SCR DIVE PLANNING SHEET

DEPTH	DIVE TIME (A)	RUNTIME	BAR (B)	GAS MIX	FO_2	SCR FLOW RATE (C)	SCR LITERS REQUIRED (A*C)	PPO_2	NOAA SINGLE DIVE LIMIT	% OF SINGLE DIVE LIMIT	NOAA DAILY DIVE LIMIT	% OF DAILY DIVE LIMIT	OTU/ MINUTE	OTU TOTAL
GAS	LITERS	*	1.5	=	TOTAL REQUIRED				% SINGLE LIMIT		% DAILY LIMIT		TOTAL OTU	
		*		=										
		*		=										

BAILOUT GAS DIVE PLAN

DEPTH	DIVE TIME (A)	RUNTIME	BAR (B)	GAS MIX	FO_2	SCR FLOW RATE (C)	SCR LITERS REQUIRED (A*C)	BAILOUT SAC (D)	OC LITERS REQUIRED (A*B*D)	PPO_2	NOAA SINGLE DIVE LIMIT	% OF SINGLE DIVE LIMIT	NOAA DAILY DIVE LIMIT	% OF DAILY DIVE LIMIT	OTU/ MINUTE	OTU TOTAL
GAS	LITERS	*	1.5	=	TOTAL REQUIRED						% SINGLE LIMIT		% DAILY LIMIT		TOTAL OTU	
		*		=												
		*		=												

FORMULAS

Bar = (Depth in msw/10) + 1

Partial pressure of oxygen (ppO_2) = FO_2 * Bar

Fraction of oxygen (FO_2) = ppO_2 / Bar

Ascent Depth Formula

Ascent Depth = [(MD - D_1) / 2] + D_1

MD = Maximum depth

D_1 - Depth of the first decompression stop

Loop Fraction of Oxygen

Loop FO_2 = [(Flow rate * Cylinder FO_2) - VO_2]/Flow rate - VO_2)

Cylinder FO_2 = Cylinder fraction of oxygen

VO_2 = Metabolic rate

Flow Rate

Flow rate = VO_2 * [(1- Loop FO_2) / (Cylinder FO_2 - Loop FO_2)]

SAC Rate

$$\frac{(BAR_B - BAR_E) * C / P}{\text{Minutes}}$$

B = Beginning pressure

E = Ending pressure

C = Rated cylinder capacity (liters)

P = Pressure at depth (bar)

Equivalent Air Depth

From a known depth:

EAD = [(1 - FO_2) * (D + 10) / 0.79} - 10

From a known EAD:

D = [0.79 * (EAD + 10) / (1 - FO_2)] - 10

D = Depth

EAD = Equivalent Air Depth

FO_2 - Loop fraction of oxygen

CNS Exposure

% Single Dive Limit

(Time / Single dive limit) * 100

% Daily Dive Limit

(Time / Daily dive limit) * 100

OTU CALCULATION TABLE

ppO_2 (BAR)	OTU/Minute
.5	0
.6	0.27
.7	0.47
.8	0.65
.9	0.83
1.0	1.0
1.1	1.16
1.2	1.32
1.3	1.48
1.4	1.63
1.5	1.78
1.6	1.92
1.7	2.07
1.8	2.21
1.9	2.35
2	2.49

NOAA CNS LIMITS (MIN.)

ppO_2	Single	24-Hour
0.6	720	720
0.7	570	570
0.8	450	450
0.9	360	360
1.0	300	300
1.1	240	270
1.2	210	240
1.3	180	210
1.4	150	180
1.5	120	180
1.6	45	150