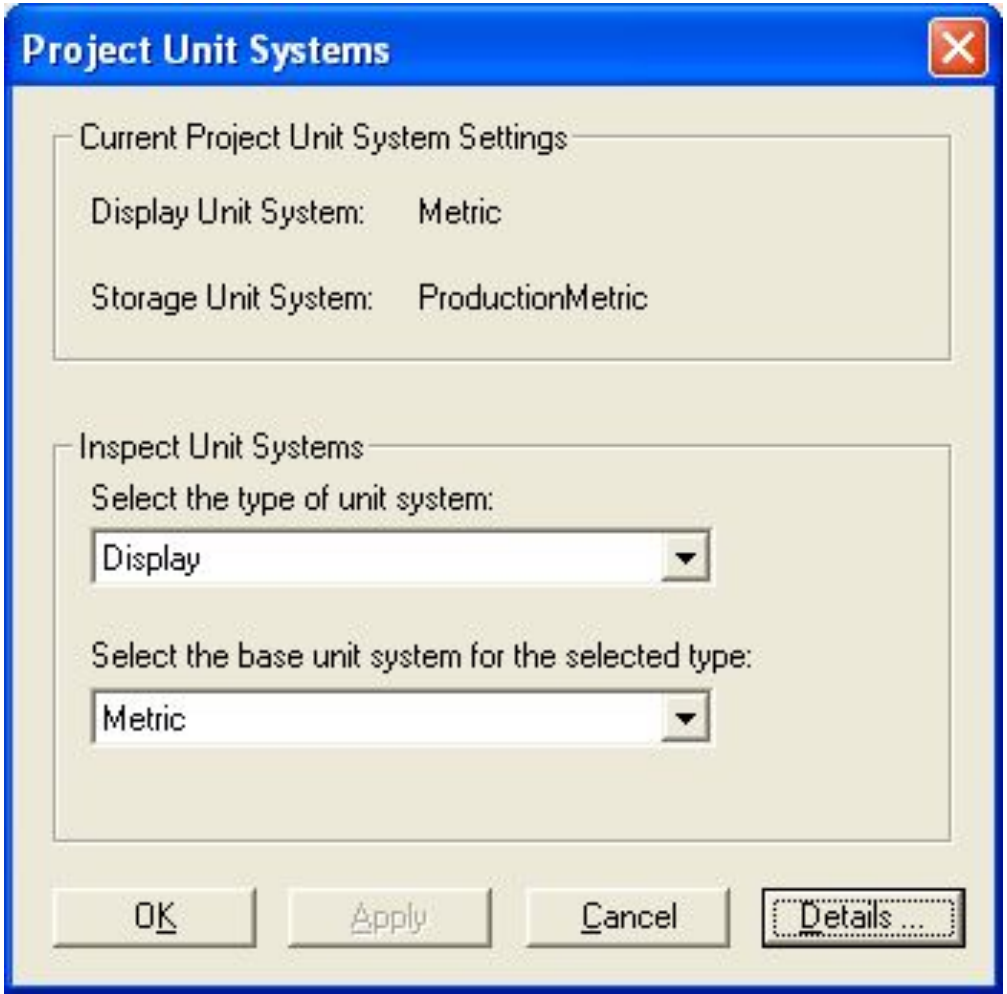
PROJECT MANAGER – ЗАДАНИЕ УМОЛЧАНИЙ ДЛЯ НОВОГО ПРОЕКТА



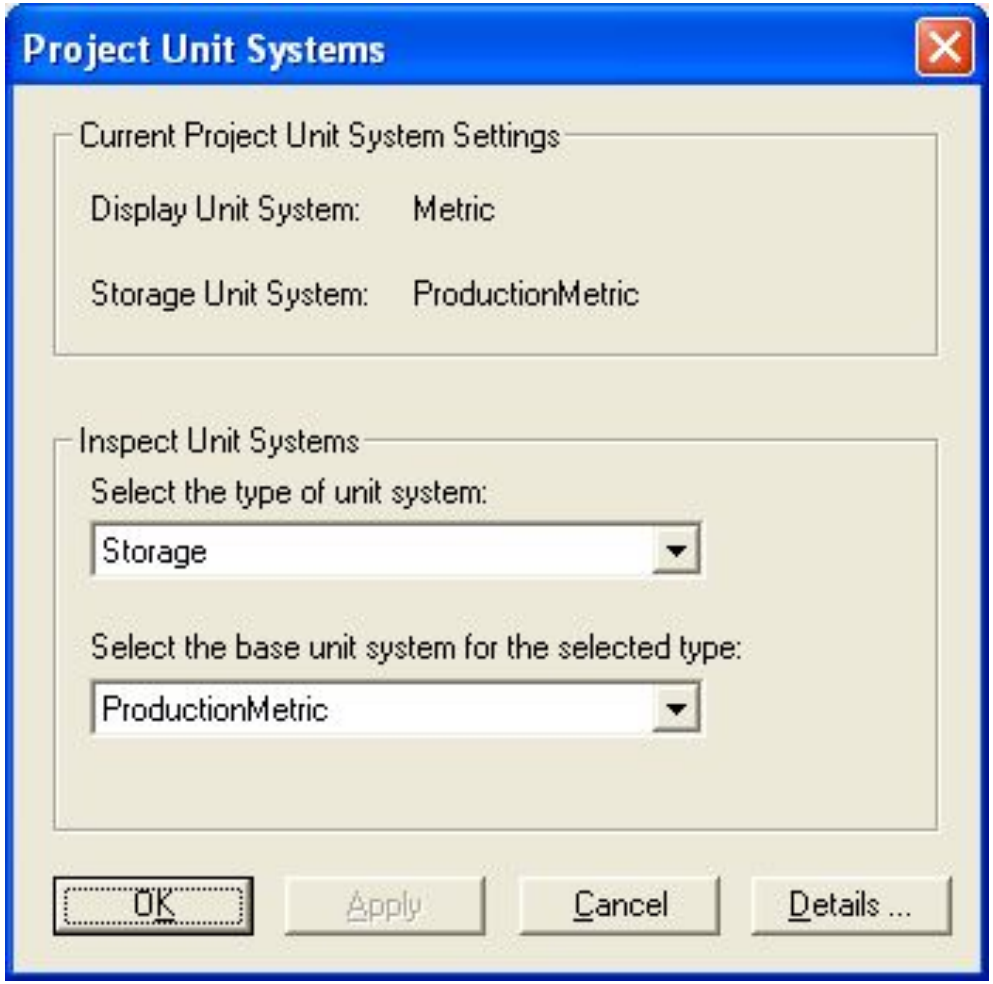
PROJECT MANAGER – РЕЗУЛЬТАТ ОТКРЫТИЯ НОВОГО ПРОЕКТА



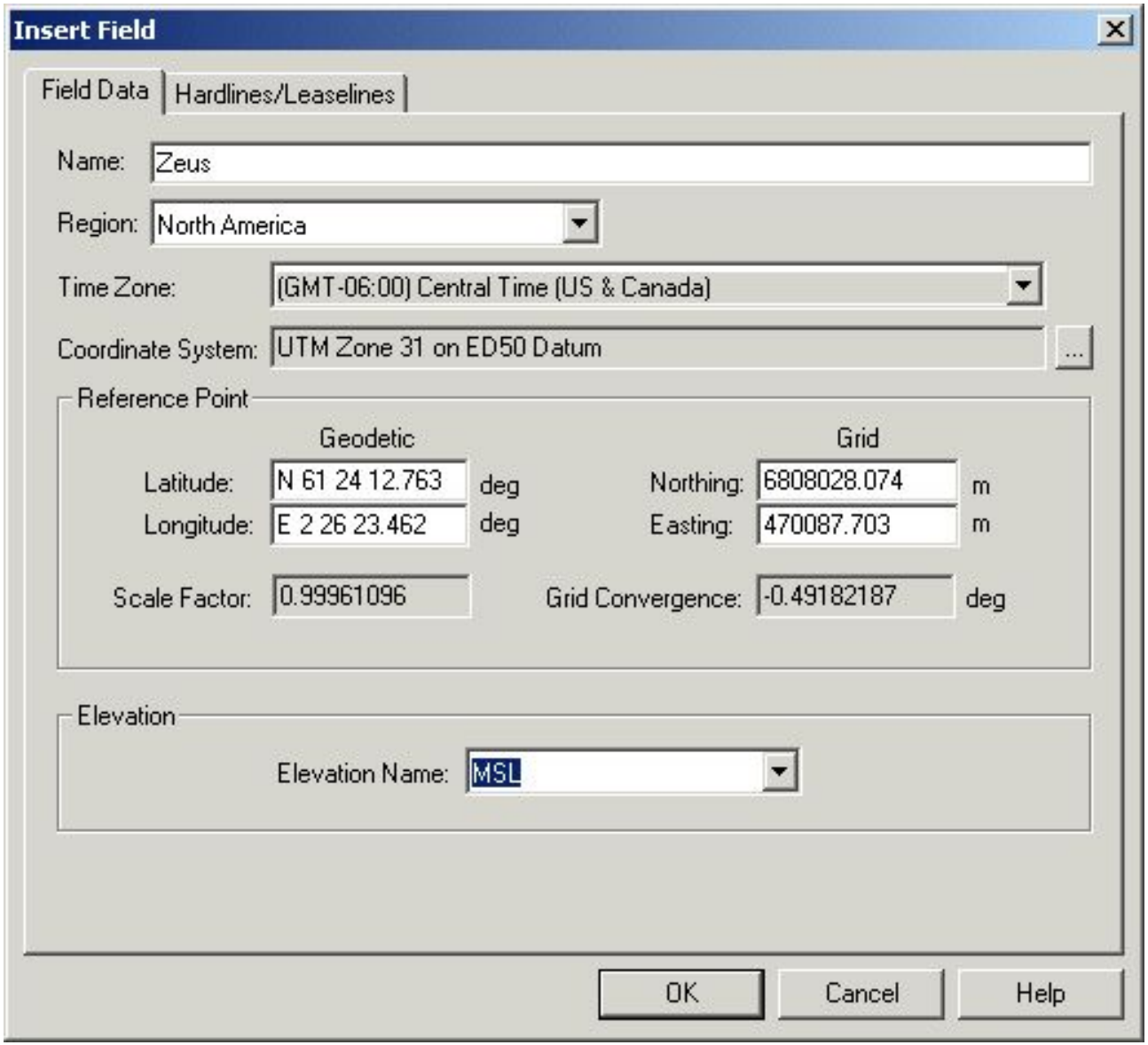
PROJECT MANAGER – НАСТРОЙКА СИСТЕМЫ ЕДИНИЦ ИЗМЕРЕНИЯ ПРОЕКТА



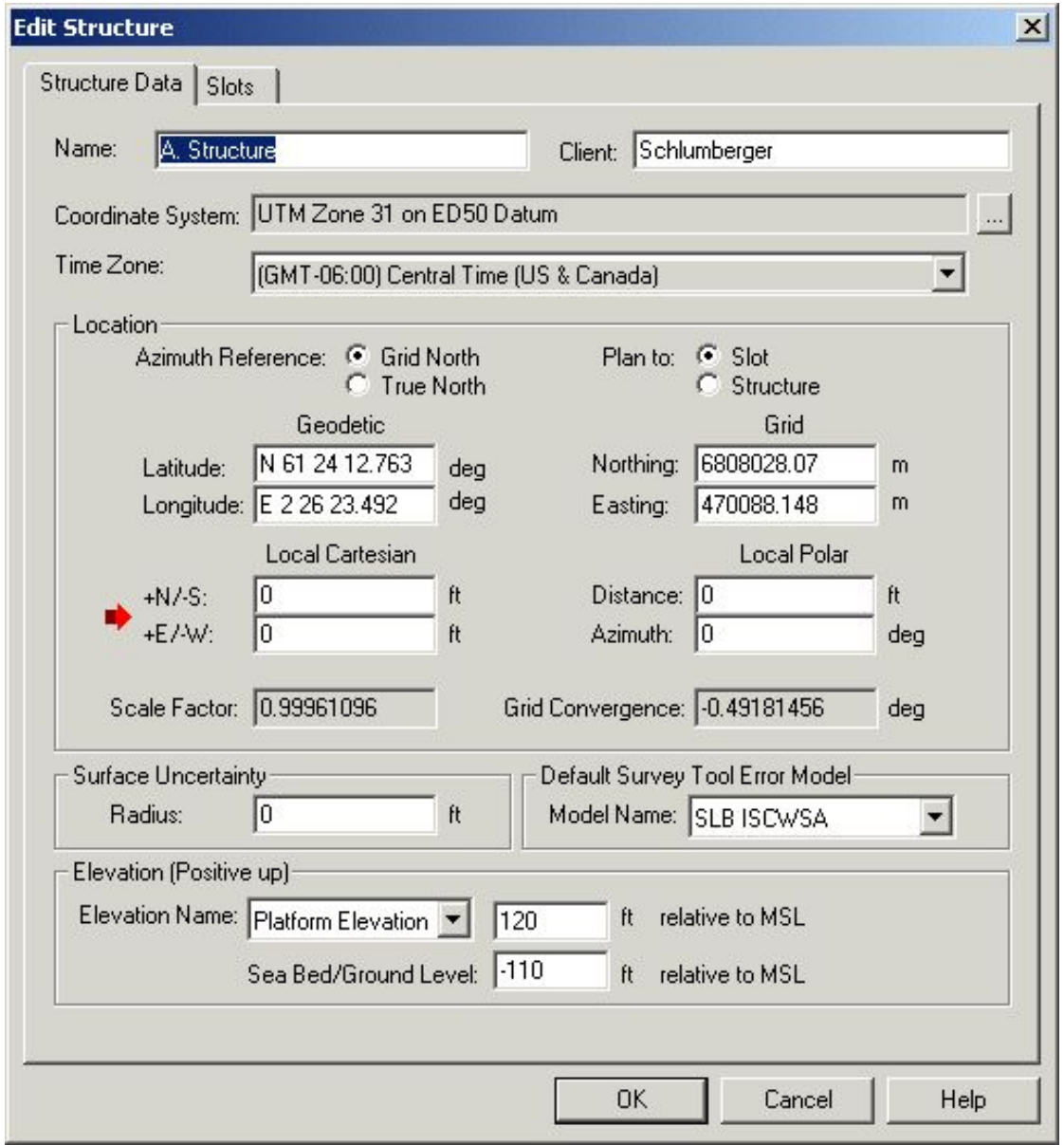
PROJECT MANAGER – НАСТРОЙКА СИСТЕМЫ ЕДИНИЦ ИЗМЕРЕНИЯ ПРОЕКТА



ЗАДАНИЕ МЕСТОРОЖДЕНИЯ В МОДУЛЕ DATA BROWSER



ЗАДАНИЕ ПЛОЩАДИ В МОДУЛЕ DATA BROWSER



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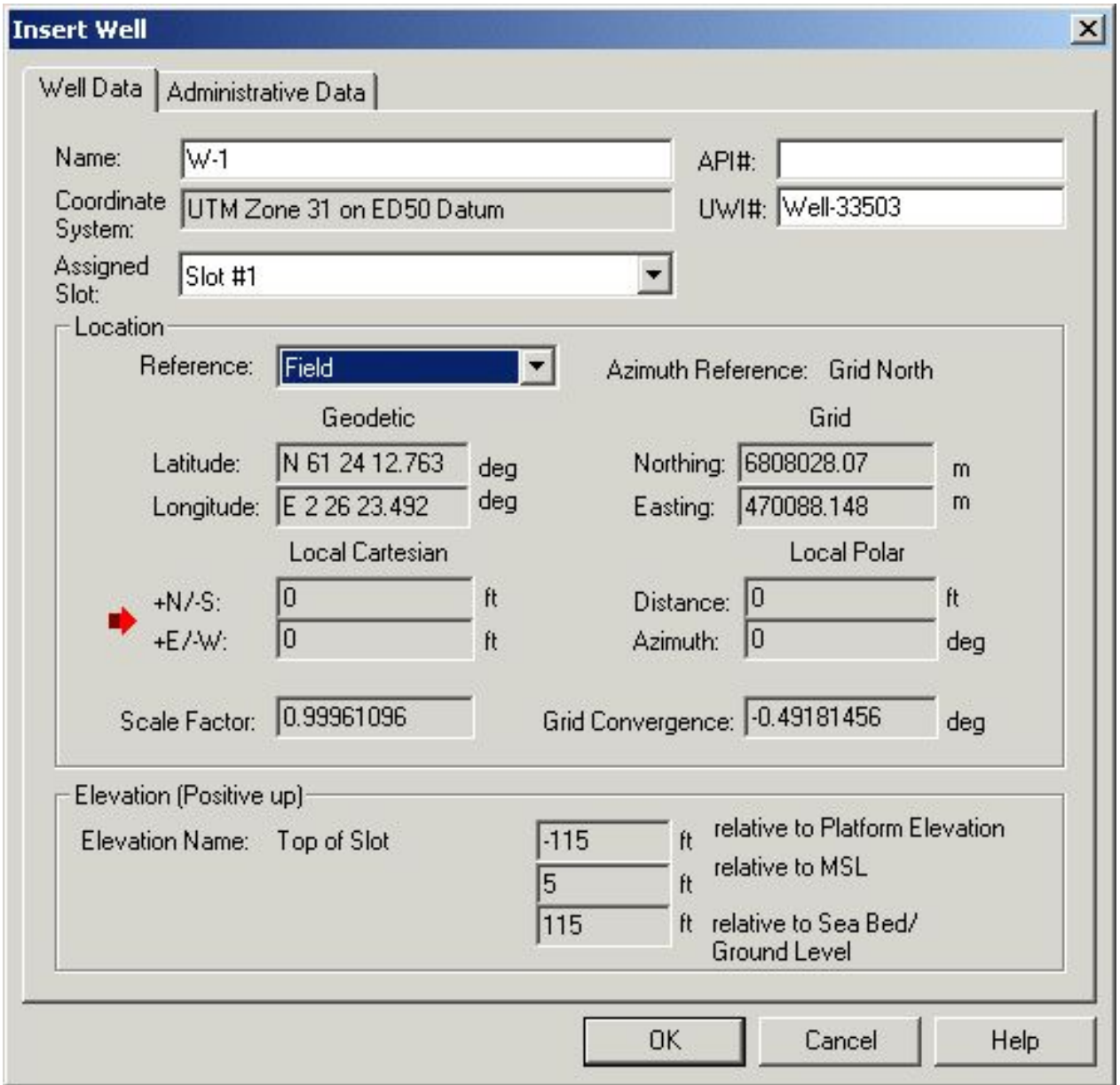
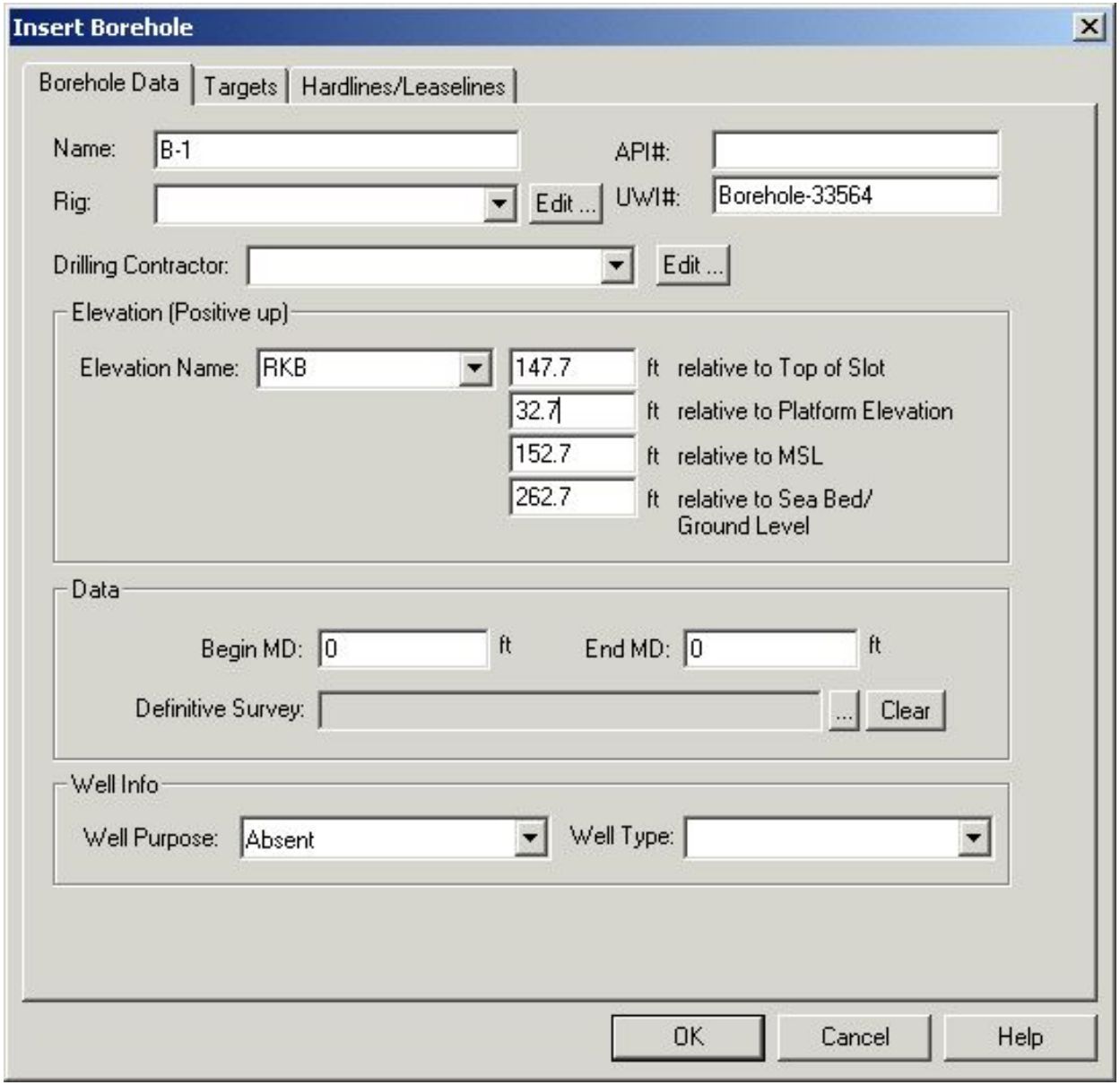


ЗАДАНИЕ СТВОЛА В МОДУЛЕ DATA BROWSER



ЗАДАНИЕ ЦЕЛИ БУРЕНИЯ В МОДУЛЕ DATA BROWSER

Create Target

Name: Target #1

Remark:

Location

Azimuth Reference: (•) Grid North ( ) True North

Geodetic			Grid		
Latitude:	N 61 24 32.281	deg	Northing:	6808622.507	m
Longitude:	E 2 27 39.437	deg	Easting:	471219.655	m

Local Cartesian			Local Polar		
+N/-S:	1951	ft	Distance:	4196.321	ft
+E/-W:	3715.2	ft	Azimuth:	62.294	deg

Scale Factor: 0.99961015 Grid Convergence: -0.47331605 deg

TVD: 10587 ft Below MSL

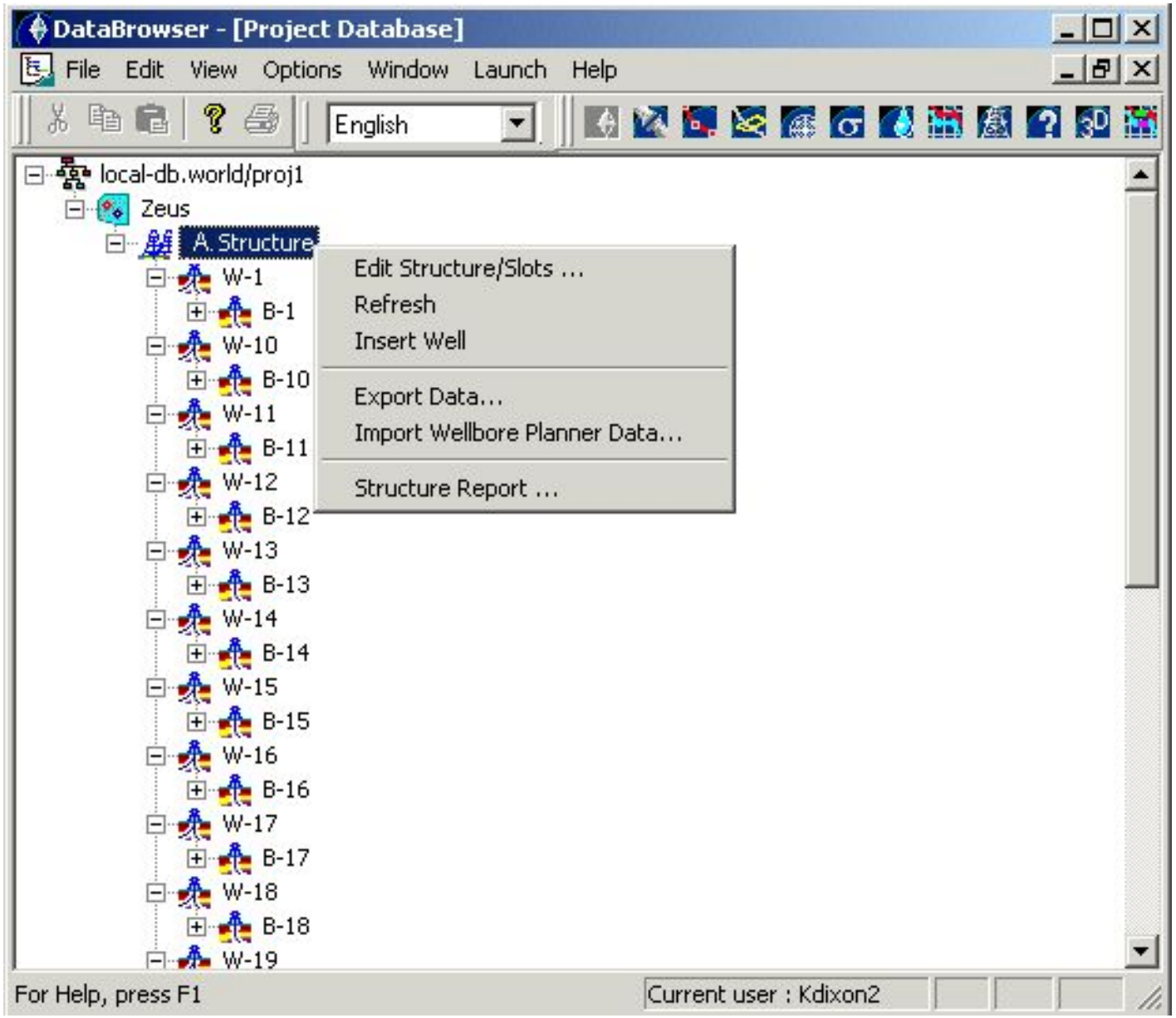
Geometry

Shape: RECTANGULAR

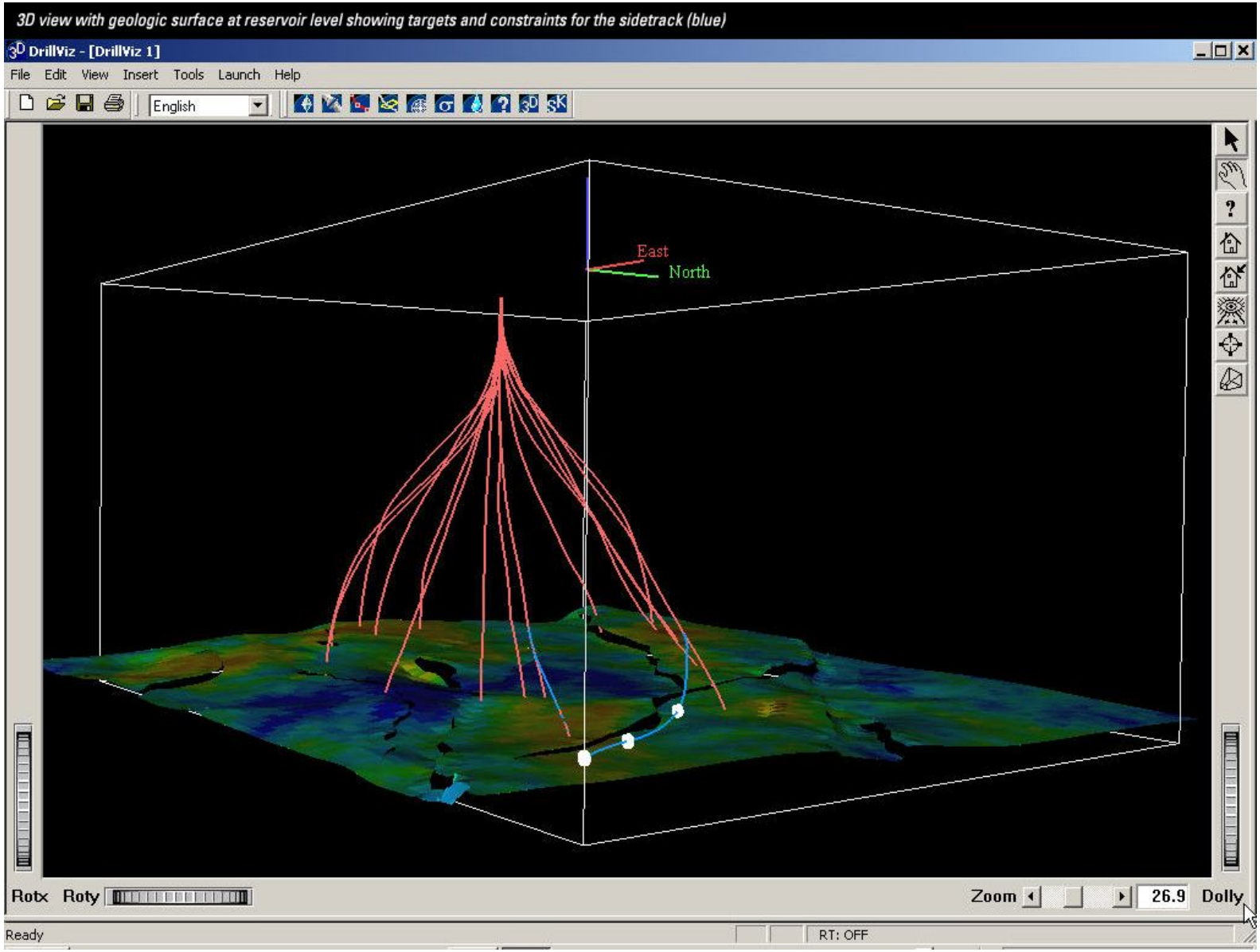
Length (NS):	50	ft	Thickness:	10	ft
Width (EW):	30	ft	Dip:	0	deg
Rotation:	0	deg	Dip Azimuth:	0	deg

OK Cancel

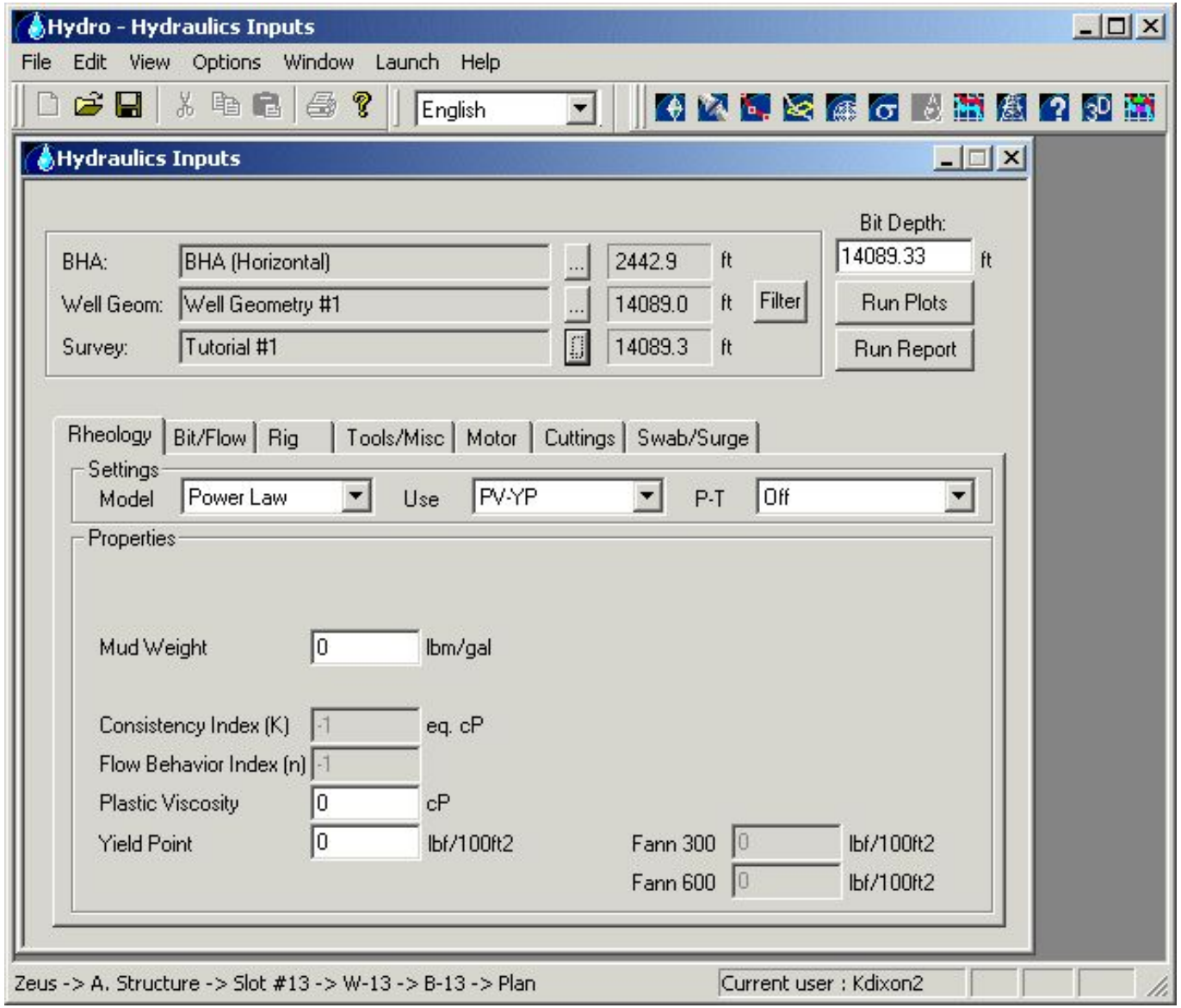
СТРУКТУРА ДАННЫХ В МОДУЛЕ DATA BROWSER



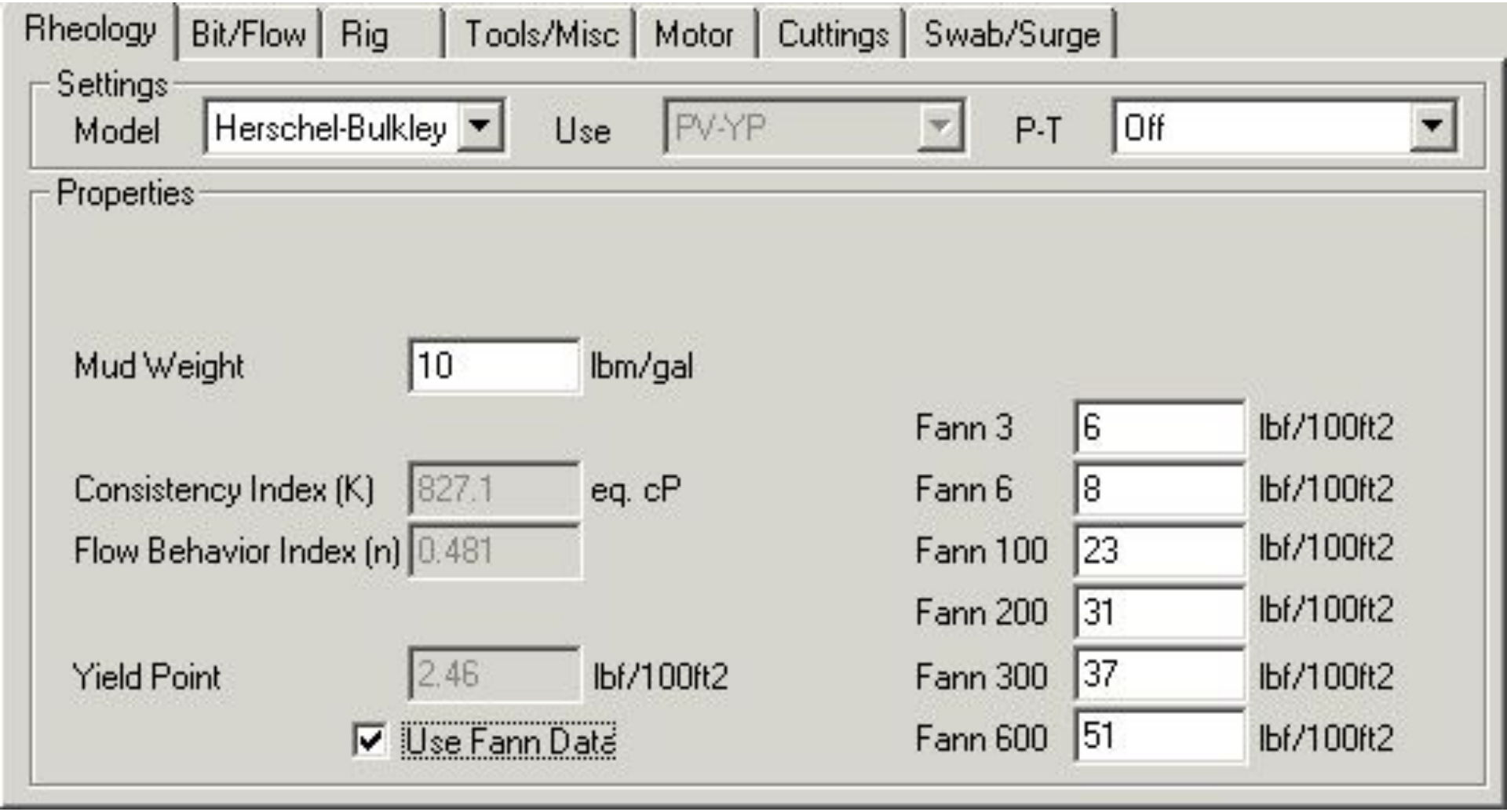
РЕЗУЛЬТАТЫ РАБОТЫ DRILLVIZ



ВВОД ДАННЫХ ПО СКВАЖИНЕ В МОДУЛЬ HYDRAULICS



ВВОД ДАННЫХ ПО РЕОЛОГИИ В МОДУЛЬ HYDRAULICS



ВВОД ДАННЫХ ПО РАСХОДАМ В МОДУЛЬ HYDRAULICS

Rheology | Bit/Flow | Rig | Tools/Misc | Motor | Cuttings | Swab/Surge

Pump / Flow

Pump Flowrate	450	gal/min
Plot: Min Flow	300	gal/min
Plot: Max Flow	800	gal/min
Pump Stroke Volume	0.123	bbl
Max Pump Pressure	4000	psi

Nozzle Optimization

Method	None	
Planned Pump Press	0	psi

Sensitivity

Min Flow	350	gal/min
Max Flow	550	gal/min

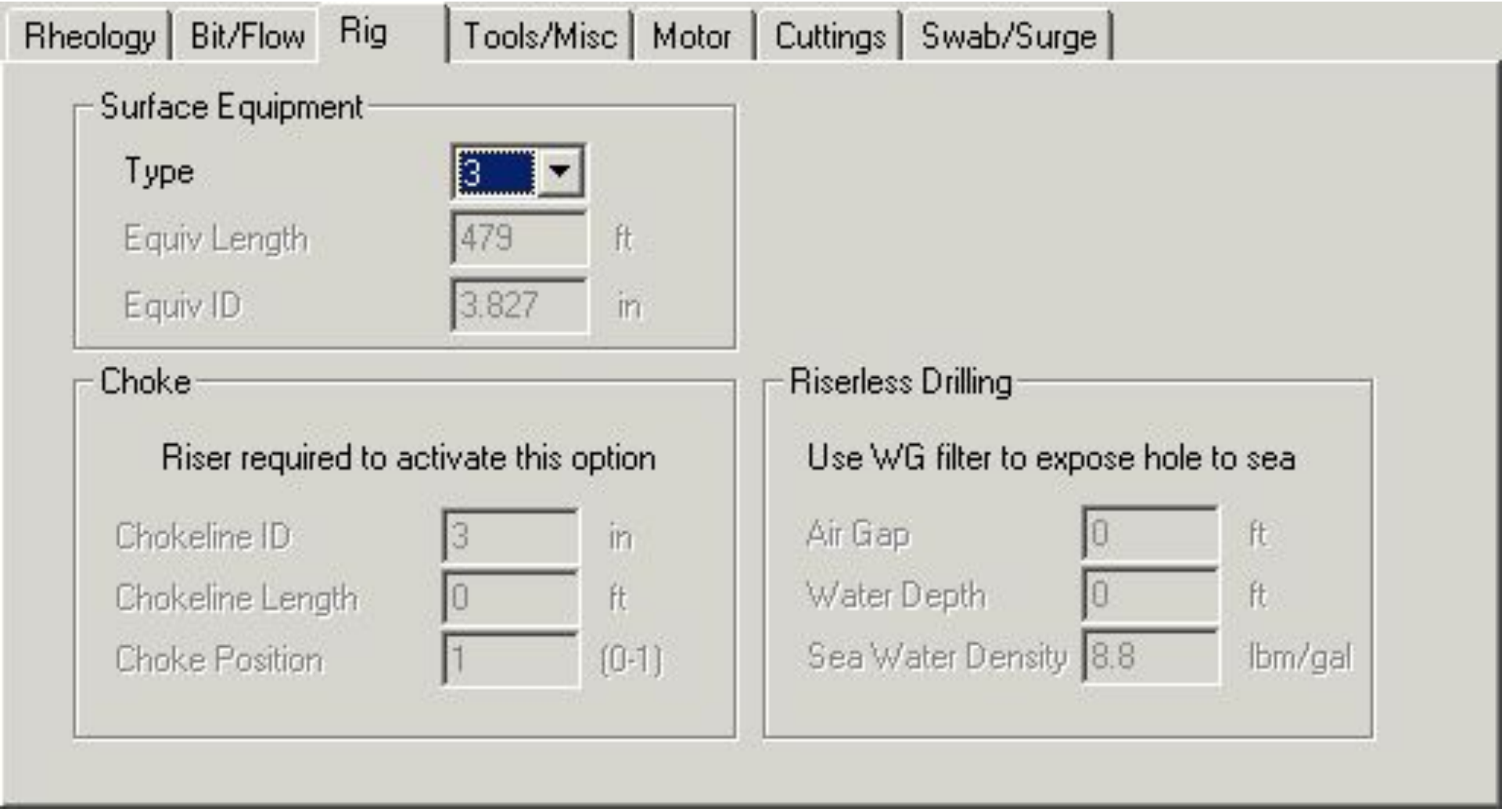
Nozzles

Save to BHA

Count	Size (1/32")
3	15

Total Flow Area	0.518	in2

ВВОД ДАННЫХ ПО ОБОРУДОВАНИЮ В МОДУЛЬ HYDRAULICS



ВВОД ДАННЫХ ПО ИНСТРУМЕНТУ В МОДУЛЬ HYDRAULICS

Rheology | Bit/Flow | Rig | Tools/Misc | Motor | Cuttings | Swab/Surge

Non-Catalog Tool Pressure Drop

	psi/gal/min
None	0
None	0
None	0
None	0
None	0

Casing Protectors

Casing Protectors ☐

Start Depth (MD)	0	ft
End Depth (MD)	0	ft
Count	0	
Length	0	ft
External Diameter	0	in

Miscellaneous

Ignore Eccentricity ☐

User ECD Depth (MD) 12207 ft

Tool Joints

Tool Joints ☑

Fractional TJ length 10 %

ВВОД ДАННЫХ ПО ДВИГАТЕЛЮ В МОДУЛЬ HYDRAULICS

Rheology | Bit/Flow | Rig | Tools/Misc | Motor | Cuttings | Swab/Surge

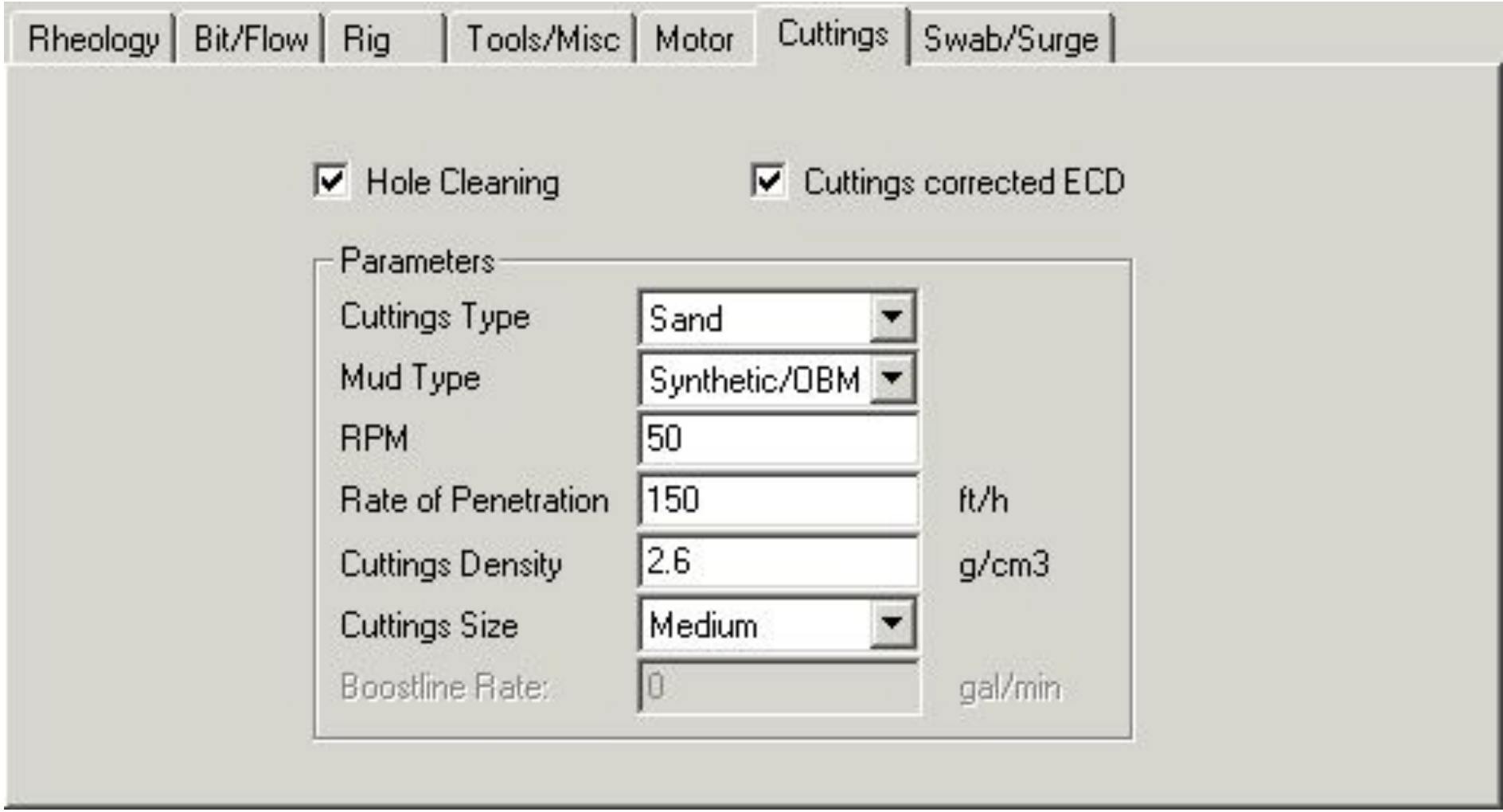
Motor Specifications

Motor Type	A675M4570XP	
Flow range	300 - 600	gal/min
%Wear	5	%
Rotor Nozzle	12	/32in
Flow : Pwr	378.0	Nozz 72.0 gal/min
Motor Bearing Flow	5	%
Bit Type	Insert	
Bearing Capacity	30	1000 lbf

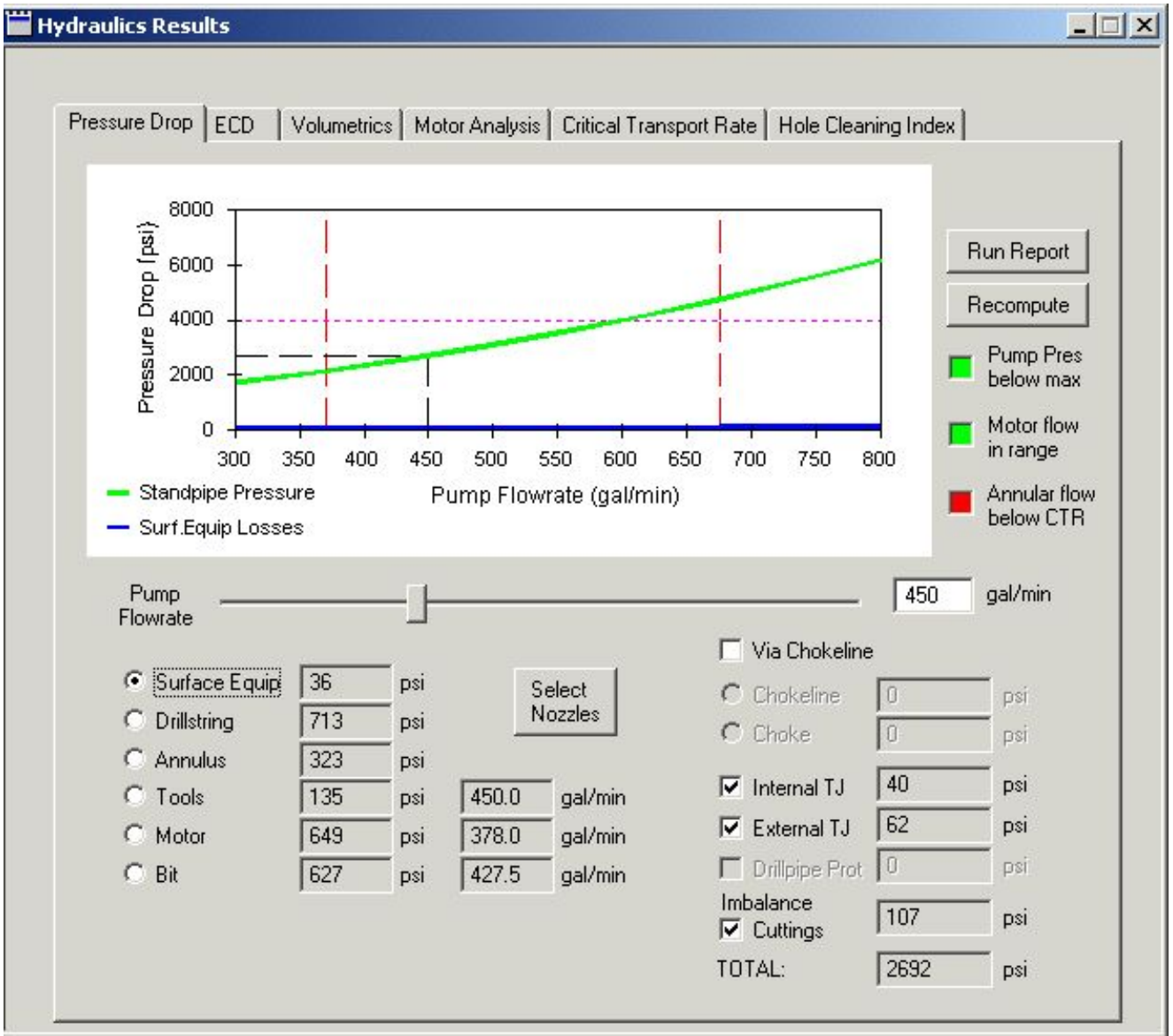
Optimization

○ Power Drilling		
○ WOB	0	1000 lbf
○ DTOR	0	ft.lbf
◉ Delta P	250	psi
On Bottom Press	0	psi

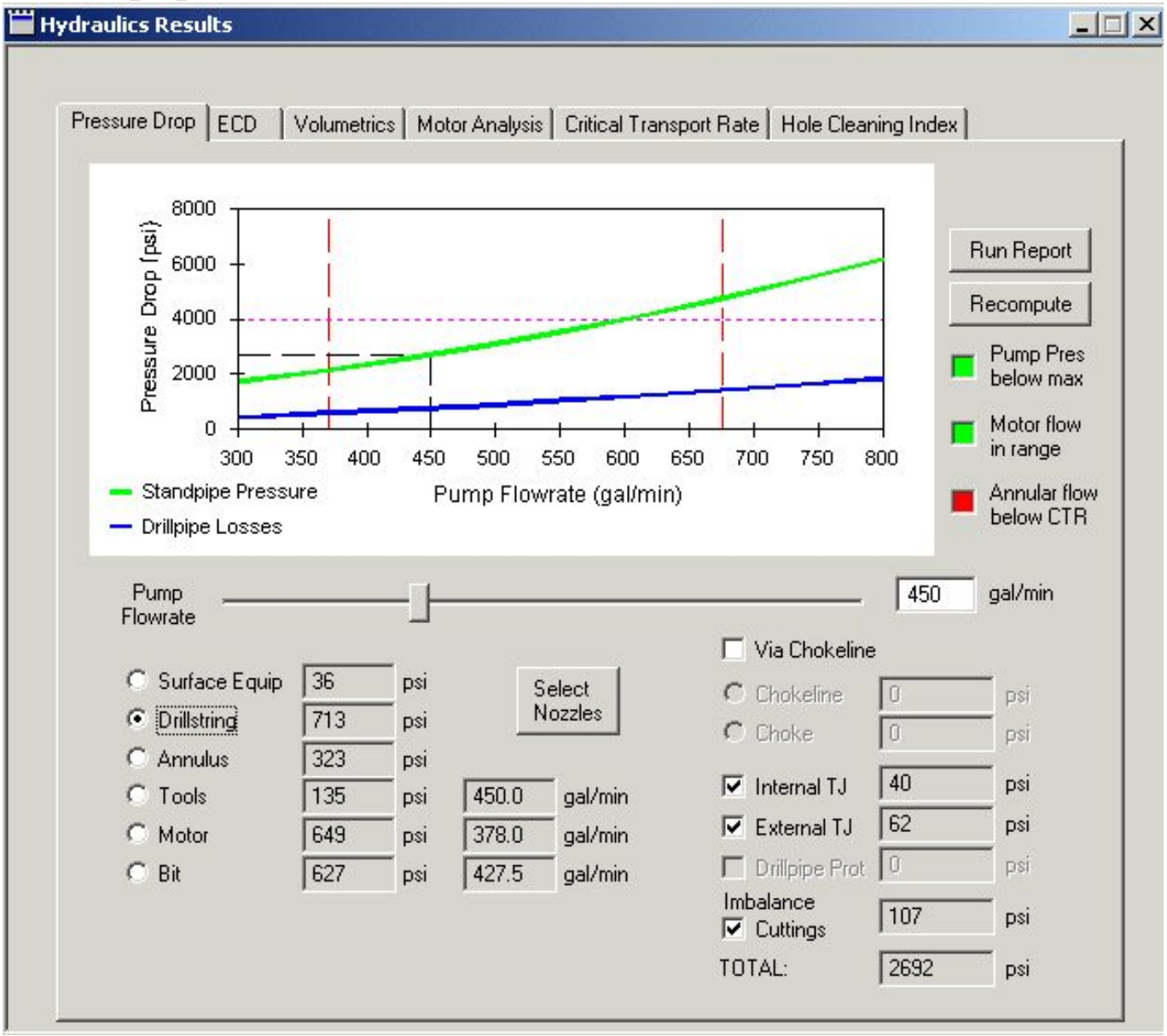
ВВОД ДАННЫХ ПО ШЛАМУ В МОДУЛЬ HYDRAULICS



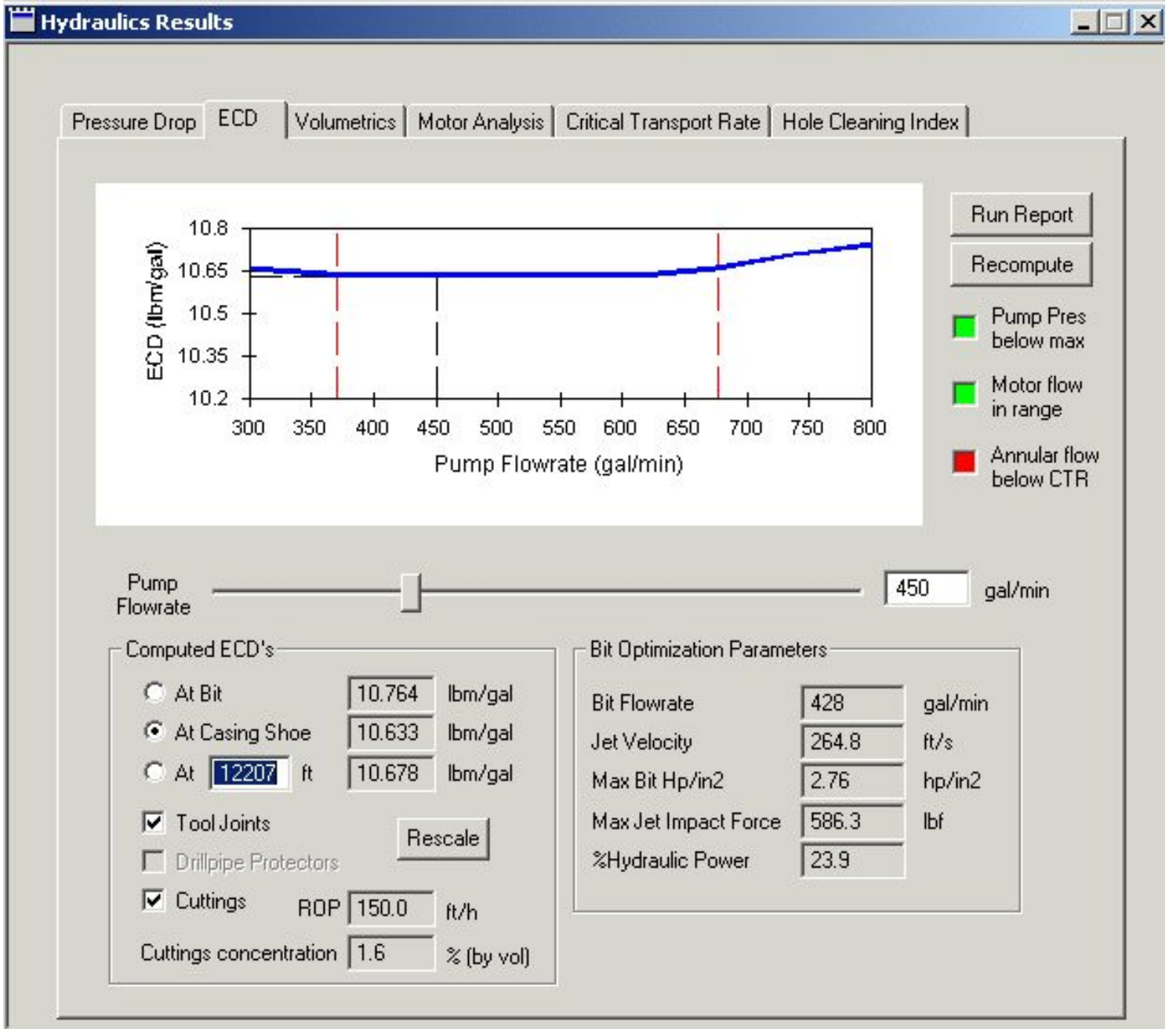
РЕЗУЛЬТАТЫ РАСЧЕТА ПОТЕРЬ ДАВЛЕНИЯ В ОБВЯЗКЕ



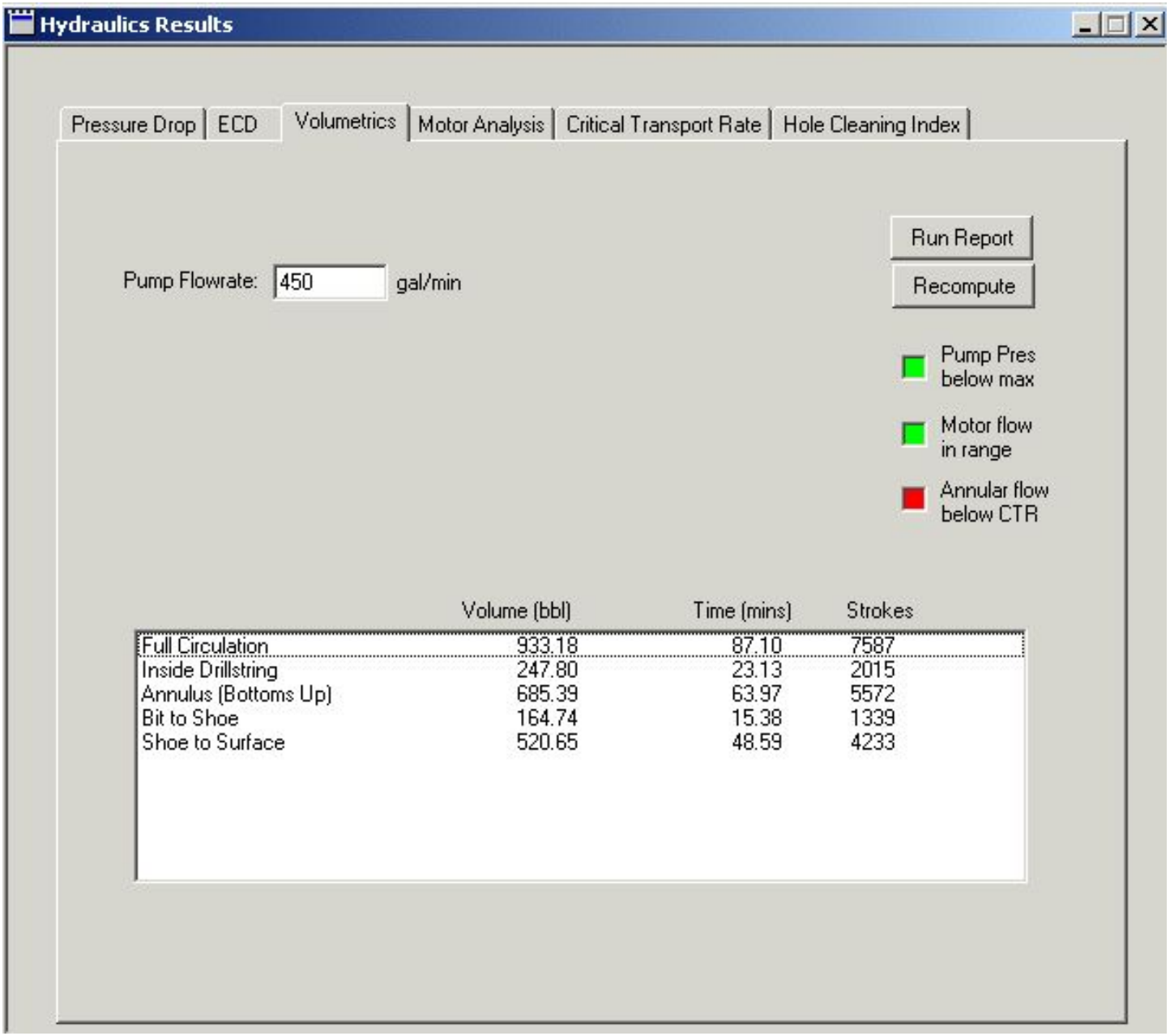
РЕЗУЛЬТАТЫ РАСЧЕТА ПОТЕРЬ ДАВЛЕНИЯ В ТРУБАХ



РЕЗУЛЬТАТЫ РАСЧЕТА ECD

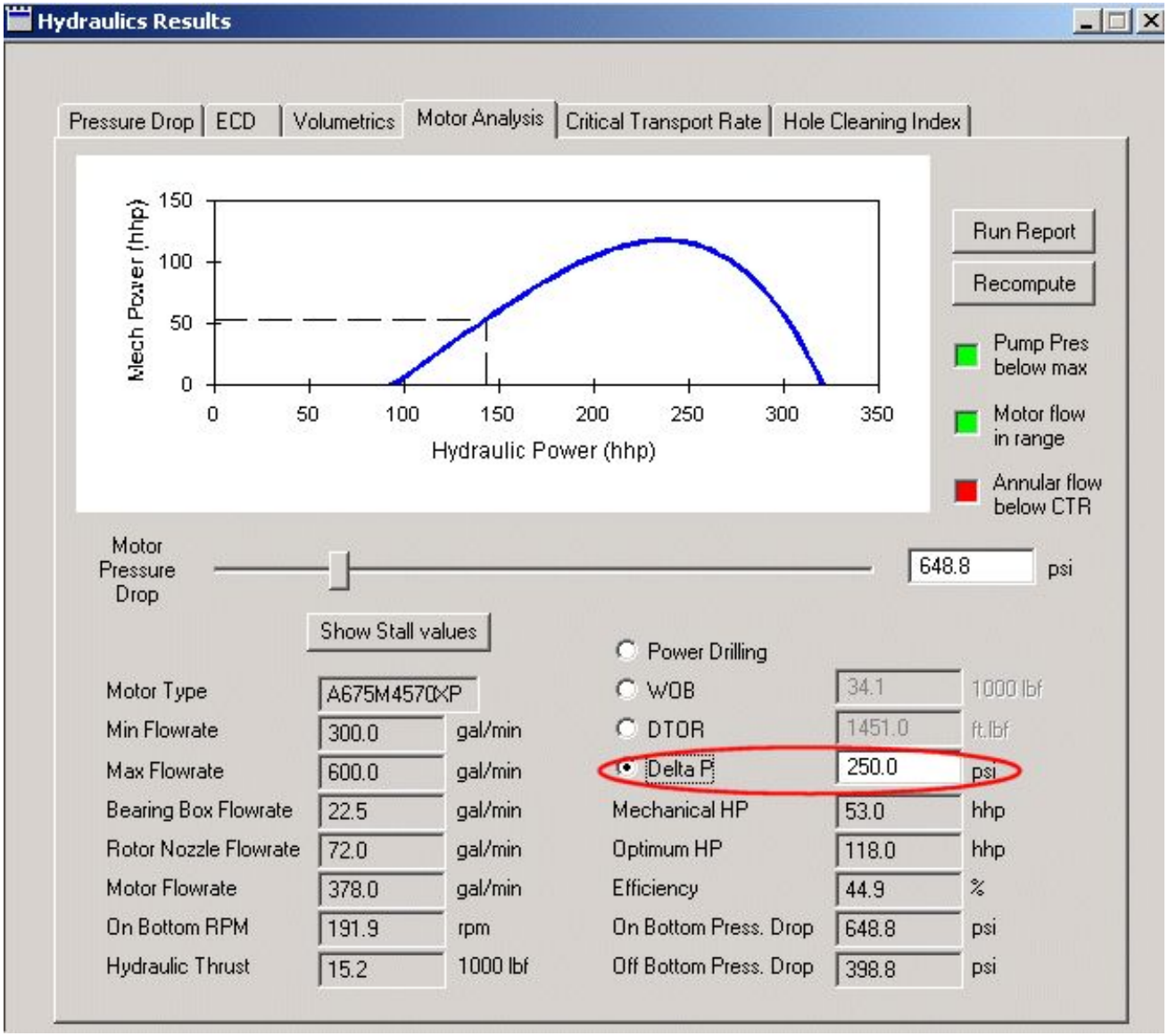


РЕЗУЛЬТАТЫ РАСЧЕТА ОБЪЕМОВ

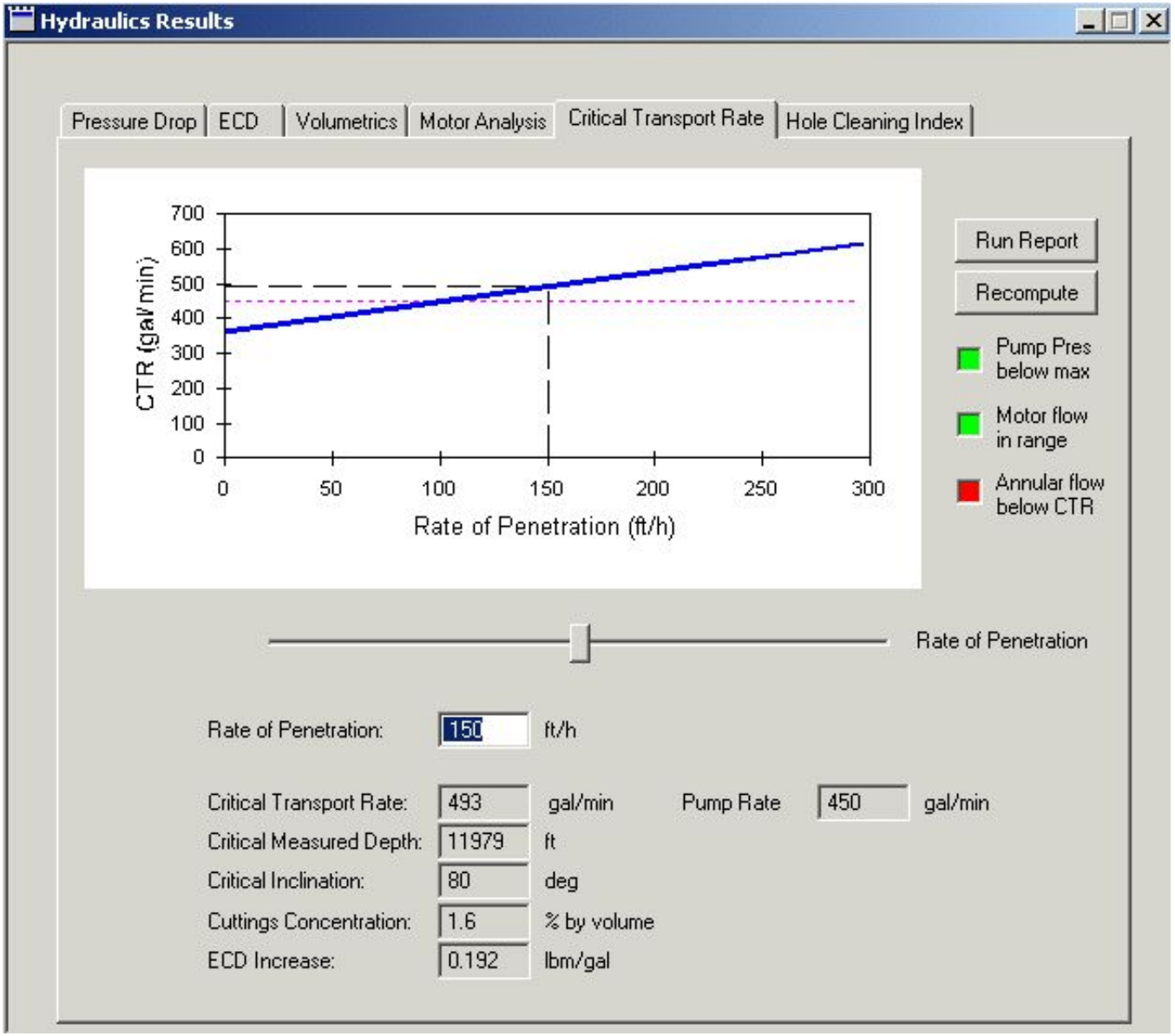


	Volume (bbl)	Time (mins)	Strokes
Full Circulation	933.18	87.10	7587
Inside Drillstring	247.80	23.13	2015
Annulus (Bottoms Up)	685.39	63.97	5572
Bit to Shoe	164.74	15.38	1339
Shoe to Surface	520.65	48.59	4233

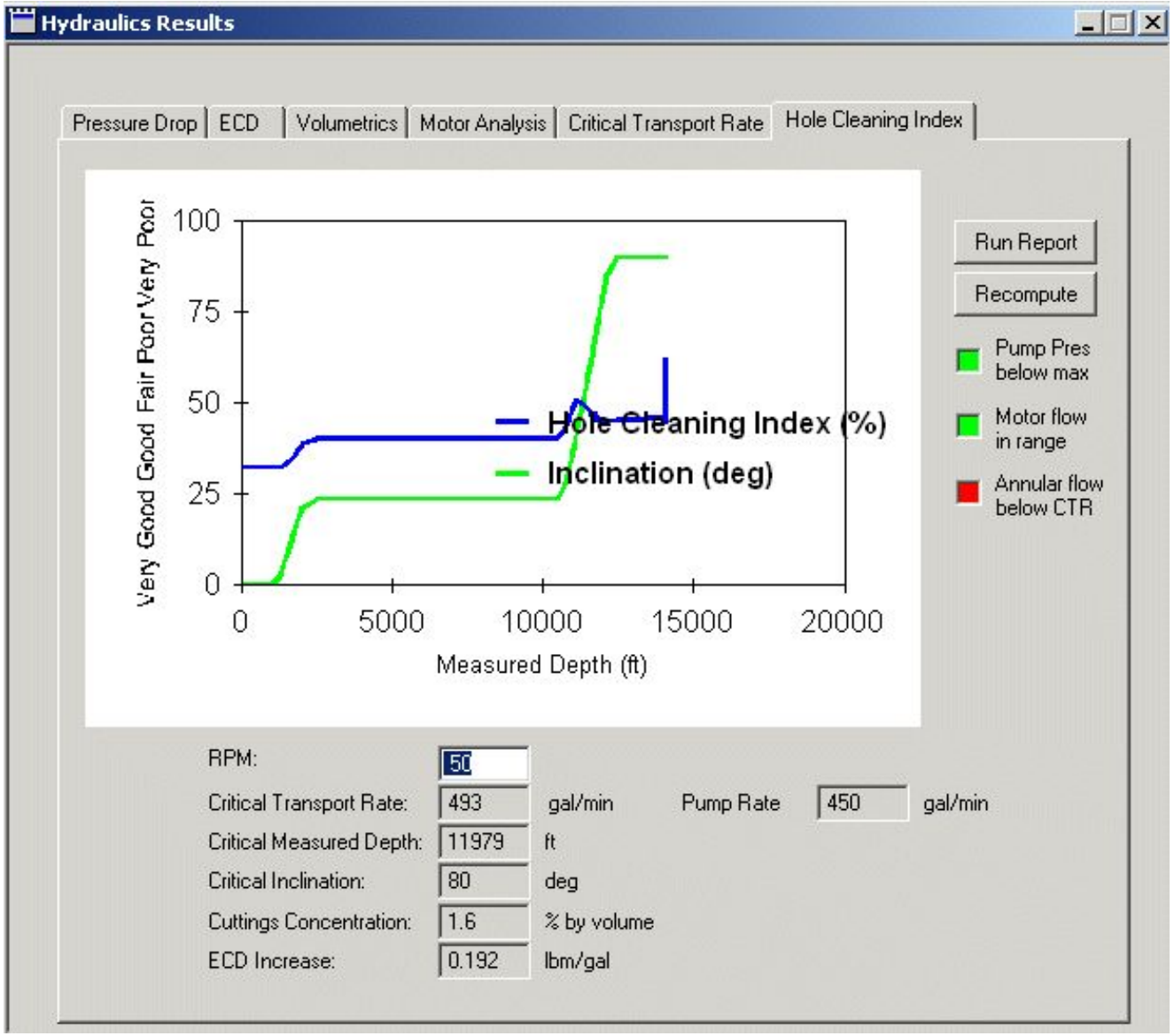
РЕЗУЛЬТАТЫ АНАЛИЗА РАБОТЫ ВЗД



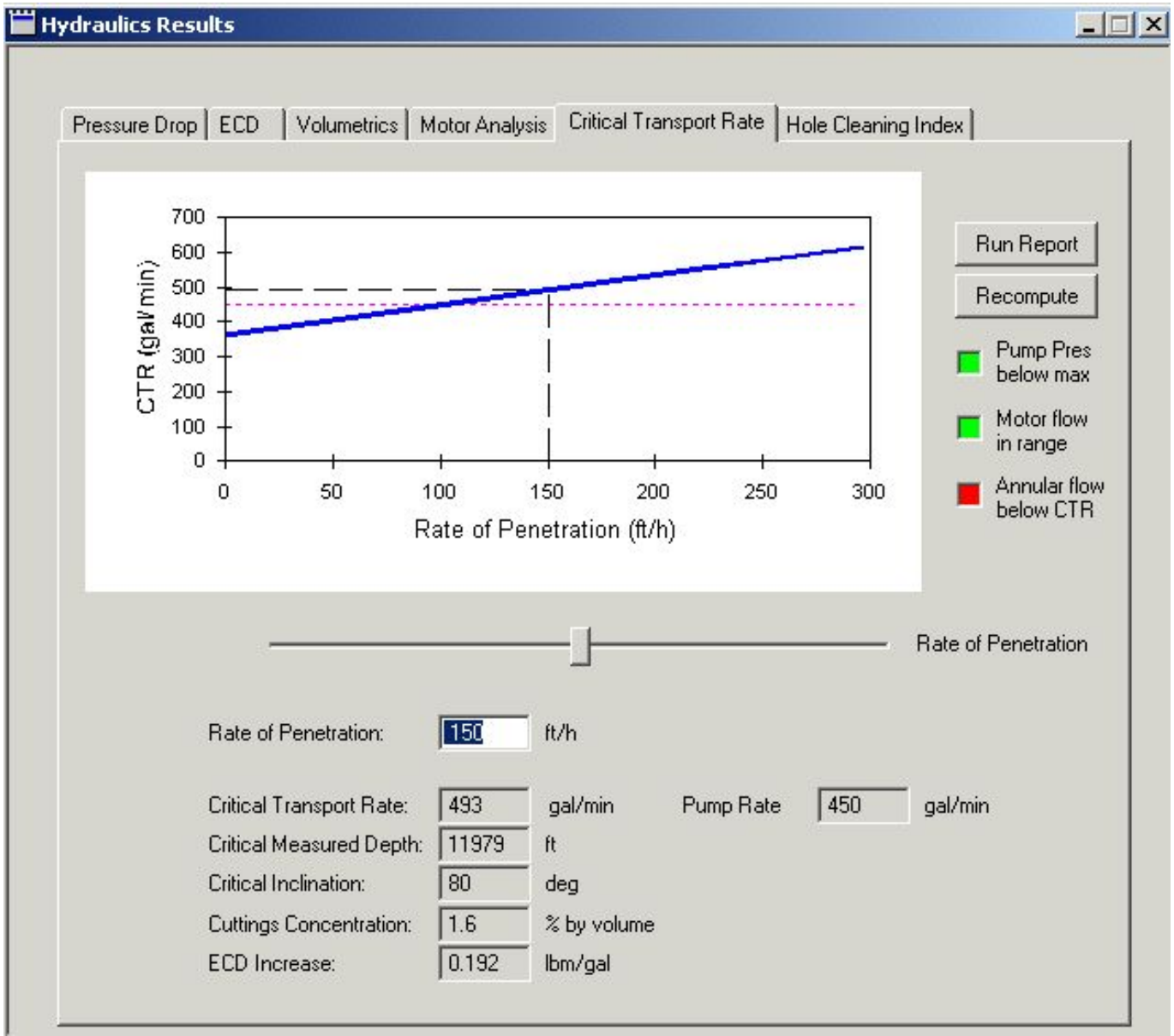
РЕЗУЛЬТАТЫ АНАЛИЗА ТРАНСПОРТА ШЛАМА



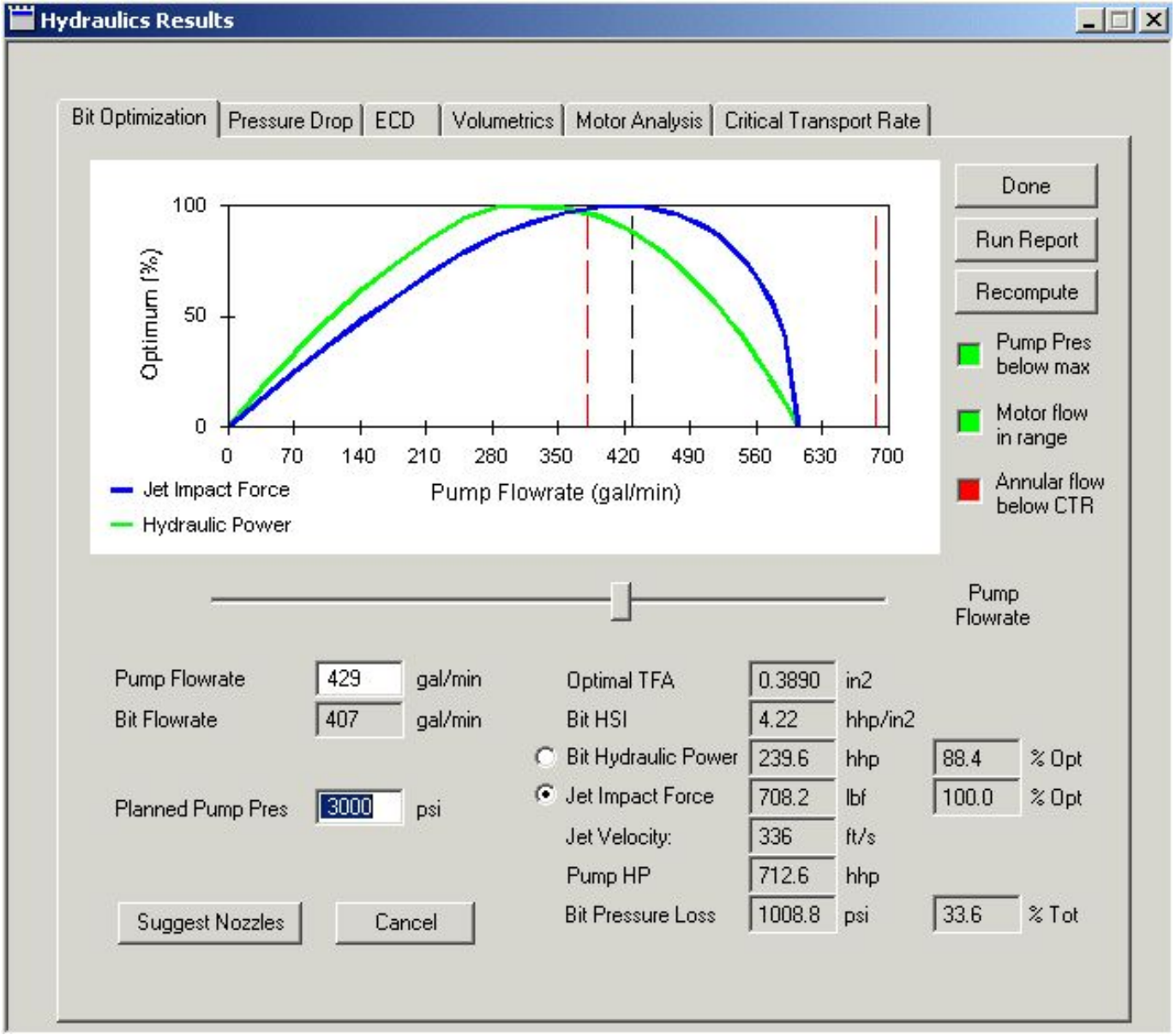
РЕЗУЛЬТАТЫ РАСЧЕТА ИНДЕКСА ОЧИСТКИ СТВОЛА



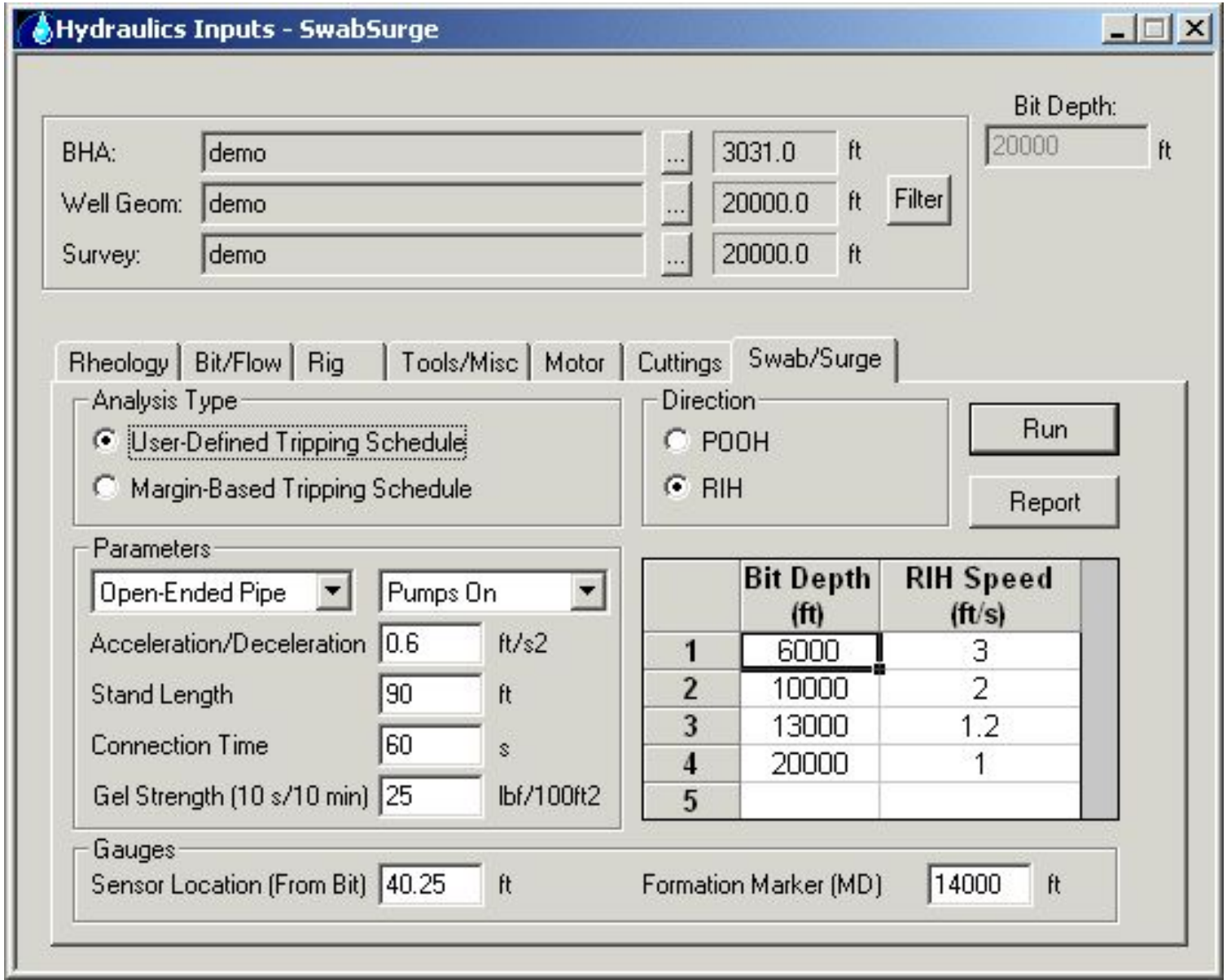
ОЦЕНКА ВЛИЯНИЯ РАСХОДА НА СКОРОСТЬ БУРЕНИЯ



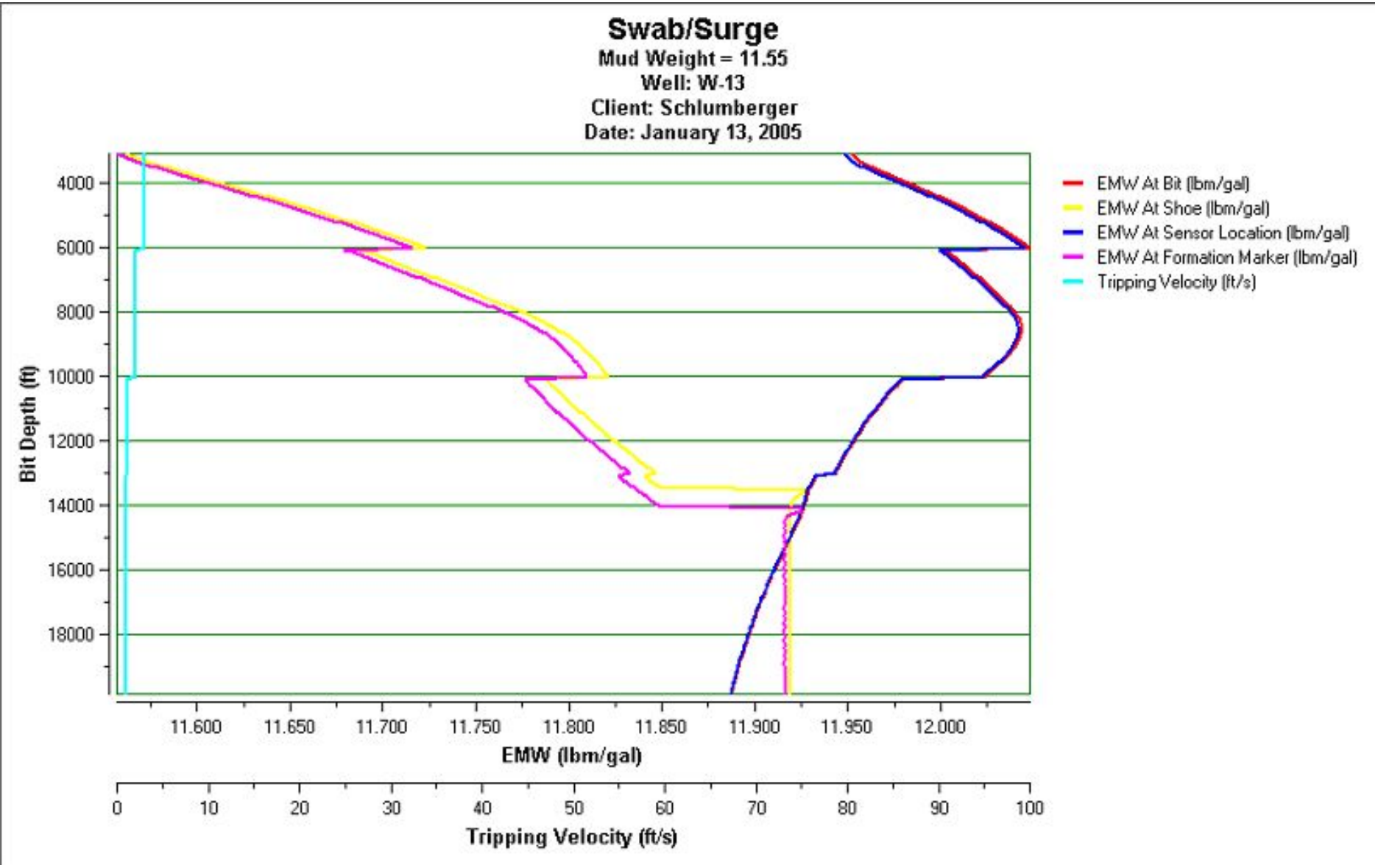
РЕЗУЛЬТАТЫ ОПТИМИЗАЦИИ ДОЛОТНЫХ НАСАДОК



ЗАДАНИЕ ОПЦИЙ РАСЧЕТА ДАВЛЕНИЙ ПРИ СПО



РЕЗУЛЬТАТЫ РАСЧЕТА ДАВЛЕНИЙ ПРИ СПО



РЕЗУЛЬТАТЫ РАСЧЕТА ДАВЛЕНИЙ ПРИ СПО

Hydro - [Swab/Surge Report]

File Edit View Window Launch Help

English

SWAB/SURGE PARAMETERS

Tripping Schedule:	User defined
Direction:	RIH
	Open-Ended Pipe/Pumps On
Pump Flowrate (gal/min):	400.0
Acceleration (ft/s2):	0.6
Stand Length (ft):	90.0
Connection Time (s):	60.0
Sensor Location-From Bit (ft):	40.25
Formation Marker-MD (ft):	14000.0
Surge Margin (lbm/gal):	1.0
Gel Strength (lbf/100ft2):	25.0

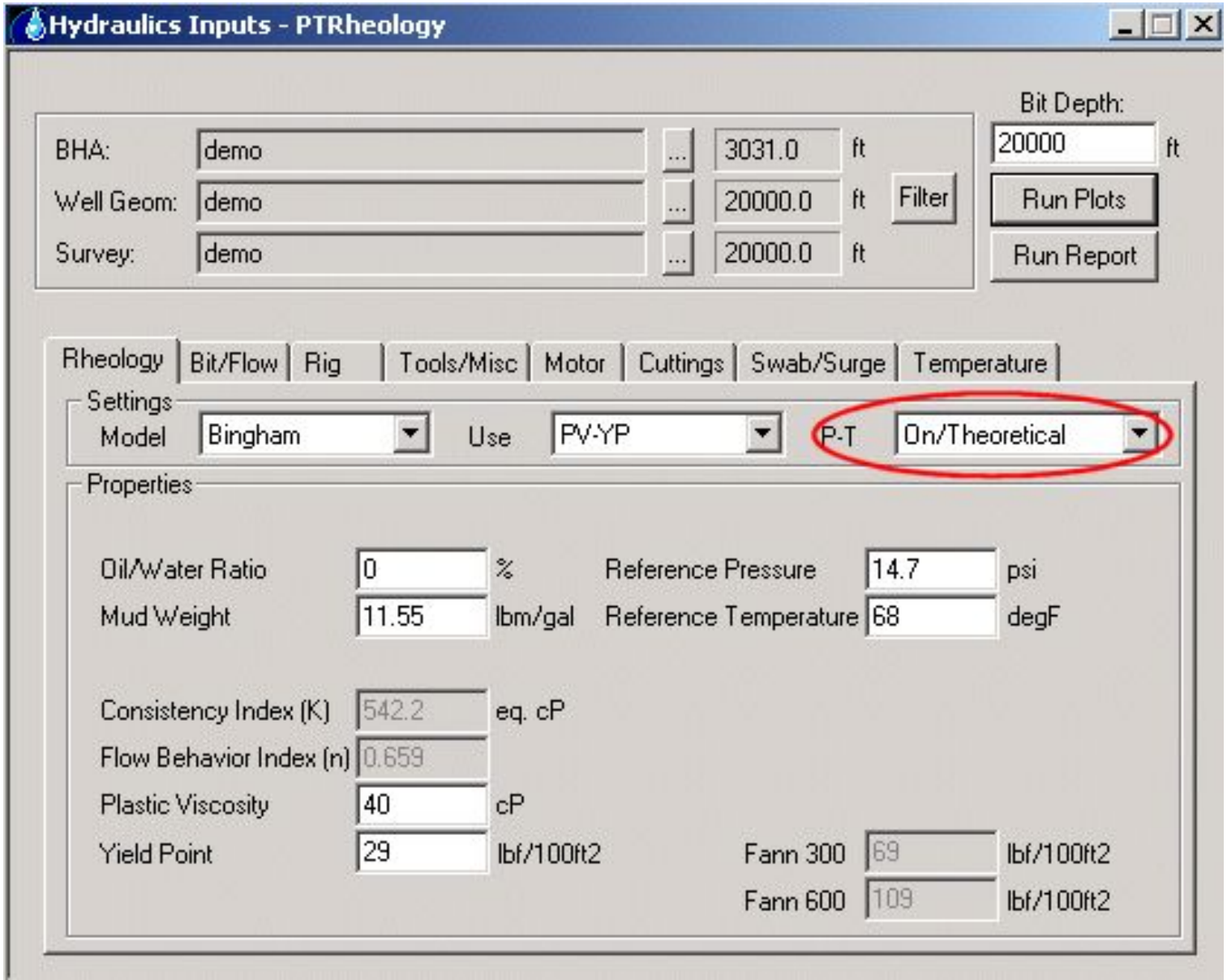
SWAB/SURGE OUTPUT

Bit Depth	Tripping Speed	EMW At Bit	EMW At Sensor Location	EMW At Shoe	EMW At Formation Marker	Total Trip Ti
ft	ft/s	lbm/gal	lbm/gal	lbm/gal	lbm/gal	h
3209.9	3.0	11.95	11.95	11.57	11.61	0
3299.9	3.0	11.96	11.95	11.57	11.62	0
3389.9	3.0	11.96	11.95	11.57	11.62	0
3479.9	3.0	11.96	11.96	11.58	11.63	0
3569.9	3.0	11.96	11.96	11.58	11.63	0
3659.9	3.0	11.97	11.96	11.59	11.64	0
3749.9	3.0	11.97	11.97	11.60	11.64	0
3839.9	3.0	11.97	11.97	11.60	11.65	0
3929.9	3.0	11.98	11.97	11.61	11.65	0
4019.9	3.0	11.98	11.98	11.61	11.66	0
4109.9	3.0	11.99	11.98	11.62	11.66	0
4199.9	3.0	11.99	11.99	11.62	11.67	0

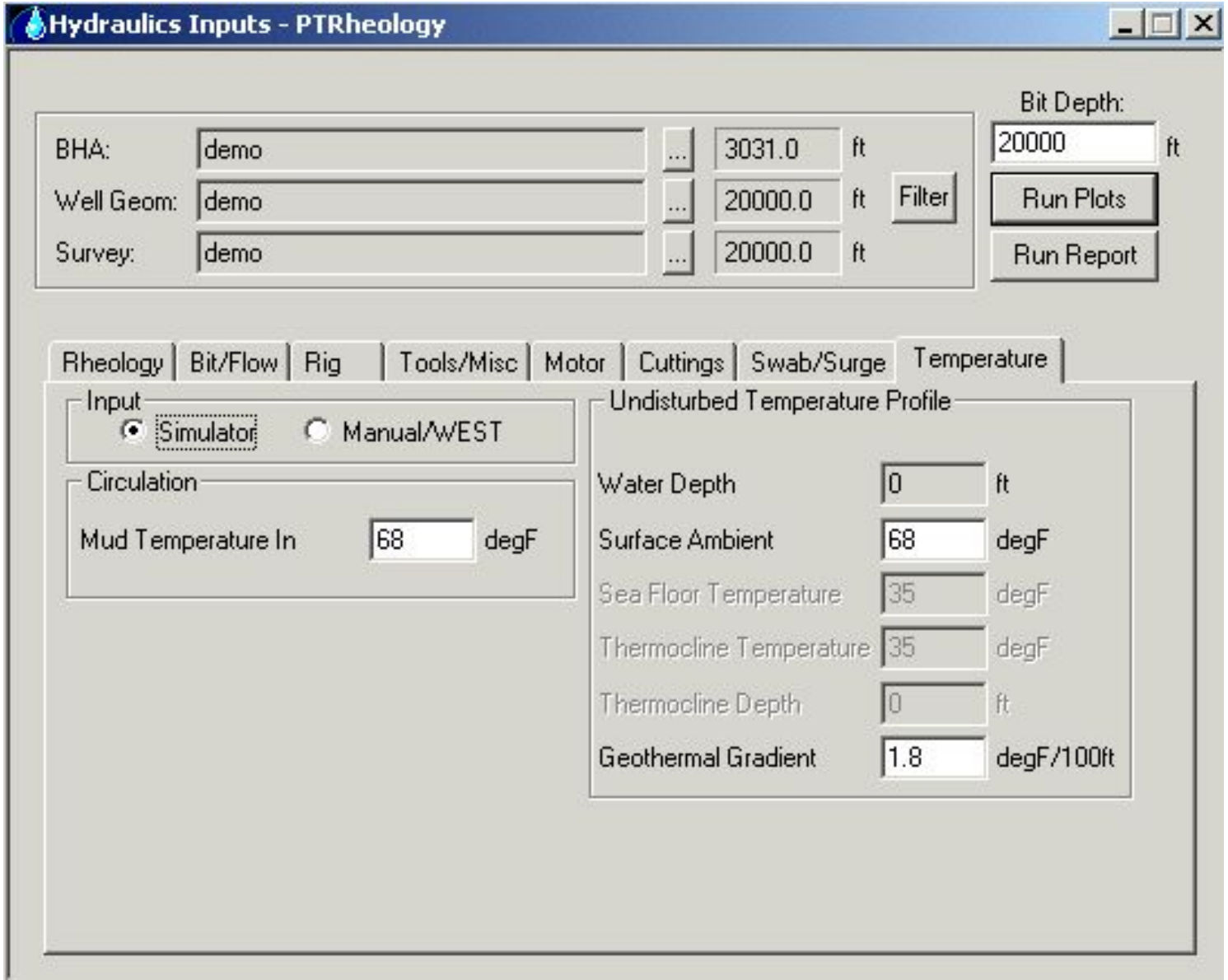
Swab&Surge

Ready Current user : Kdixon2 NUM

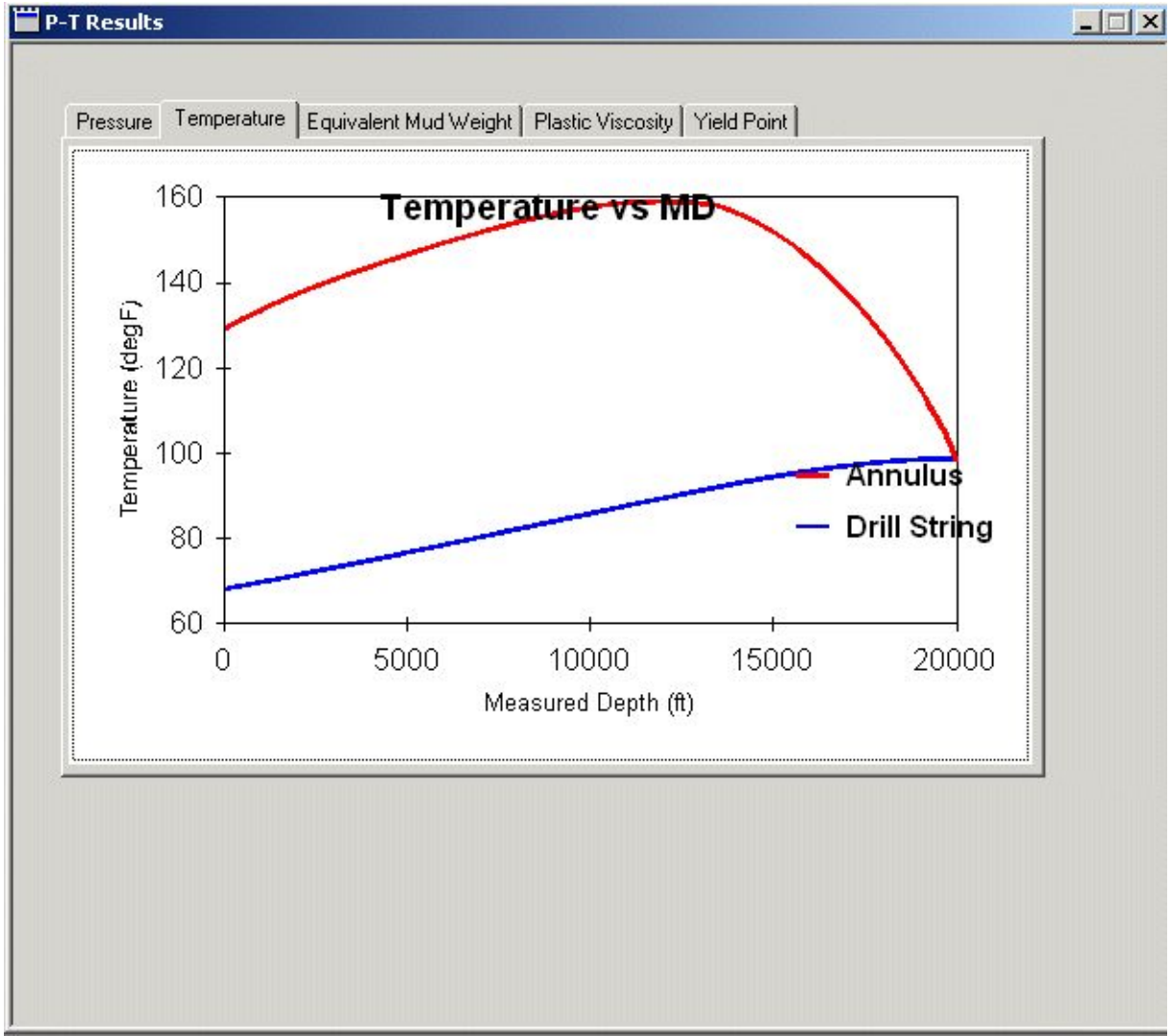
ВКЛЮЧЕНИЕ ОПЦИИ РАСЧЕТА С УЧЕТОМ ПОЛЯ ТЕМПЕРАТУР



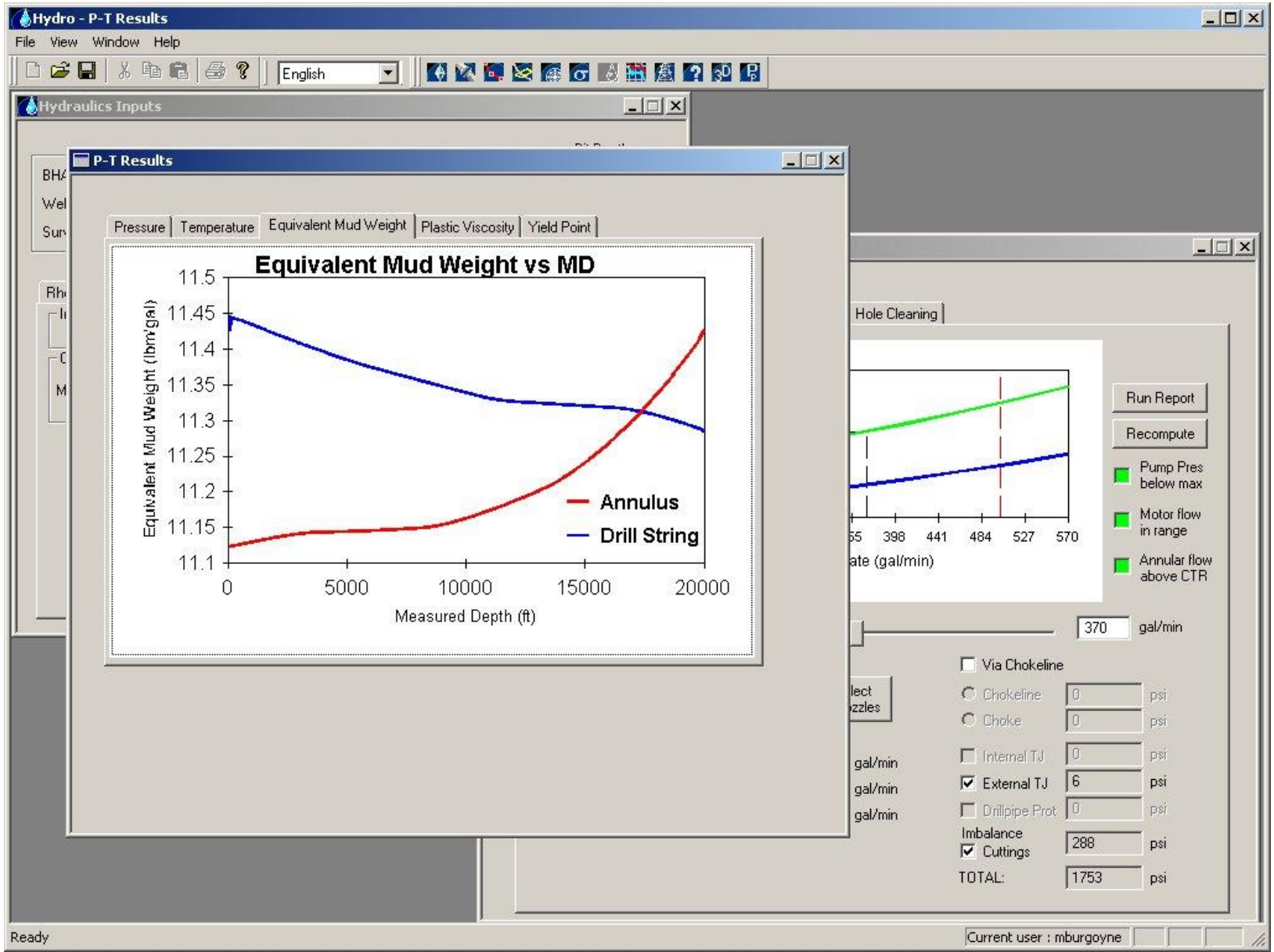
ЗАДАНИЕ ТЕМПЕРАТУРНОГО ГРАДИЕНТА



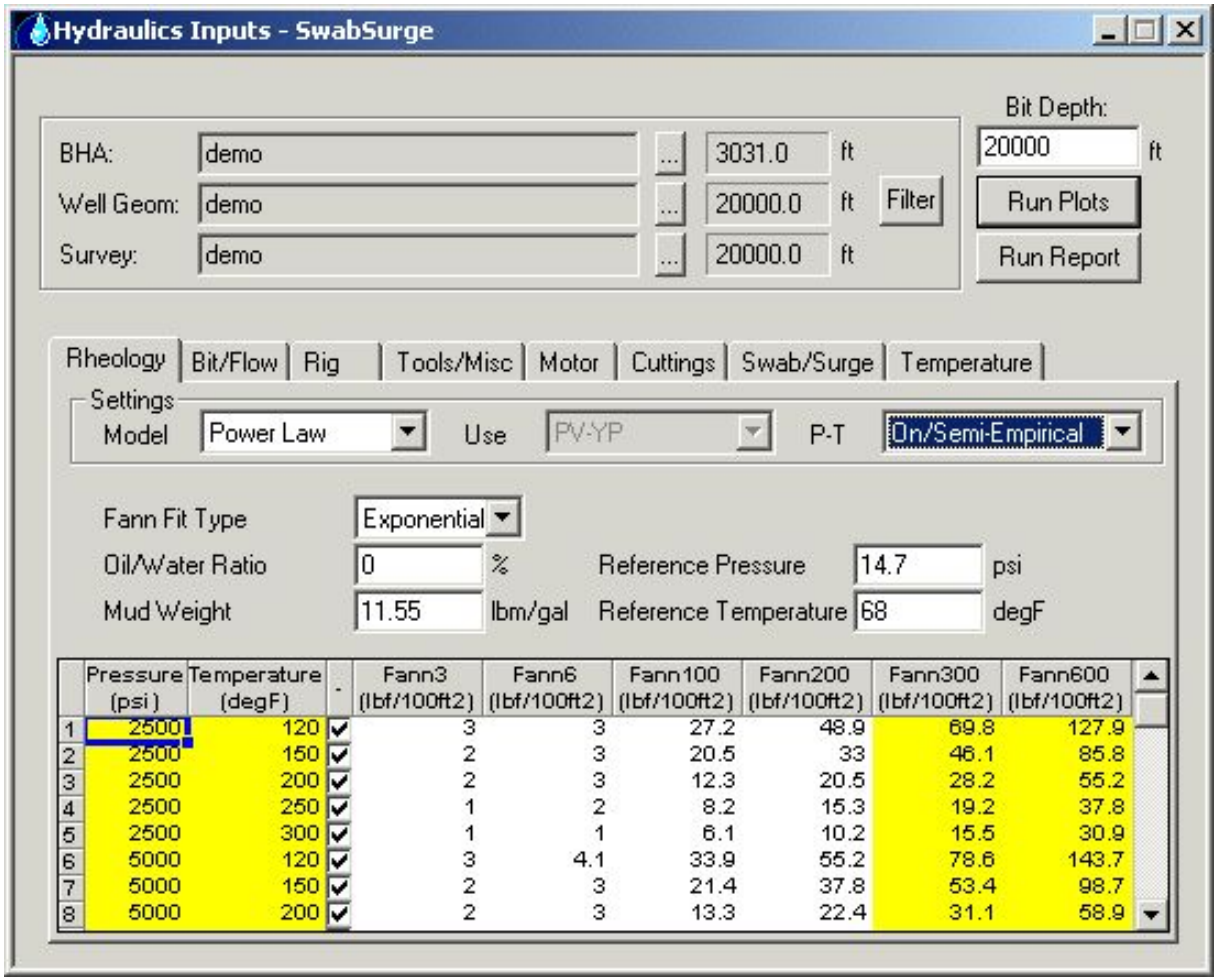
РЕЗУЛЬТАТЫ МОДЕЛИРОВАНИЯ ТЕМПЕРАТУРЫ РАСТВОРА ПРИ ЦИРКУЛЯЦИИ В СКВАЖИНЕ



РЕЗУЛЬТАТЫ РАСЧЕТА ЭКВИВАЛЕНТНОЙ ПЛОТНОСТИ

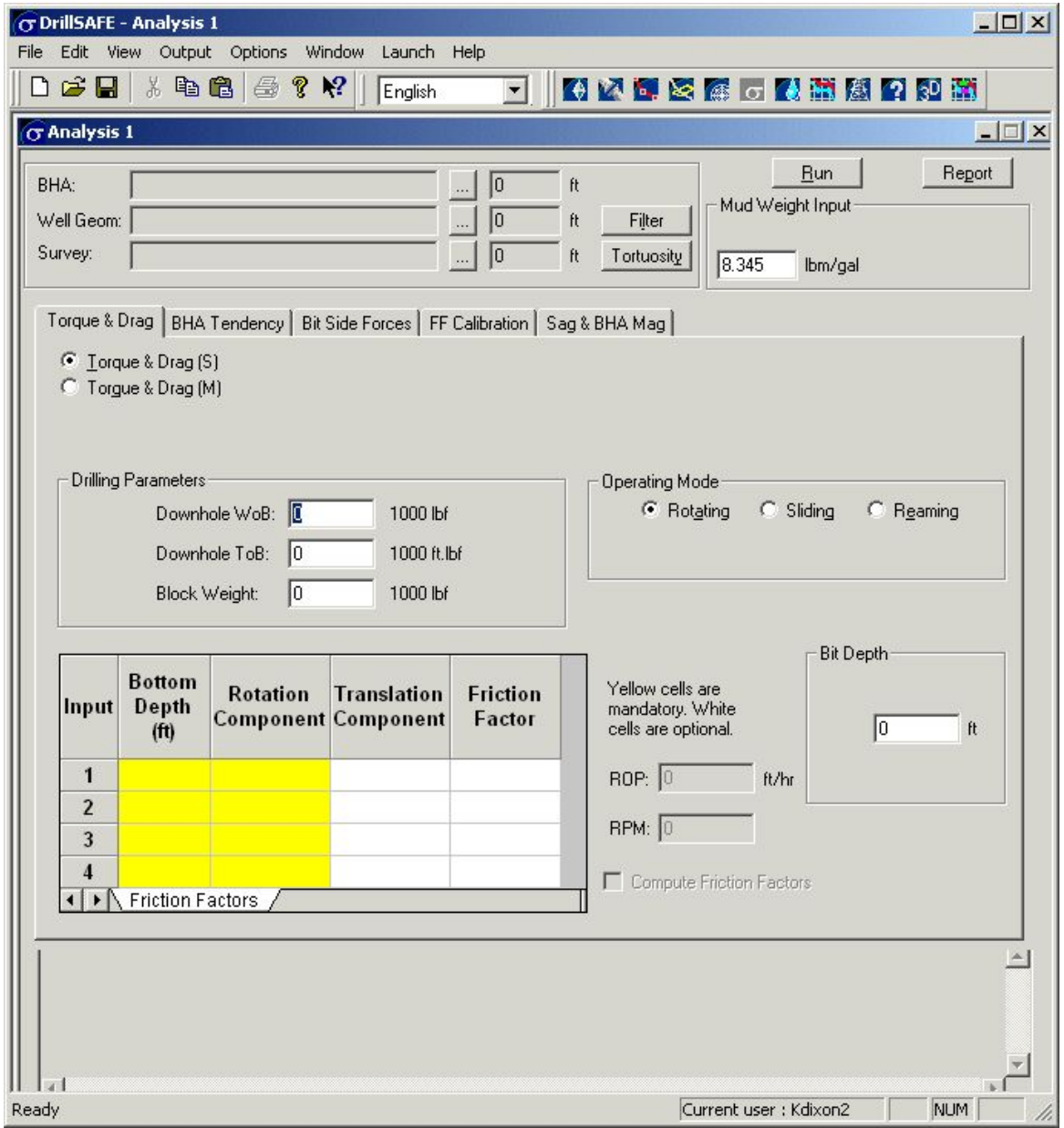


ВКЛЮЧЕНИЕ ОПЦИИ ПОЛУЭМПИРИЧЕСКОГО МОДЕЛИРОВАНИЯ РАСПРЕДЕЛЕНИЯ ТЕМПЕРАТУР И ДАВЛЕНИЙ



	Pressure (psi)	Temperature (degF)		Fann3 (lbf/100ft2)	Fann6 (lbf/100ft2)	Fann100 (lbf/100ft2)	Fann200 (lbf/100ft2)	Fann300 (lbf/100ft2)	Fann600 (lbf/100ft2)
1	2500	120	✓	3	3	27.2	48.9	69.8	127.9
2	2500	150	✓	2	3	20.5	33	46.1	85.8
3	2500	200	✓	2	3	12.3	20.5	28.2	55.2
4	2500	250	✓	1	2	8.2	15.3	19.2	37.8
5	2500	300	✓	1	1	6.1	10.2	15.5	30.9
6	5000	120	✓	3	4.1	33.9	55.2	78.6	143.7
7	5000	150	✓	2	3	21.4	37.8	53.4	98.7
8	5000	200	✓	2	3	13.3	22.4	31.1	58.9

ИСХОДНЫЙ ВИД ОКНА МОДУЛЯ DRILLSAFE



СОЗДАНИЕ ТРАЕКТОРИИ СКВАЖИНЫ В МОДУЛЕ WELL DESIGN

Well Design - [Tutorial#1]

File Edit View Output Format Add Options Window Launch Help

Metric

Horizontal Ref: Structure: Sosnovaya

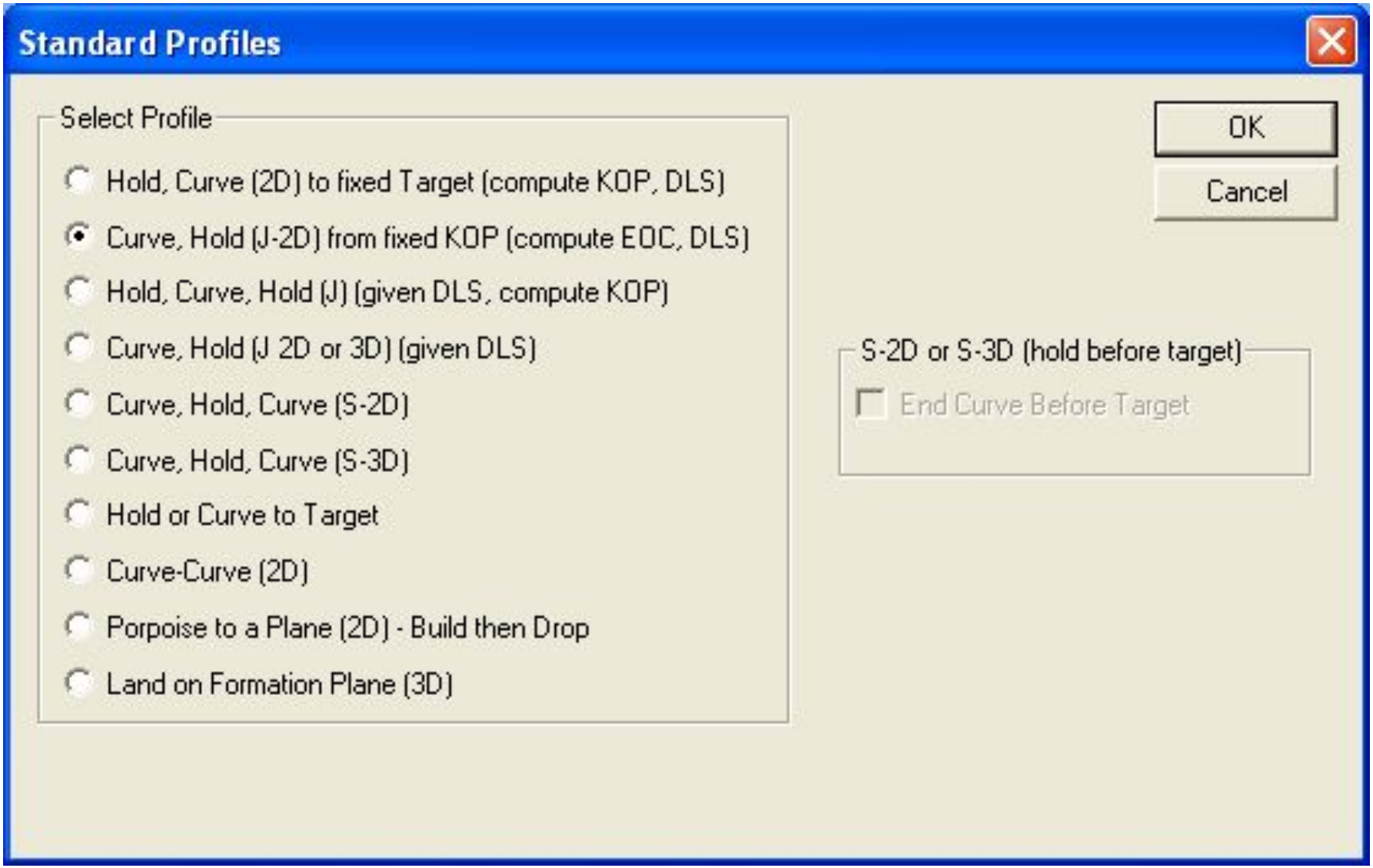
Elevation Ref: Borehole: Rotary Table

B1 0.00

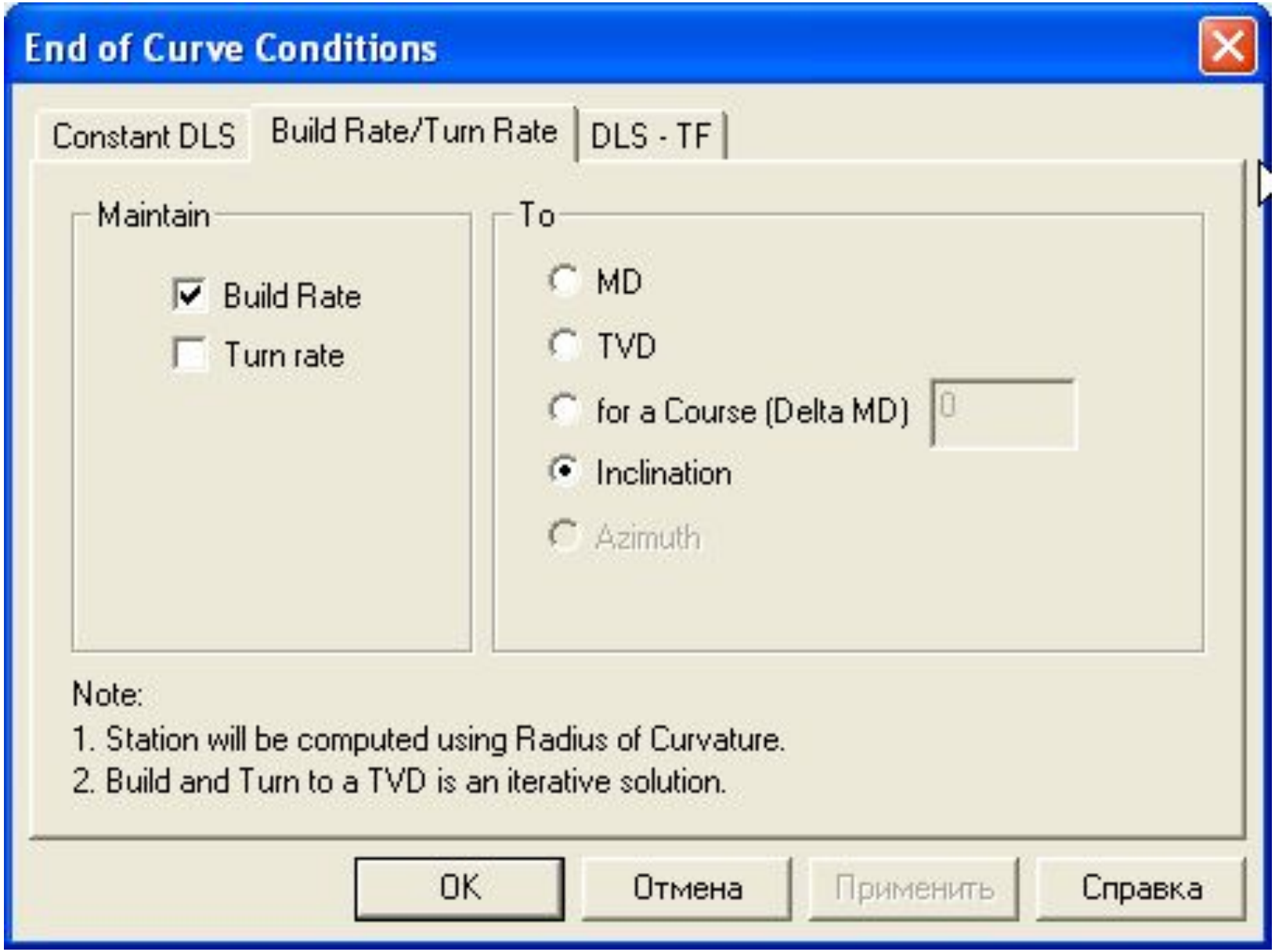
	Comment	MD (m)	INCL (°)	Azim (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	DLS (°/30m)	TF (°)	BR (°/30m)	TR (°/30m)	?MD (m)
1	Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.0			
2	KOP	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	200.00
3	End of Build	391.86	25.58	0.00	385.55	42.13	42.13	0.00	4.00	0.0	4.00	0.00	191.86
4	Casing Point 9 5/8"	795.92	25.58	0.00	750.00	216.60	216.60	0.00	0.00	0.0	0.00	0.00	404.06
5	Begin of Drop	1598.15	25.58	0.00	1473.59	563.00	563.00	0.00	0.00	180.0	0.00	0.00	1206.29
6	Target#1	3133.05	0.00	0.00	2958.00	900.00	900.00	0.00	0.50		-0.50	0.00	1534.91

Ready Current user : ADMIN VSEC Origin: (0.00 N, 0.00 E) VSEC Azim: 0.00

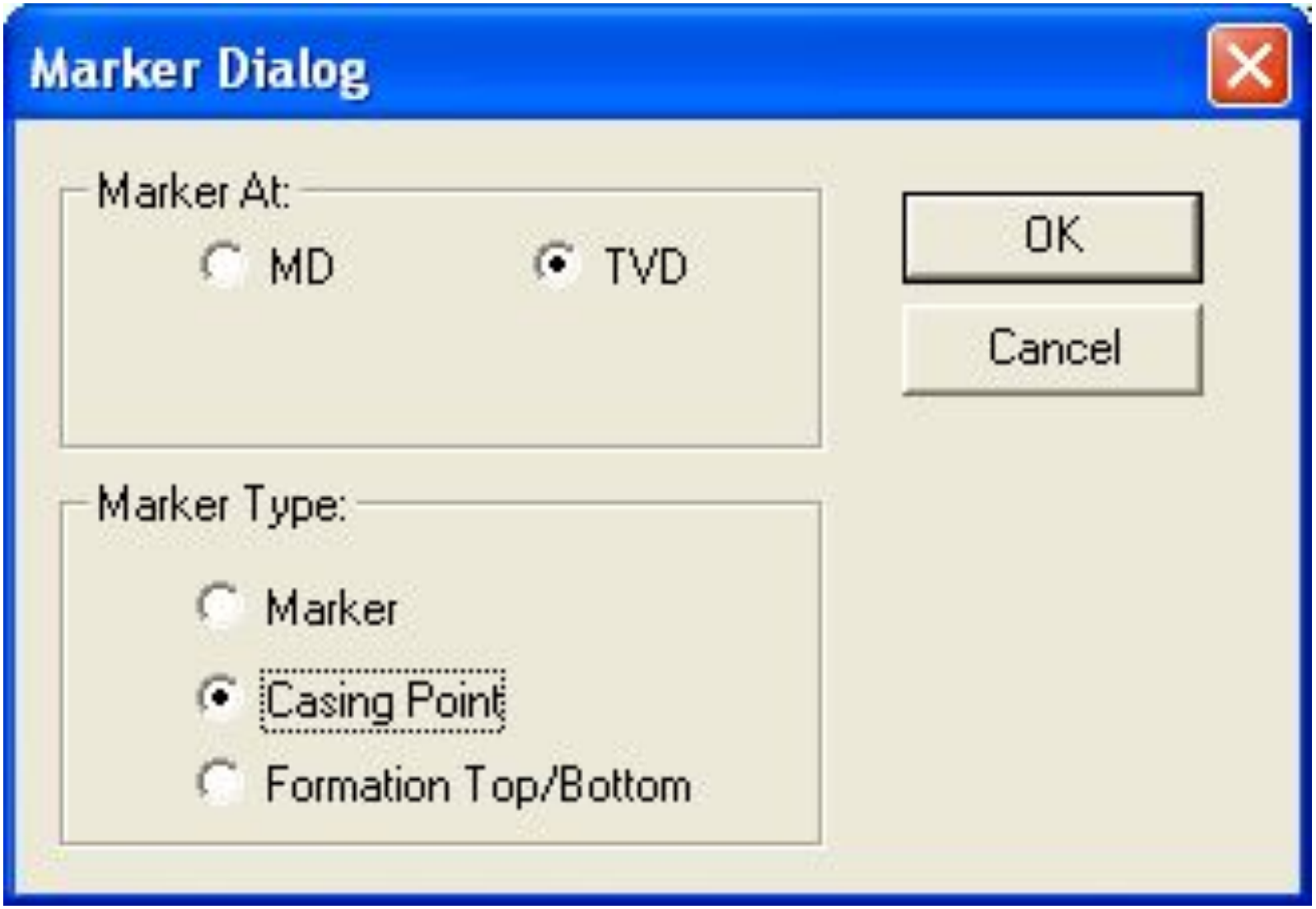
СТАНДАРТНЫЕ ТРАЕКТОРИИ ДОСТУПНЫЕ В МОДУЛЕ WELL DESIGN



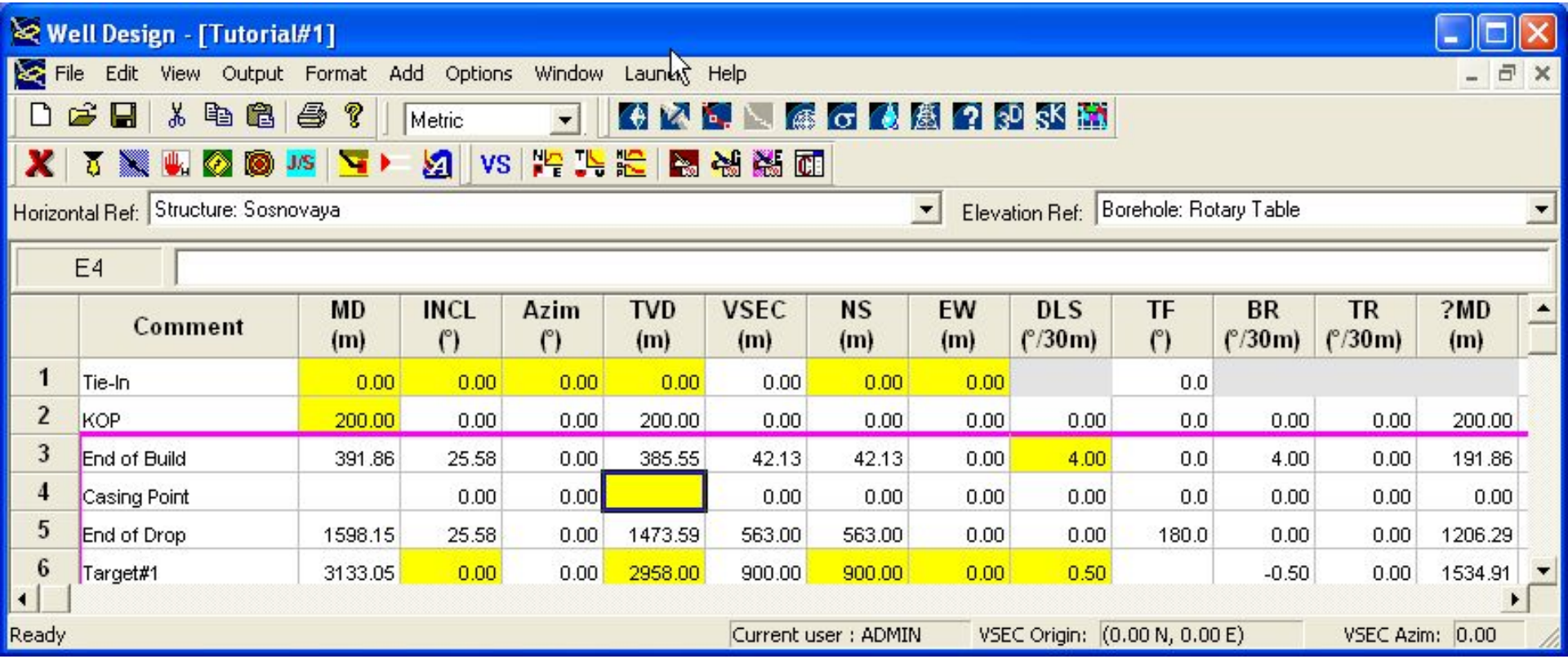
ЗАДАНИЕ ПАРАМЕТРОВ ИСКРИВЛЕННОГО УЧАСТКА В МОДУЛЕ WELL DESIGN



ДОБАВЛЕНИЕ МАРКЕРОВ НА ТРАЕКТОРИЮ В МОДУЛЕ WELL DESIGN

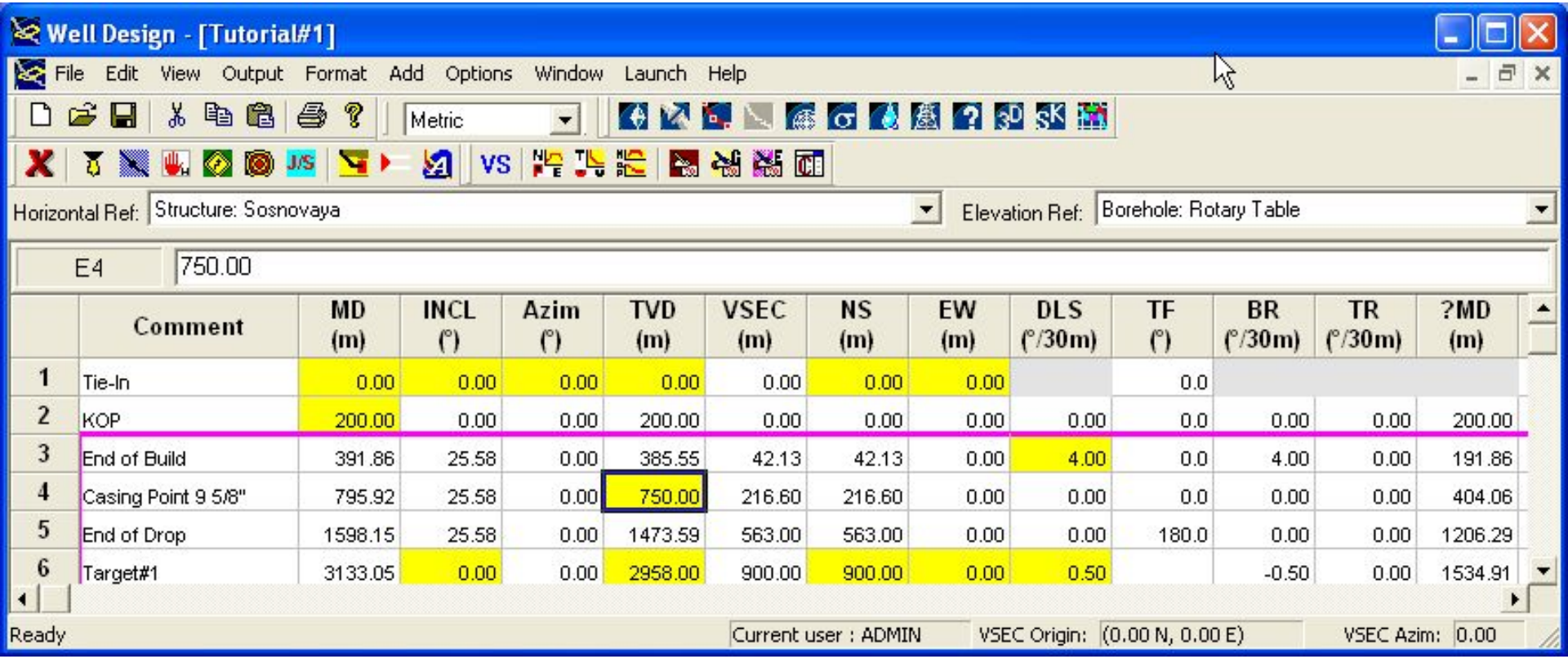


ДОБАВЛЕНИЕ МАРКЕРОВ НА ТРАЕКТОРИЮ В МОДУЛЕ WELL DESIGN



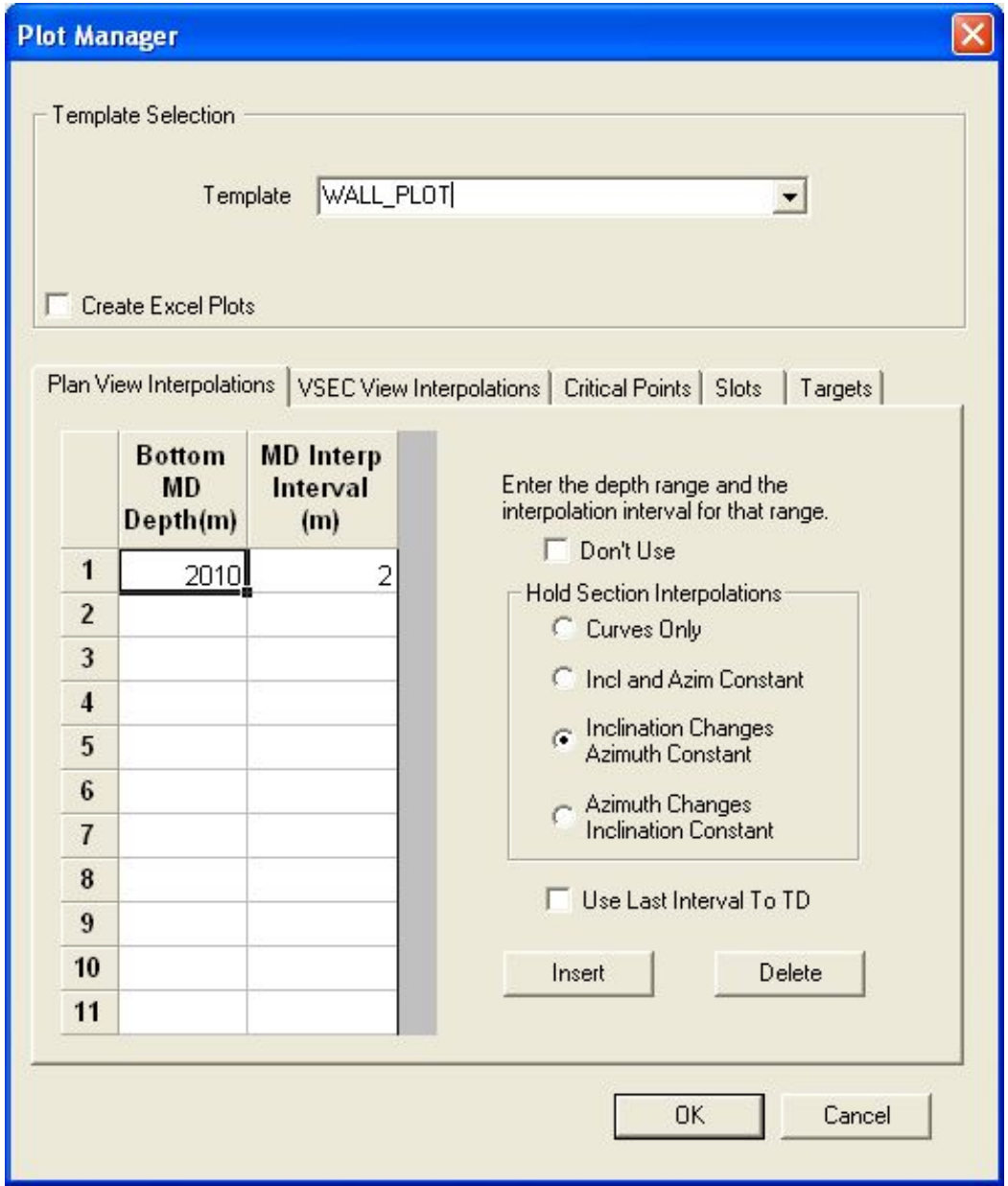
	Comment	MD (m)	INCL (°)	Azim (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	DLS (°/30m)	TF (°)	BR (°/30m)	TR (°/30m)	?MD (m)
1	Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.0			
2	KOP	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	200.00
3	End of Build	391.86	25.58	0.00	385.55	42.13	42.13	0.00	4.00	0.0	4.00	0.00	191.86
4	Casing Point		0.00	0.00		0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00
5	End of Drop	1598.15	25.58	0.00	1473.59	563.00	563.00	0.00	0.00	180.0	0.00	0.00	1206.29
6	Target#1	3133.05	0.00	0.00	2958.00	900.00	900.00	0.00	0.50		-0.50	0.00	1534.91

ДОБАВЛЕНИЕ МАРКЕРОВ НА ТРАЕКТОРИЮ В МОДУЛЕ WELL DESIGN



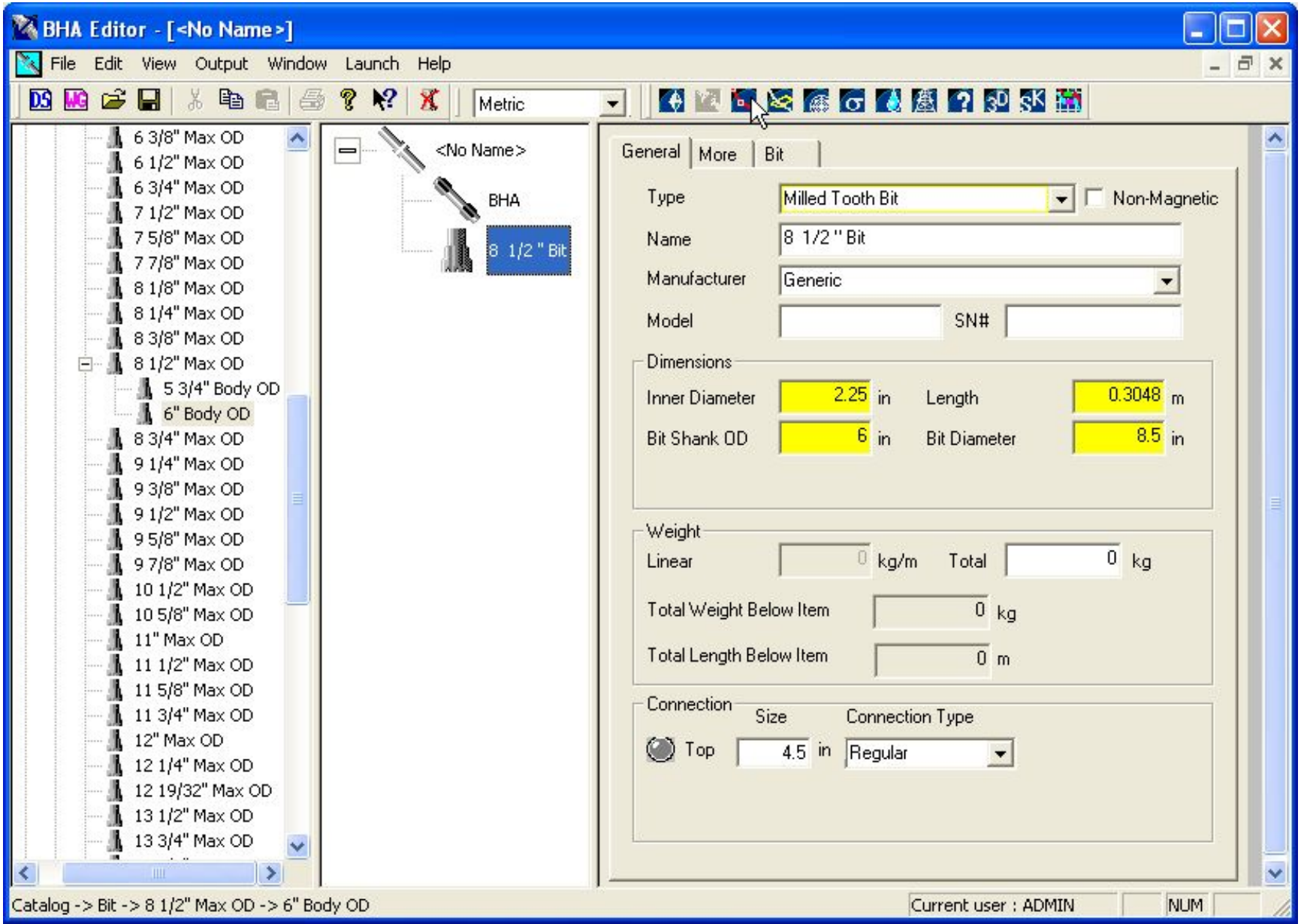
	Comment	MD (m)	INCL (°)	Azim (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	DLS (°/30m)	TF (°)	BR (°/30m)	TR (°/30m)	?MD (m)
1	Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.0			
2	KOP	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	200.00
3	End of Build	391.86	25.58	0.00	385.55	42.13	42.13	0.00	4.00	0.0	4.00	0.00	191.86
4	Casing Point 9 5/8"	795.92	25.58	0.00	750.00	216.60	216.60	0.00	0.00	0.0	0.00	0.00	404.06
5	End of Drop	1598.15	25.58	0.00	1473.59	563.00	563.00	0.00	0.00	180.0	0.00	0.00	1206.29
6	Target#1	3133.05	0.00	0.00	2958.00	900.00	900.00	0.00	0.50		-0.50	0.00	1534.91

СОЗДАНИЕ ОТЧЕТА ПО ТРАЕКТОРИИ В МОДУЛЕ WELL DESIGN

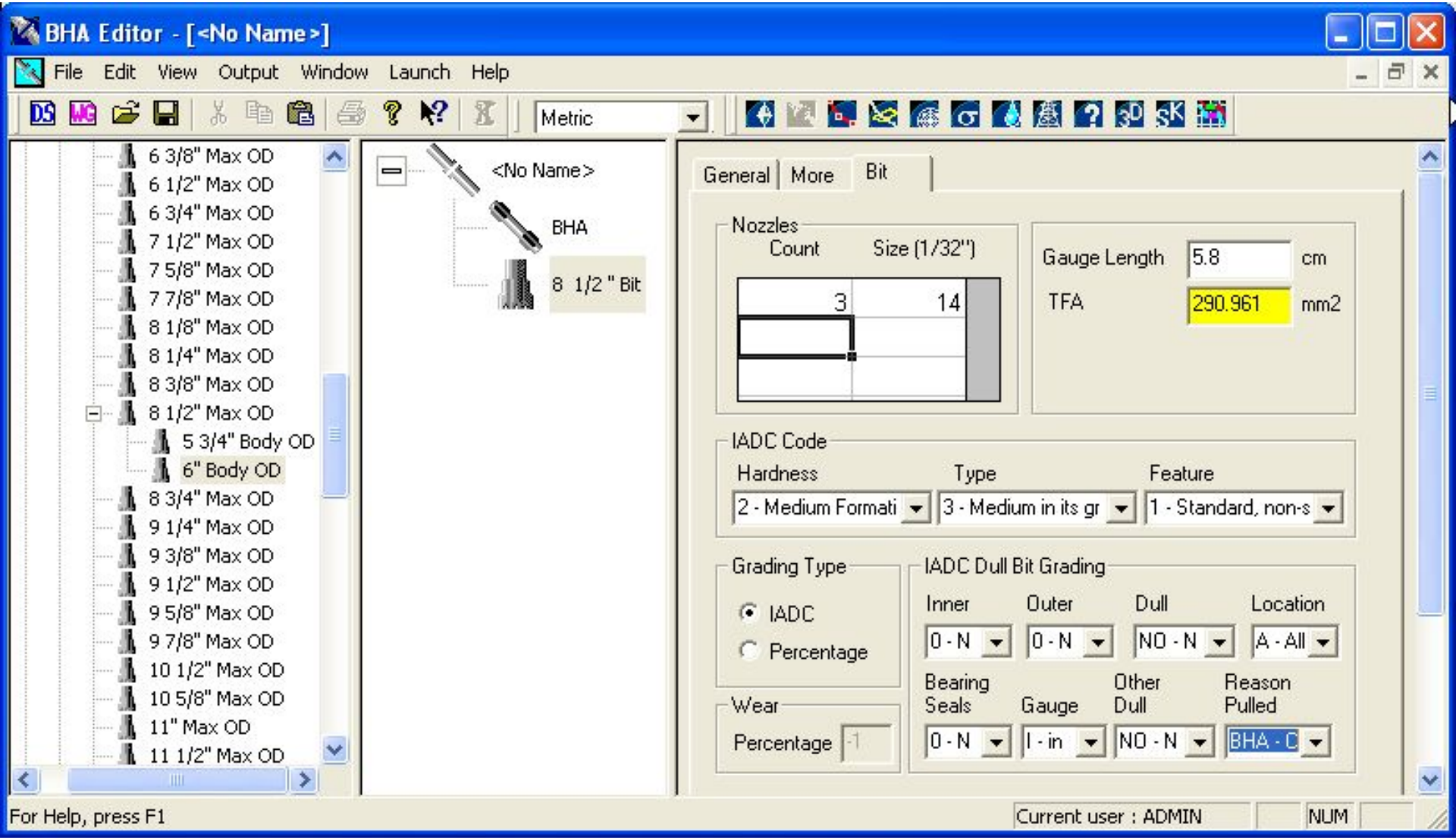


СОЗДАНИЕ ОТЧЕТА ПО ТРАЕКТОРИИ В МОДУЛЕ WELL DESIGN

РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ ДОЛОТА В МОДУЛЕ BHA EDITOR



РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ ДОЛОТА В МОДУЛЕ BHA EDITOR



РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ ОТКЛОНИТЕЛЯ В МОДУЛЕ BHA EDITOR

BHA Editor - [<No Name>]

File Edit View Output Window Launch Help

Metric

- 6 3/4" OD
  - A675M1240SP
  - A675M1240SP-AIM
  - A675M2380XP
  - A675M2380XP-AIM
  - A675M4548SP
  - A675M4548SP-AIM
  - A675M4548SP-GST
  - A675M4570XP
    - 4 1/2" H90 (Up)
    - 4 1/2" NC46 (4 IF) (Up)
    - 4 1/2" NC50 (4 1/2 IF) (Up)
      - 4 1/2" Regular (Down)
      - 4 1/2" Regular (Down)
      - 6 5/8" Regular (Down)
      - 6 5/8" Regular (Down)
    - 4 1/2" Regular (Up)
  - A675M4570XP-AIM
  - A675M4570XP-GST
  - A675M7820AD
  - A675M7820AD-AIM
  - A675M7830SP
  - A675M7830SP-AIM
  - A675M7830SP-GST
  - A675M7850XP
  - A675M7850XP-AIM
  - A675M7850XP-GST
  - A675S1240SP

- <No Name>
  - BHA
    - A675M4570XP
    - 8 1/2 " Bit

General | More | Motor

Type: PDM — Non-Magnetic

Name: A675M4570XP

Manufacturer: Schlumberger

Model: A675M4570XP SN#:

Dimensions

Inner Diameter	5.5	in	Length	8.08025	m
Outer Diameter	6.75	in	Maximum OD	8.375	in
Fish-Neck OD	0	in	Fish-Neck Length	0	m

Weight

Linear	121.821	kg/m	Total	984.329	kg
Total Weight Below Item	24.9996	kg			
Total Length Below Item	0.3048	m			

Connection

	Size		Connection Type		BSR
Top	4.5	in	NC50 (4 1/2 IF)	Pin / Box	N.A.
Bottom	4.5	in	Regular	Pin / Box	N.A.

Catalog -> Motor -> Schlumberger -> 6 3/4" OD -> A675M4570XP -> 4 1/2" NC50 (4 1/2 IF) (Up) -> 4 1/2" Regular (Down)

Current user : ADMIN NUM

РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ ОТКЛОНИТЕЛЯ В МОДУЛЕ BHA EDITOR

BHA Editor - bha_3133

File Edit View Output Window Launch Help

Metric

bha_3133

Equipment Database
- Catalog
  - Bent Sub
  - Bit
  - Collar
  - Downhole Sensor
  - Drill Pipe
  - Heavy Weight Drill Pipe
  - Hole Opener & Reamer
  - Jar/Shock Sub
  - Misc. Sub
  - Motor
  - MWD/LWD
  - Rotary Steerable
  - Stabilizer
  - Well Bore
- User

bha_3133
- 5" 19.50 DPE, 10% Wear
- BHA
  - Crossover
  - 5" HWDP
  - Monel 6 3/4" Collar
  - PowerPulse
  - CDR
  - Stabilizer
  - A675M4570XP
    - Stabilizer #1
- 8 1/2 " Bit

General | More | Motor

Bend #1

Angle	0.5	deg
Bend to Bottom Connection	1.83794	m

Bend #2

Angle	0	deg
Bend to Bottom Connection	0	m

Tool Read-out Port Distance

Read-out Port To Bottom Connection	0	m

Flow Range

1135.6 to 2271.25 L/min

For Help, press F1 | Current user : ADMIN | CAP | NUM

РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ ОТКЛОНИТЕЛЯ В МОДУЛЕ BHA EDITOR

BHA Editor - bha_3133

File Edit View Output Window Launch Help

Metric

bha_3133

Equipment Database
- Catalog
  - Bent Sub
  - Bit
  - Collar
  - Downhole Sensor
  - Drill Pipe
  - Heavy Weight Drill Pipe
  - Hole Opener & Reamer
  - Jar/Shock Sub
  - Misc. Sub
  - Motor
  - MWD/LWD
  - Rotary Steerable
  - Stabilizer
  - Well Bore
- User

bha_3133
- 5" 19.50 DPE, 10% Wear
- BHA
  - Crossover
  - 5" HWDP
  - Monel 6 3/4" Collar
  - PowerPulse
  - CDR
  - Stabilizer
  - A675M4570XP
    - Stabilizer #1
- 8 1/2 " Bit

General

Type: Stabilizer

Name: Stabilizer #1

Blade Distances

Blade Mid-Point To PDM's Bottom Conn.: 0.5334 m

Blade Mid-Point to the Bit: 0.8382 m

Dimensions

Body Length: 0.356616 m

Max. Outer Diameter: 8.375 in

Blade Info

Blade Length: 0.356616 m

Blade Width: 0 in

Blade Spiral: 0.000000 deg

Remark

For Help, press F1 | Current user : ADMIN | CAP | NUM

РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ БУРИЛЬНЫХ ТРУБ В МОДУЛЕ BHA EDITOR

BHA Editor - [<No Name>]

File Edit View Output Window Launch Help

Metric

Equipment Database
- Catalog
  - Bent Sub
  - Bit
  - Collar
  - Downhole Sensor
  - Drill Pipe
    - 2 3/8" OD
    - 2 7/8" OD
    - 3 1/2" OD
    - 4" OD
    - 4 1/2" OD
    - 5" OD
      - 19.5 lbm/ft
        - E-75
          - FH
          - HT50
          - NC50 (4 1/2 IF)
            - 10% Wear
            - Class 2
            - New
            - Premium
        - G-105
        - S-135
        - X-95
      - 25.6 lbm/ft
    - 5 1/2" OD
    - 5 7/8" OD
    - 6 5/8" OD

<No Name>
- 5" 19.50 DPE, 10% Wear
- BHA
  - Crossover
  - 5" HWDP
  - Monel 6 3/4" Collar
  - PowerPulse
  - CDR
  - Stabilizer
  - A675M4570XP
- 8 1/2 " Bit

General | More | Drill Pipe

Type: Drill Pipe — Non-Magnetic

Name: 5" 19.50 DPE, 10% Wear

Manufacturer:

Model: SN#:

Dimensions

Inner Diameter	4.276	in	Length	3050	m
Outer Diameter	4.928	in	Maximum OD	6.625	in
Tool Joint ID	3.75	in	Tool Joint OD	6.625	in

Weight

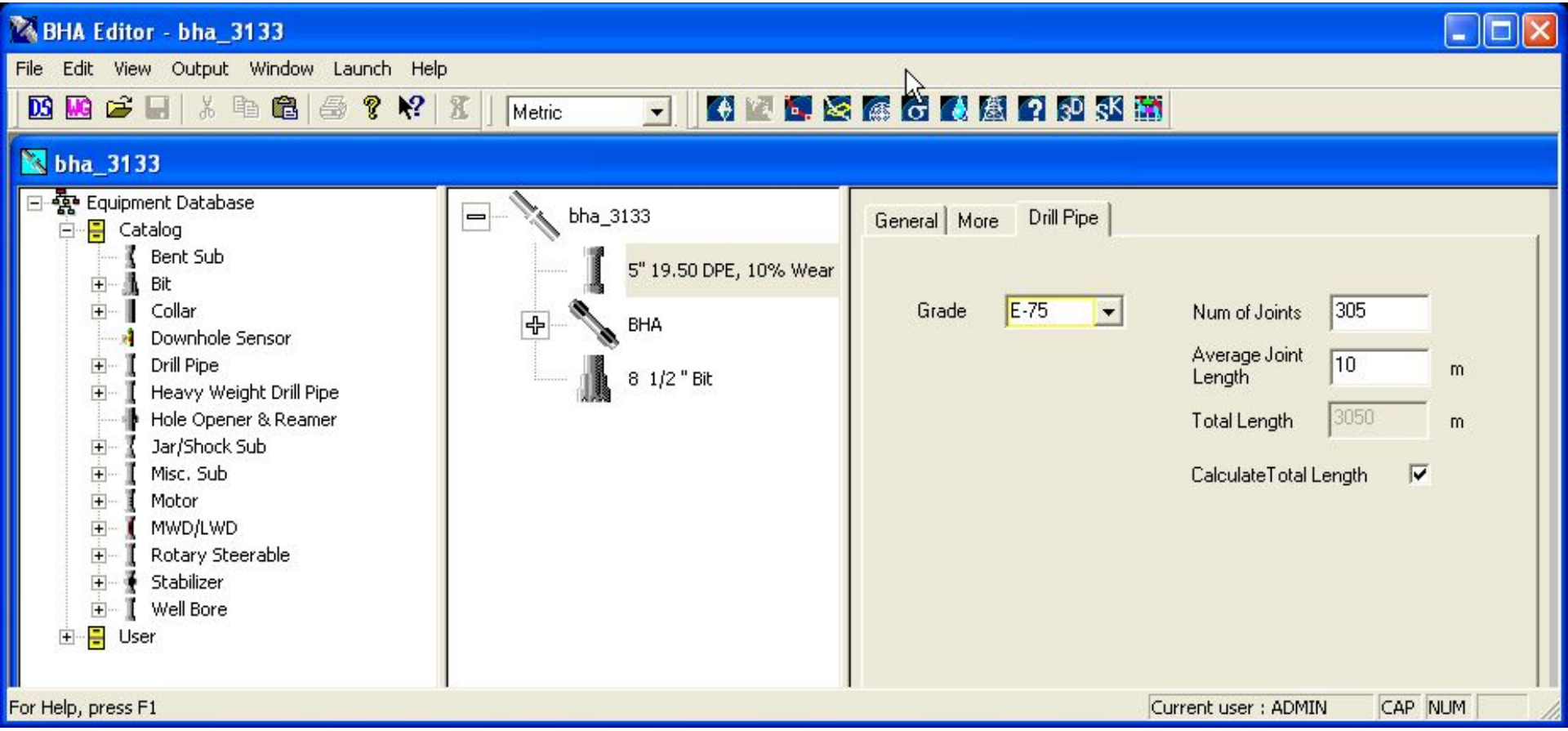
Linear	31.0877	kg/m	Total	94816	kg
Total Weight Below Item	8474.87	kg			
Total Length Below Item	84.7716	m			

Connection

	Size		Connection Type	
Top	5	in	NC50 (4 1/2 IF)	Pin / Box
Bottom	5	in	NC50 (4 1/2 IF)	Pin / Box

For Help, press F1 — Current user : ADMIN — NUM

РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ БУРИЛЬНЫХ ТРУБ В МОДУЛЕ BHA EDITOR



КОМПОНОВКА БК, СОЗДАННАЯ В МОДУЛЕ BHA EDITOR

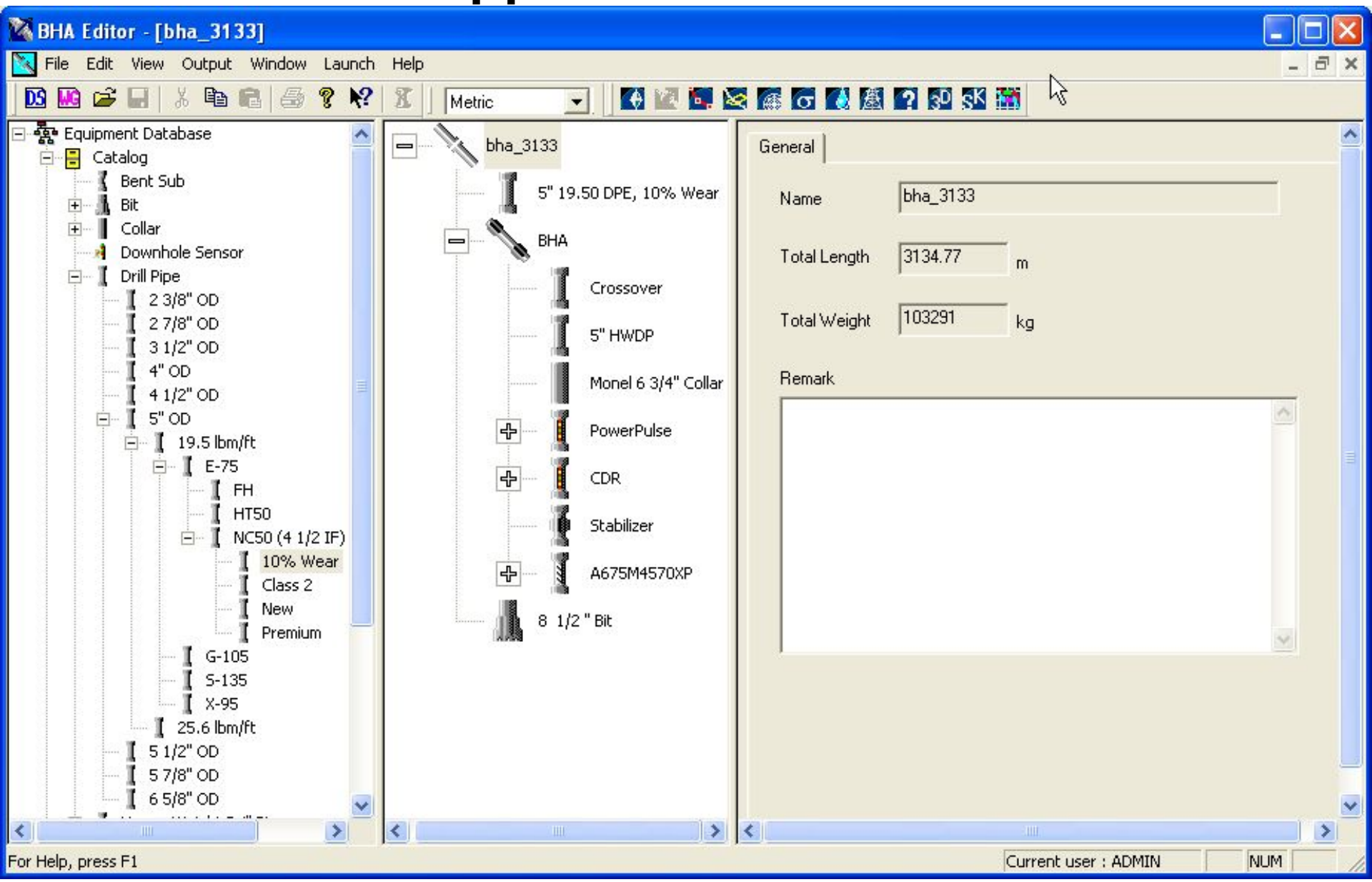


СХЕМА КОМПОНОВКИ БК, СОЗДАННАЯ В МОДУЛЕ BHA EDITOR

	Cum. Len. (m)
5" 19.50 DPE, 10% Wear (305 j	3134.77
Crossover	84.77
5" HWDP (5 joints)	83.77
Monel 6 3/4" Collar	33.77
PowerPulse	23.77
CDR	16.24
Stabilizer	9.39
A675M4570XP (0.5 deg)	8.39
8 1/2 " Bit	0.30

BNGS
1024
Sosnovaya
Malobalykscoe
B-1
bha_3133

BHA DESCRIPTION

ELEMENT	LENGTH (m)	OD (in)	ID (in)	MAX OD (in)
8 1/2 " Bit	0.30	8.50	2.25	8.50
A675M4570XP (0.5 deg)	8.08	6.75	5.50	8.38
Stabilizer	1.00	6.75	3.00	8.25
CDR	6.86	6.75	4.87	6.75
PowerPulse	7.53	6.75	5.11	6.89
Monel 6 3/4" Collar	10.00	6.75	3.00	6.75
5" HWDP (5 joints)	50.00	5.00	3.00	6.50
Crossover	1.00	6.75	2.25	6.75
5" 19.50 DPE, 10% Wear (3	3050.00	4.93	4.28	6.63

Bit to Gamma Ray Sensor = 14.4904 m
Bit to Resistivity Sensor = 11.1376 m
Bit to Direction & Inclination Sensor = 19.8488 m

DRILLING OVERVIEW

Depth in:	1598.00 m	Depth out:	3133.00 m
Inclination in:		To:	
Direction in:		To:	
Total Drilled	1535.00 m	Dogleg:	

Schlumberger

Quality Control
Created by: ADMIN Date: 2011-10-17
Checked by: Date:

ВВОД ДАННЫХ ПО ОБСАДНОЙ КОЛОННЕ В МОДУЛЕ BHA EDITOR

BHA Editor - [Wellbore Geometry]

File Edit View Output Window Launch Help

Metric

Hole Section | Error List / Inside Diameter Profile

Offshore

Air Gap: 0

From (m)	To (m)	ID (in)
0.0	0.0	Air Gap
0.0	795.9	11.626
795.9	3133.1	8.500
3133.1		

Equipment Database
- Catalog
  - Well Bore
    - Casing
      - 1 3/64"
      - 1 5/16"
      - 1 21/32"
      - 1 29/32"
      - 2 1/16"
      - 2 3/8"
      - 2 7/8"
      - 3 1/2"
      - 4"

Wellbore Geometry
- 9 5/8" Casing String
  - 9 5/8" Casing

Casing String

Name: 9 5/8" Casing String | Type: Conductor | Casing

MD Range: Top 0 m, Bottom 795.92 m

Total: Length 795.92 m, Weight 47378.4 kg

Diameters: Min Drift 8.75 in, Max OD 10.625 in

9 5/8" Casing String | 9 5/8" Casing

Name: 9 5/8" Casing | Type: Casing

Fix Top: 0 m | Adjust Above | Shift Above

Fix Length: 795.92 m

Fix Bottom: 795.92 m | Adjust Below | Shift Below

OD: 9.625 in | Max OD: 10.625 in

ID: 8.835 in | Drift: 8.75 in

Weight: Linear: 59.5266 kg/m | Total: 47378.4 kg

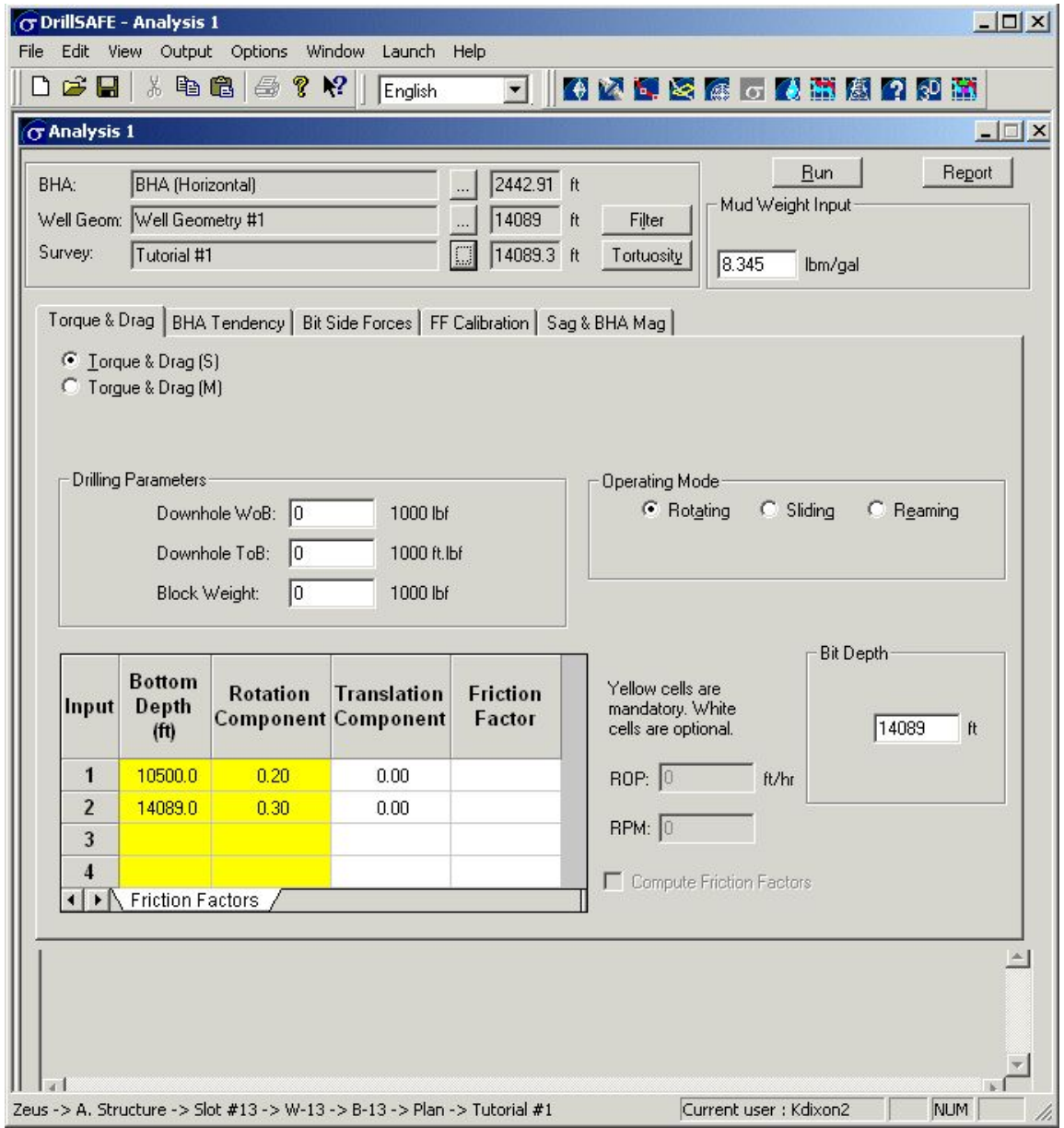
Grade: C-75 | Connection Type: BTC

Num Jts: 61 | Avg Jt Length: 13 m

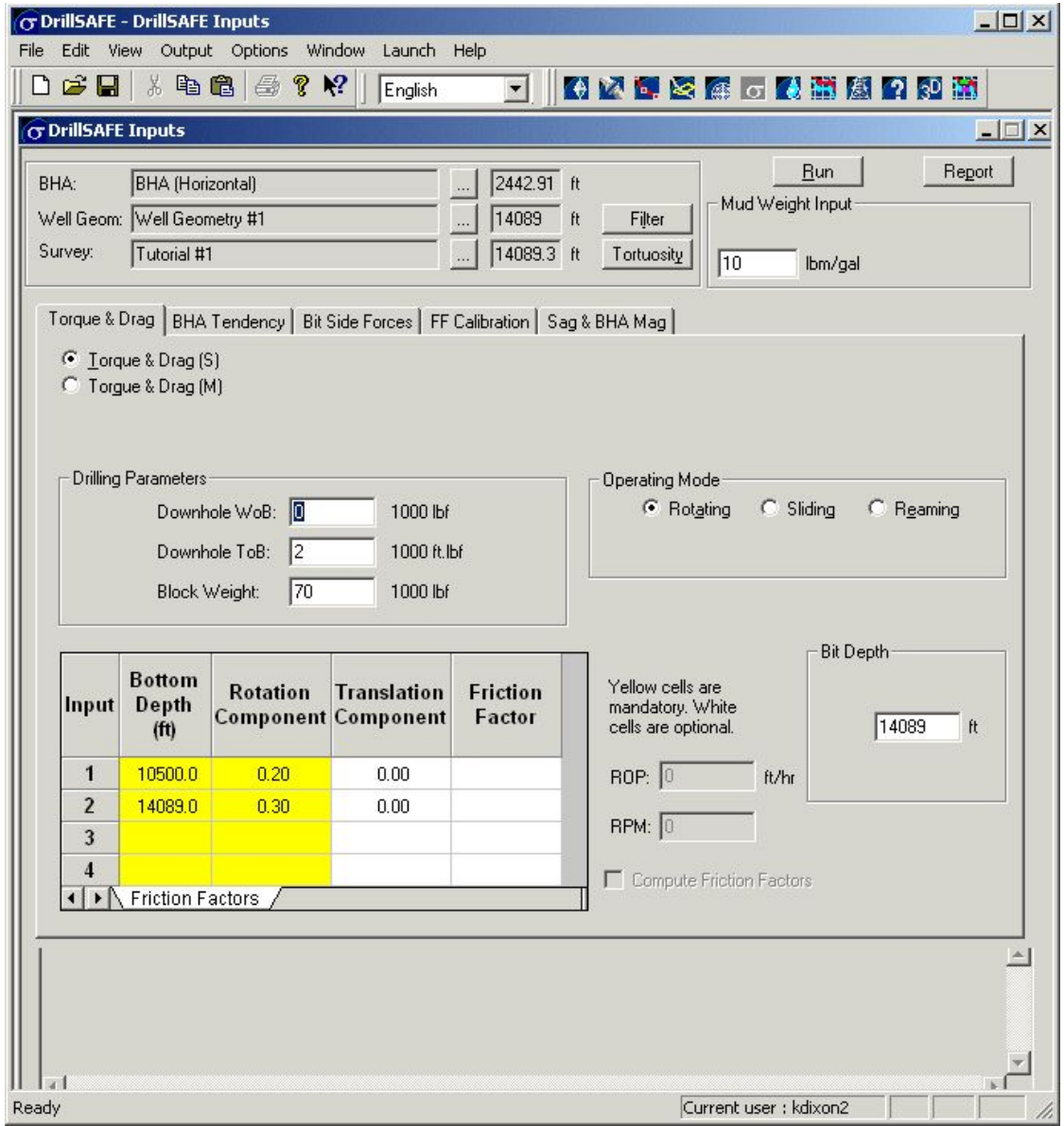
Wellbore Geometry -> 9 5/8" Casing String -> 9 5/8" Casing

Current user : ADMIN | NUM

ОКНО МОДУЛЯ DRILLSAFE ПОСЛЕ ВВОДА ДАННЫХ ПО СКВАЖИНЕ



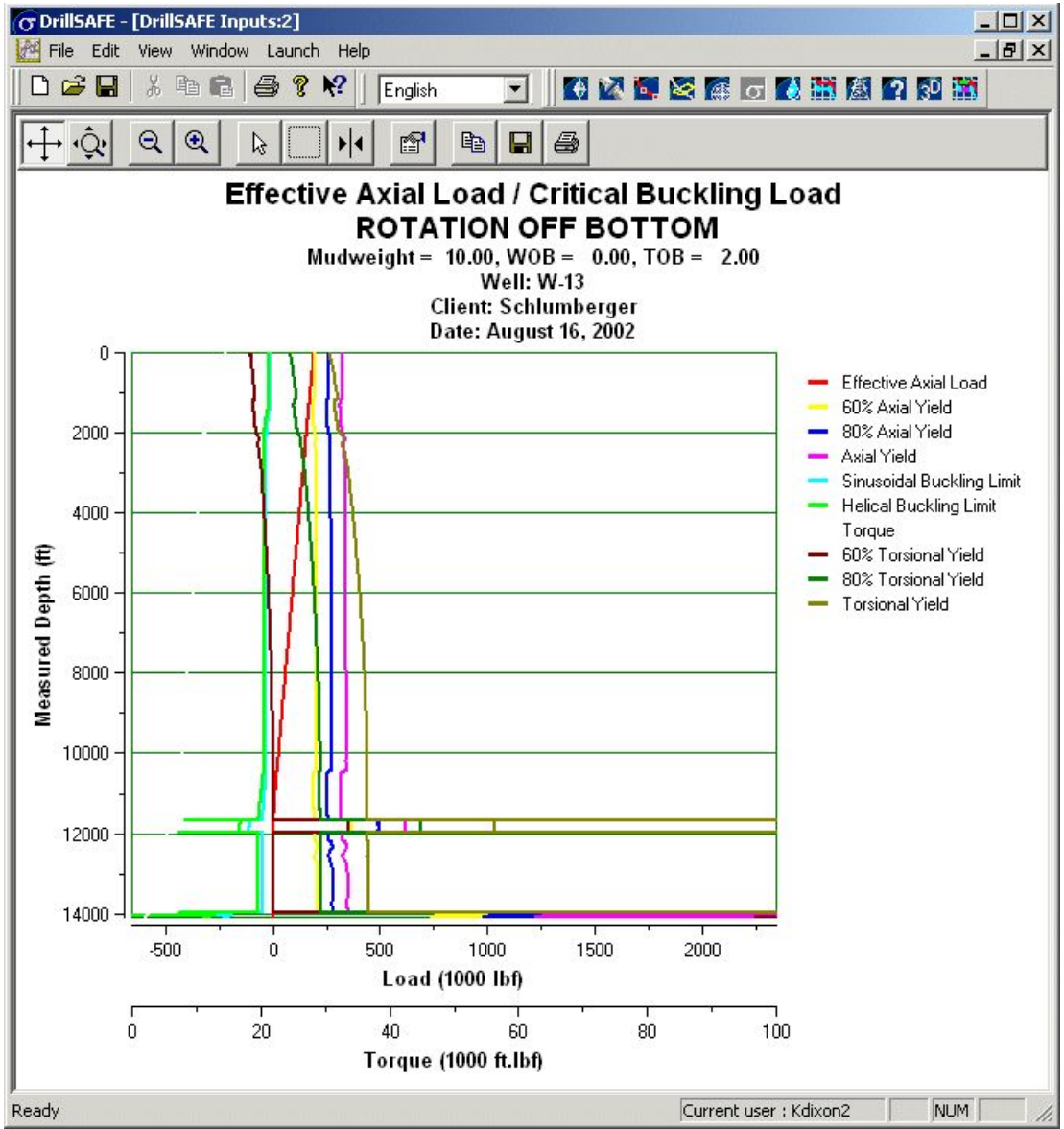
ВВОД ДАННЫХ В МОДУЛЬ DRILLSAFE ПРИ РАБОТЕ В РЕЖИМЕ SINGLE POINT



РЕЗУЛЬТАТЫ РАСЧЕТОВ МОДУЛЕМ DRILLSAFE ПРИ РАБОТЕ В РЕЖИМЕ SINGLE POINT

Running Single Point Torque and Drag Analysis...Done
Surface Torque = 14.5 1000 ft.lbf Hook Load = 262.8 1000 lbf

РЕЗУЛЬТАТЫ АНАЛИЗА ОСЕВЫХ УСИЛИЙ ПРИ ВРАЩЕНИИ НАД ЗАБОЕМ



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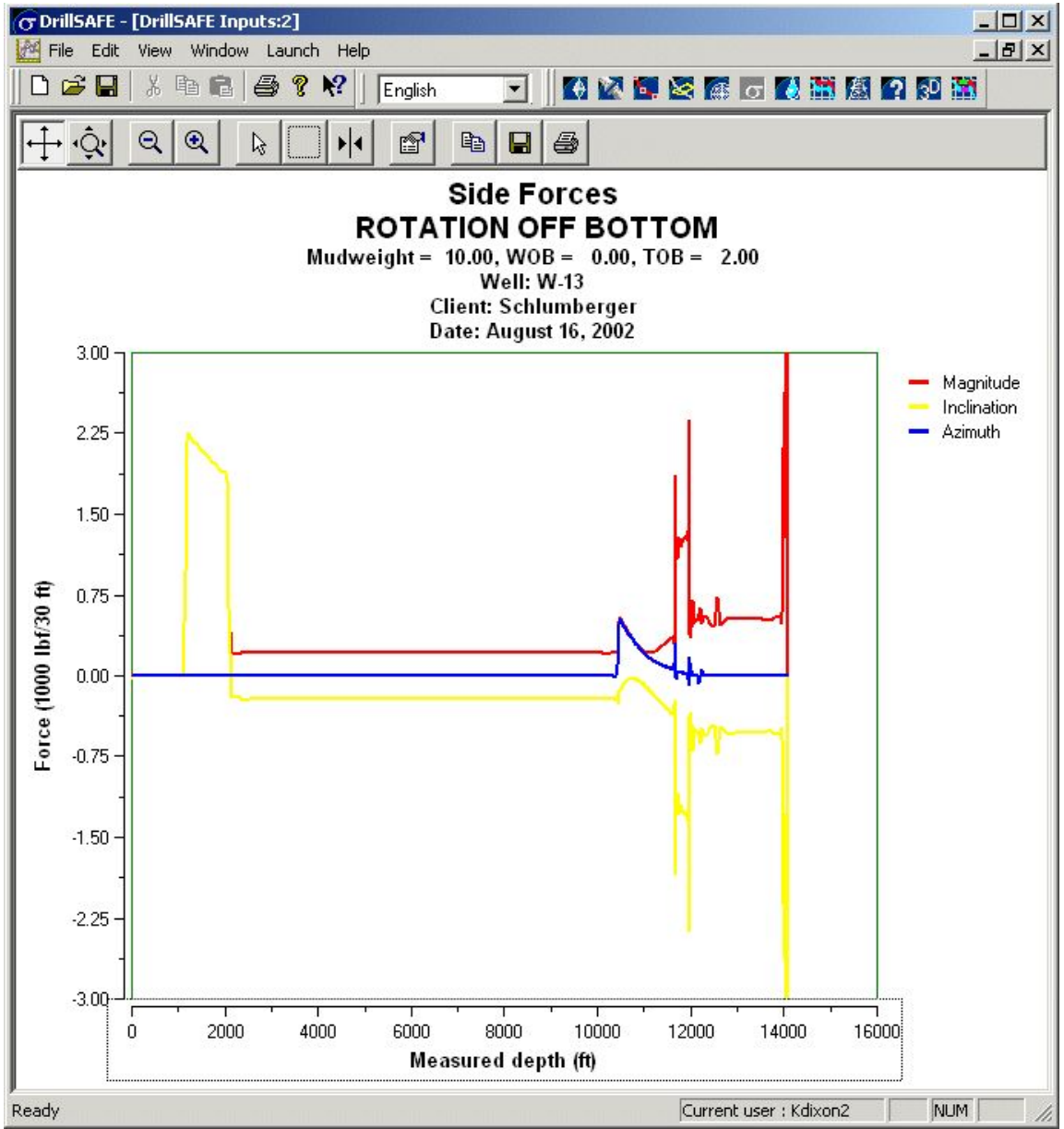
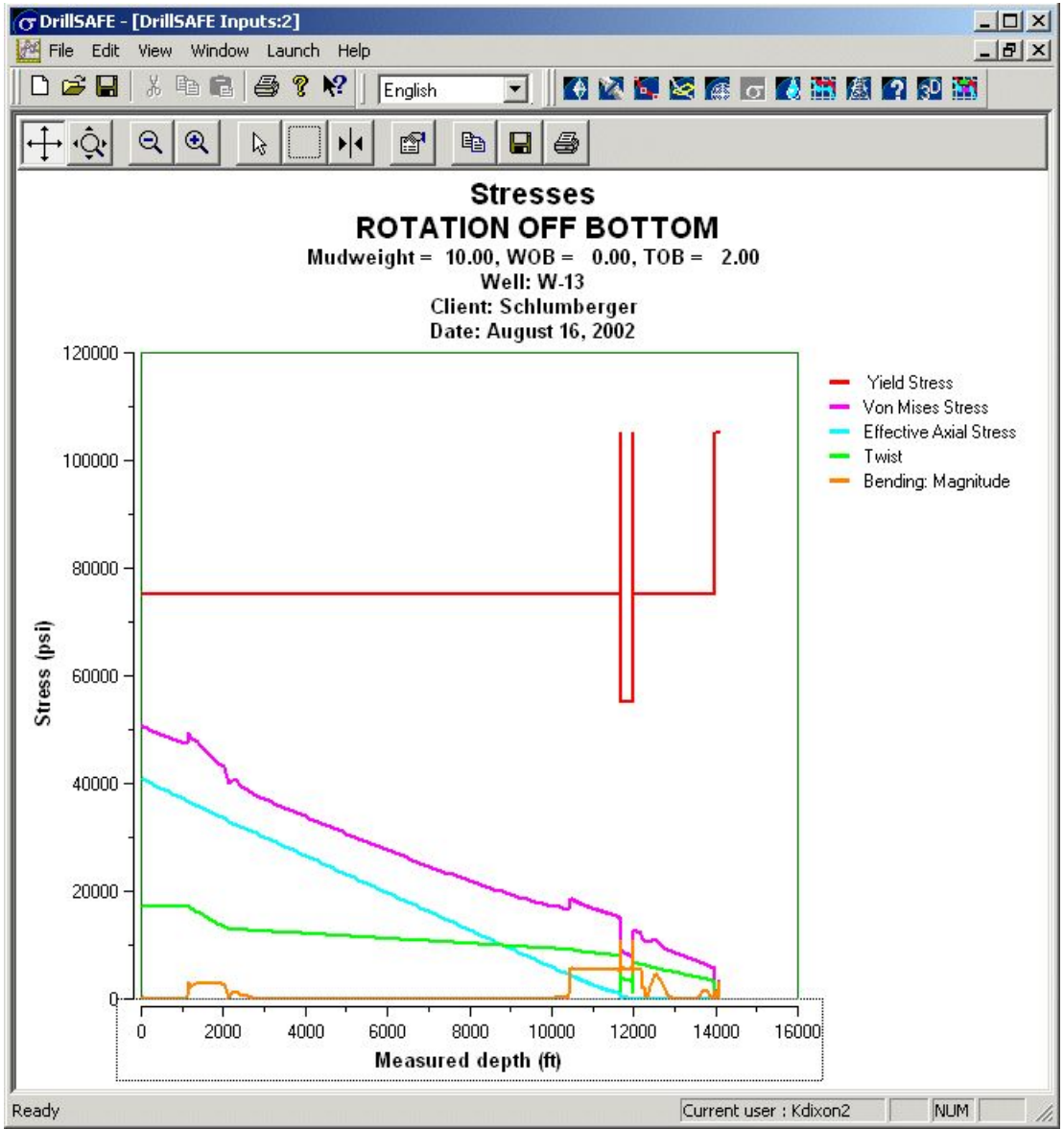
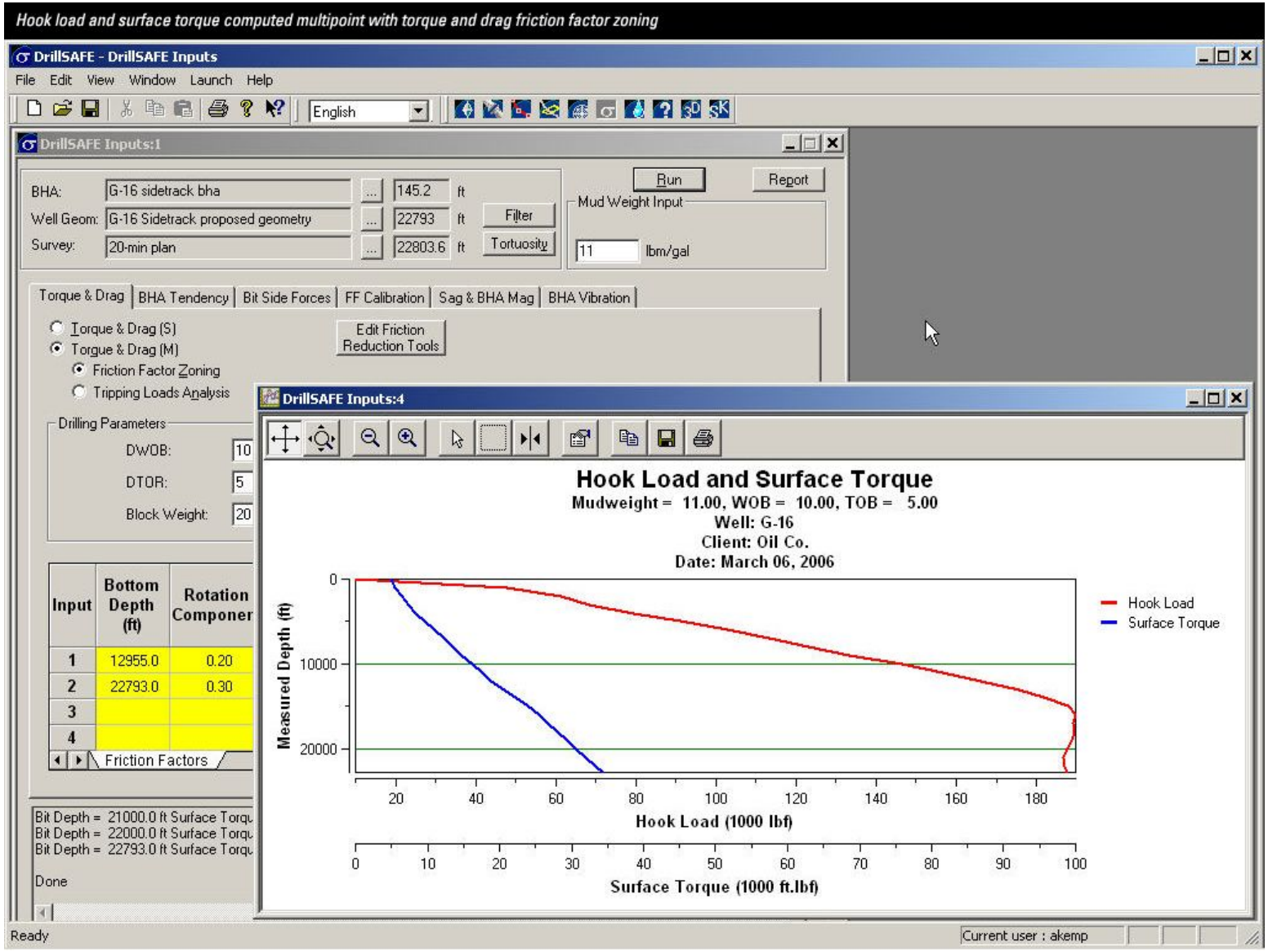


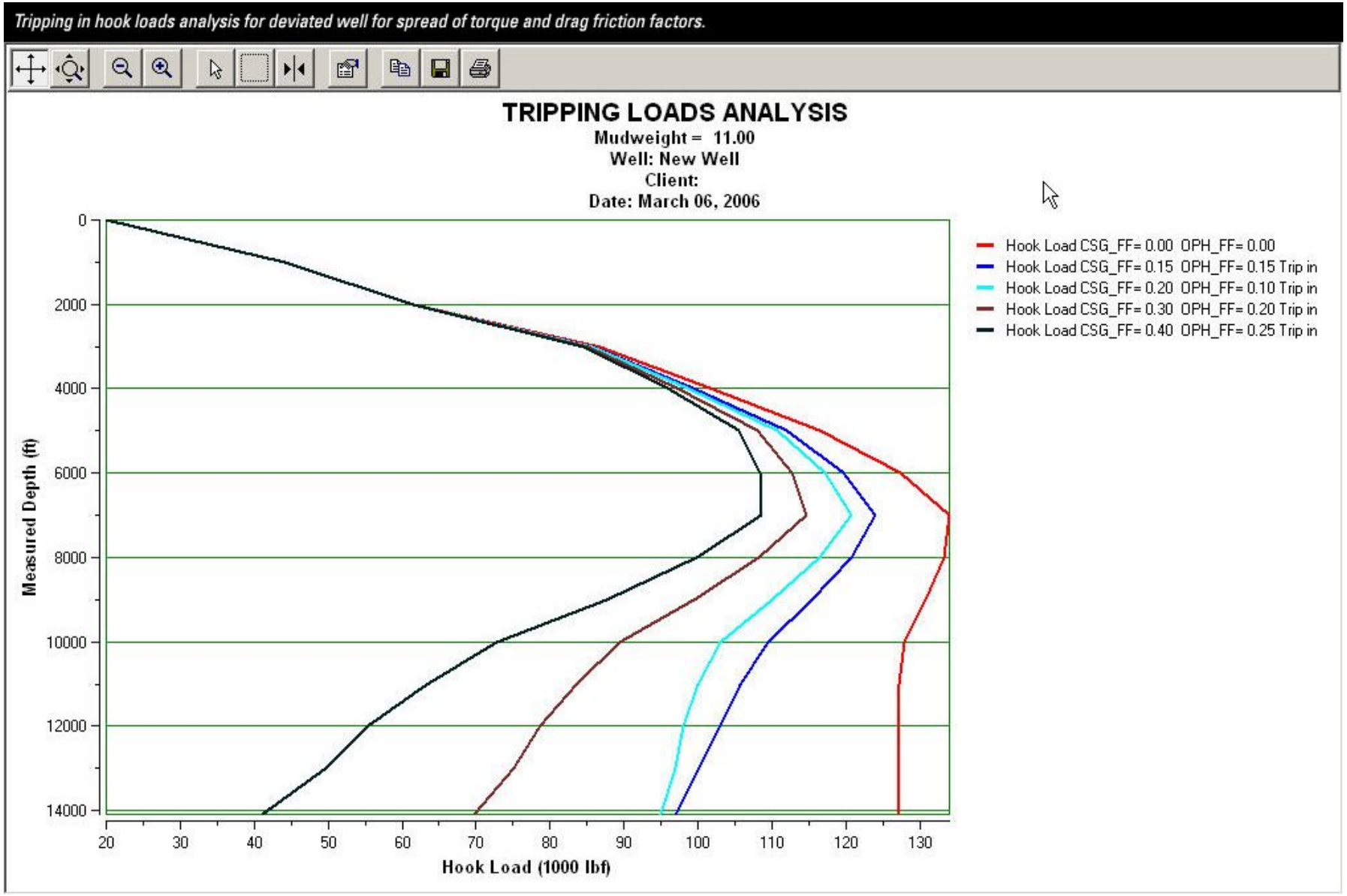
РЕЗУЛЬТАТЫ АНАЛИЗА НАПРЯЖЕНИЙ ПРИ ВРАЩЕНИИ НАД ЗАБОЕМ



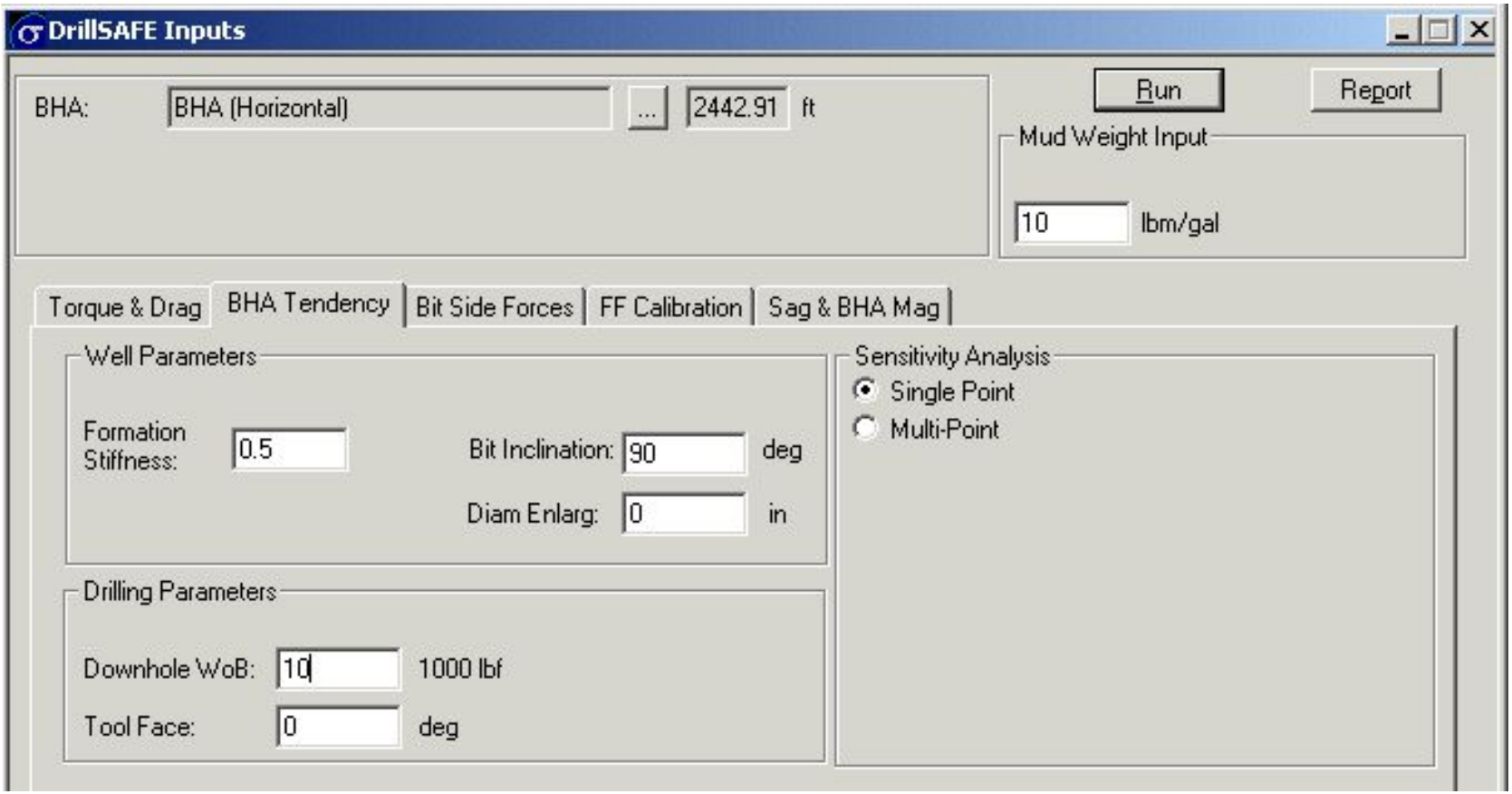
РЕЗУЛЬТАТЫ РАСЧЕТА НАГРУЗКИ НА КРЮКЕ И МОМЕНТА НА РОТОРЕ



РЕЗУЛЬТАТЫ РАСЧЕТА НАГРУЗКИ НА КРЮКЕ ПРИ ПОДЪЕМЕ



РЕЗУЛЬТАТЫ АНАЛИЗА РАБОТЫ КНБК



Rotary Build Rate = 0.214 deg/100 ft
DLS in sliding = 12.071 deg/100 ft
Effective Toolface in sliding = 0.000 deg
Build rate in sliding = 12.071 deg/100 ft
Turn rate in sliding = 0.000 deg/100 ft

УСТАНОВКА ОПЦИЙ АНАЛИЗА КРИТИЧЕСКИХ ЧАСТОТ ВРАЩЕНИЯ

Torque & Drag | BHA Tendency | Bit Side Forces | FF Calibration | Sag & BHA Mag | BHA Vibration

Forced Vibration Analysis
Free Vibration Analysis

Set / Review Boundary Conditions

Operating Mode
Rotating
Sliding

Positon Plots

Critical RPM Plots

Bit Depth: 14089 ft

BHA Length: 200 ft

Static Bit Forces

Downhole WOB: 0 1000 lbf

Excitation Sources

Bit Forces

Bit Displacements

Excitation Factor: 3

Bit Bounce

Manual Input

Calculate

Axial Displacement: 0 ft

Bit Efficiency Coefficient: 0.1

Excitation Factor: 3

Bit Axial Force: 0 1000 lbf

Bit Whirl

Bit Bending Moment: 0 1000 ft.lbf

Hole Enlargement: 0 in

Bit Torque: 0 1000 ft.lbf

Excitation Factor: 1

Other Sources

Excitation Frequency / RPM Range

Frequency Input

RPM Input

Frequency

Min: 0

Max: 10 Hz

BHA RPM

Min: 0

Max: 200

Number of Calculation Intervals: 100

Excitation Factor: 3

Dynamic Damping

Manual Input

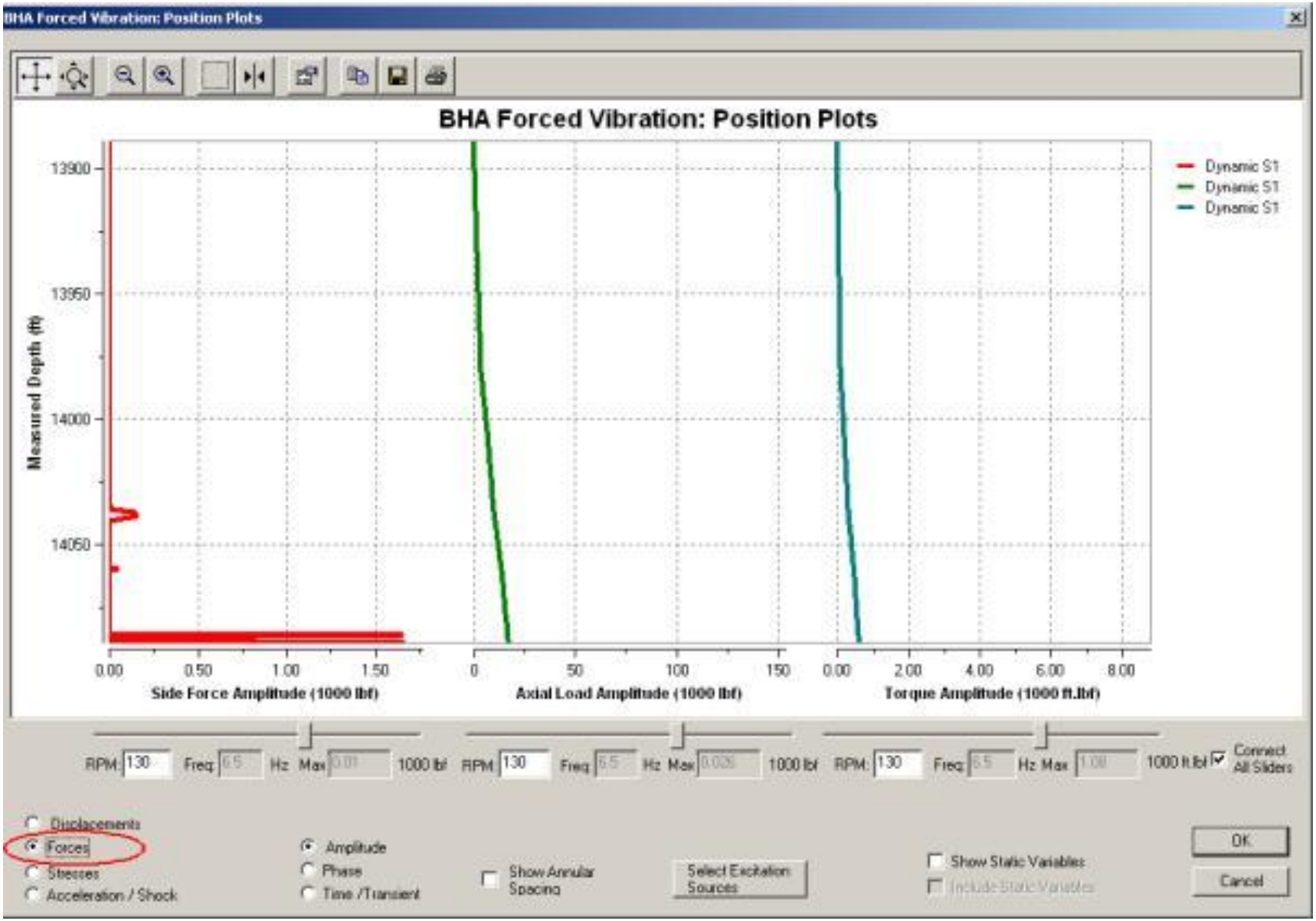
Use Default Value

Oil Based Mud

Water Based Mud

Viscous Damping Coefficient: 0.015

РЕЗУЛЬТАТЫ АНАЛИЗА УСИЛИЙ ПРИ КРИТИЧЕСКОЙ ЧАСТОТЕ



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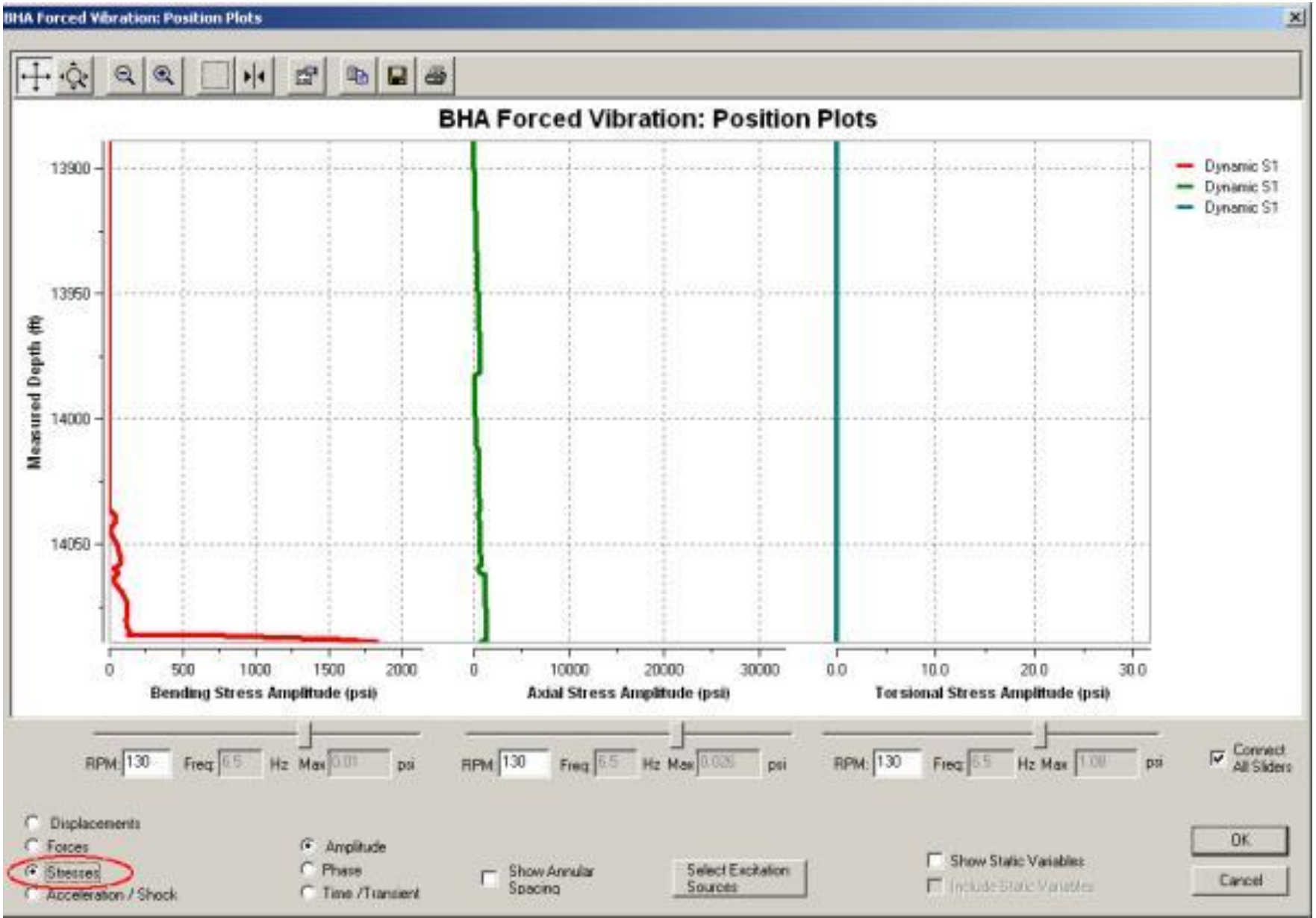

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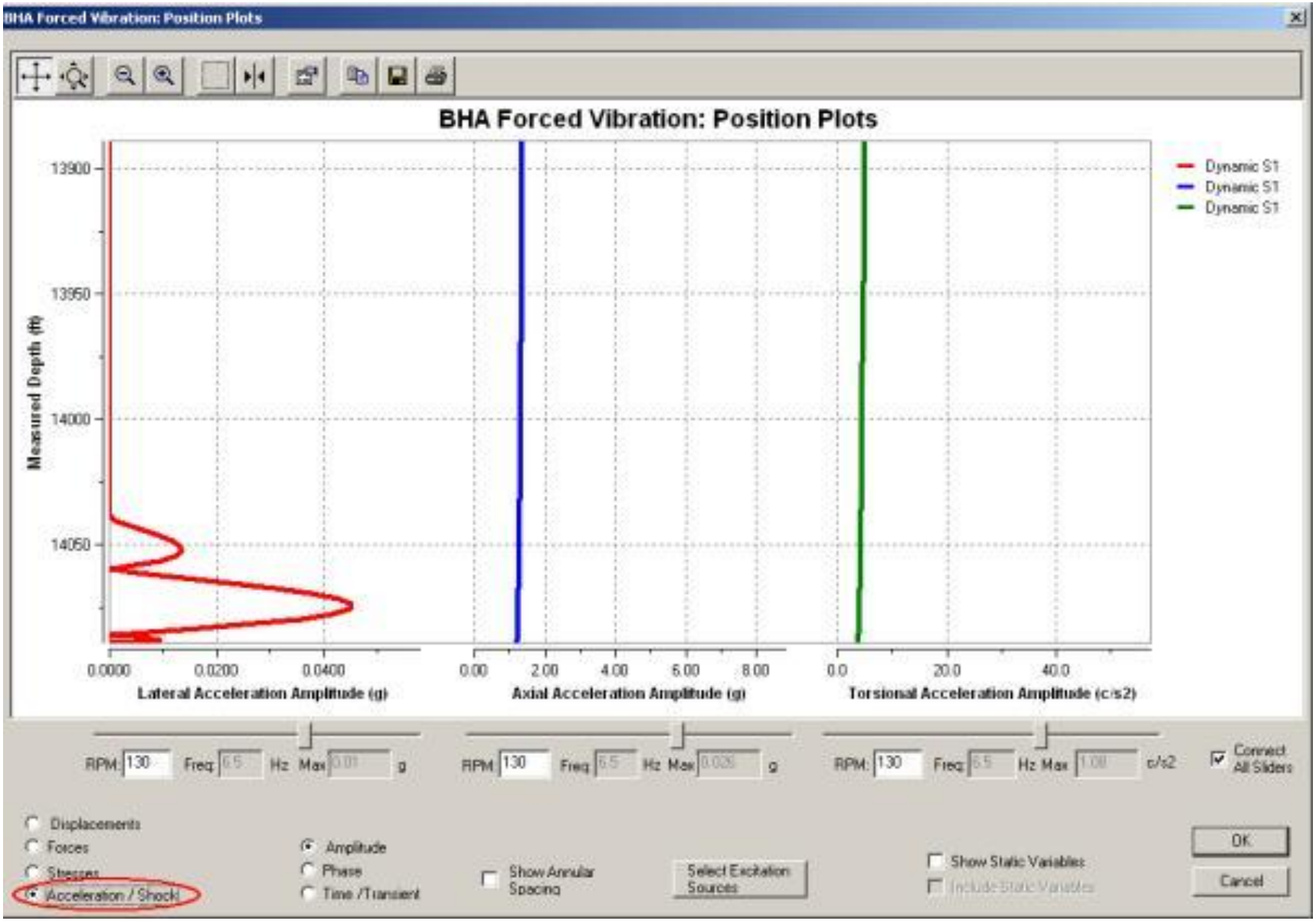
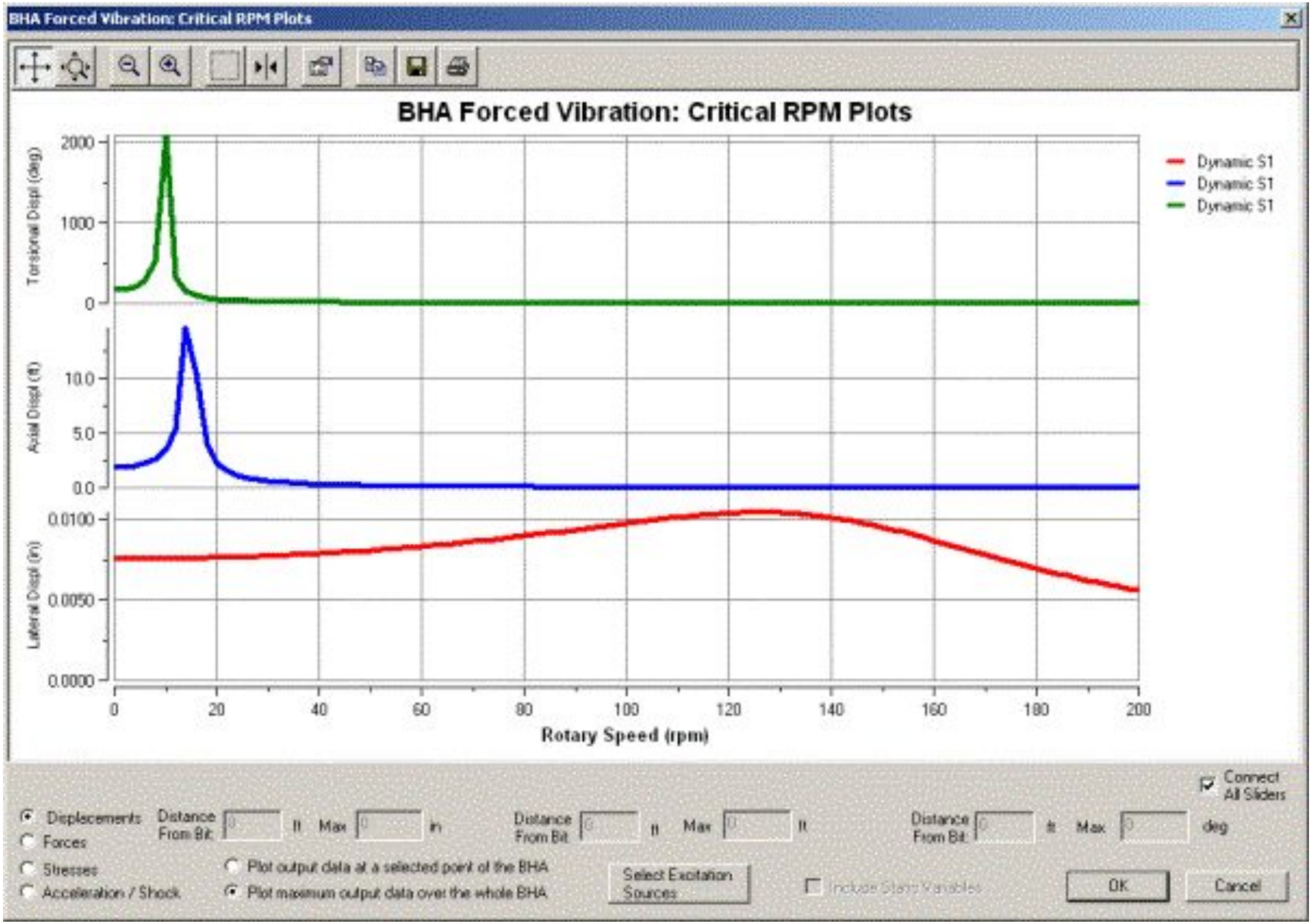
РЕЗУЛЬТАТЫ АНАЛИЗА КРИТИЧЕСКИХ ЧАСТОТ ВРАЩЕНИЯ