APPENDIX A-1

Draft General Permit Appendix and Tables

Appendix A

Table 1: Produced Water Critical Dilutions

Discharge Rate Up To bbl/day-m3/s (MGD)	Water Depth (meters)- Distance Between Pipe And Seafloor						
	0-4	4-6	6-9	9-12	12-14	14-16	> 16
500 - 0.00092 (0.021)	0.33	0.2	0.15	0.15	0.15	0.15	0.15
1000 – 0.0018 (0.042)	0.7	0.4	0.22	0.22	0.22	0.22	0.22
2000 – 0.0037 (0.084)	1.3	0.8	0.54	0.31	0.31	0.31	0.31
3000 – 0.0055 (0.126)	1.9	1.1	0.73	0.38	0.38	0.38	0.38
4000 – 0.0074 (0.168)	2.4	1.3	0.91	0.6	0.44	0.44	0.44
5000 – 0.0092 (0.210)	2.8	1.6	1.1	0.8	0.49	0.49	0.49
6000 – 0.011 (0.252)	3.2	1.8	1.2	0.9	0.54	0.54	0.54
7000 – 0.0129 (0.294)	3.6	2	1.3	1	0.58	0.58	0.58
8000 – 0.0147 (0.346)	3.9	2.2	1.5	1.1	0.71	0.62	0.6
9000 – 0.0166 (0.378)	4.3	2.4	1.6	1.2	0.83	0.65	0.63
10,000 – 0.0184 (0.420)	4.6	2.6	1.7	1.3	0.93	0.68	0.66
15,000 – 0.0276 (0.630)	5.9	3.3	2.2	1.4	1.3	1	0.78
20,000 – 0.0368 (0.840)	7.1	3.9	2.6	1.7	1.6	1.3	0.88
25,000 – 0.046 (1.050)	7.8	4.2	2.9	1.9	1.8	1.6	0.96

1 bbl = 42 gallons

Table 2: Minimum Vertical Port Separation Distance to Avoid Interference

Port Flow Rate (bbl/day)	Minimum Separation Distance (m)
0 - 500 (0.021 MGD)	3.2
501 - 1000 (0.042 MGD)	4.0
1001 - 2000 (0.084 MGD)	5.0
2001 - 3000 (0.126 MGD)	5.8
3001 - 4000 (0.168 MGD)	6.4
4001 – 5000 (0.210 MGD)	6.8

Table 3-A: Critical Dilutions (Percent Effluent) for Toxicity Limitations for Seawater to which Treatment Chemicals have been Added

Depth Difference (Meters)	**Discharge Rate bbl/day (MGD)**	**Pipe Diameter**		
		>0" to 2"	>2" to 4"	>4"
All	0 to 1,000 (0-0.042)	3.1	10.5	26.7
	>1,000 to 10,000 (>0.042-0.420)	2.1	8.0	16.5
	> 10,000 (> 0.420)	2.1	7.0	13.3

Table 3-B: Critical Dilutions (Percent Effluent) for Toxicity Limitations for Freshwater to which Treatment Chemicals have been Added

Depth Difference (Meters)	Discharge Rate (bbl/day)	Pipe Diameter		
		>0" to 2"	>2" to 4"	>4"
All	0 to 1,000 (0-0.042)	5.1	29.0	32.5
	>1,000 to 10,000 (>0.042-0.420)	2.8	15.4	37.4
	> 10,000 (> 0.420)	2.5	12.0	27.8

Table 4. Effluent Limitations, Prohibitions and Monitoring Requirements

Discharge	Regulated & Monitored Discharged Parameter	Discharge Limitation/ Prohibition	Measurement Frequency	Monitoring Requirement: Sample Type/Method	Monitoring Requirement: Recorded Value(s)
Drilling Fluid		No Discharge			
Drill Cuttings		No Discharge			
Deck Drainage	Free Oil	No free oil	Once/day(*2)	Visual sheen	Number of days sheen observed
Produced Water (or Hydrate Control Fluid) (*11)	Oil and grease	42 mg/l daily max., 29 mg/l monthly average	Once/month	Grab(*3)	Daily max., monthly average
	Toxicity	7-day min. NOEC(*10) and monthly average min. NOEC(*9)	Once/Six Months.	Grab	Lowest NOEC for either of the two species
				Grab	Lowest NOEC for either of the two species
		24-hour LC50 at 100% effluent	Once/Six Months		
	Flow (MGD).....	Monitor.....	Once/month	Estimate.....	Monthly Average
Produced Sand		No Discharge			
Well treatment fluids(*4), completion fluids(*4), and workover fluids(*4) (includes packer fluids)	Free oil.....	No free oil.....	Once/day(*1)	Static sheen	Number of days sheen observed
	Oil & Grease.....	42 mg/l daily max., 29 mg/l monthly avg.	Once/month	Grab(*3)	Daily max., monthly average
Sanitary waste(*6) continuously manned by 10 or more persons	Residual chlorine(*7)	1 mg/l (minimum)	Once/month	Grab	Concentration
	Solids	No Floating Solids....	Once/day	Observation.....	Number of days solids observed
Sanitary waste(*6) continuously manned by 9 or fewer persons or intermittently by any number	Solids	No floating solids....	Once/day	Observation.....	Number of days solids observed
Domestic waste(*8)	Solids	No floating solids.... or foam	Once/day	Observation(*8)	Number of days observed

Table 4. (Continued)

Discharge	Regulated & Monitored Discharged Parameter	Discharge Limitation/ Prohibition	Monitoring Requirement: Measurement Frequency	Monitoring Requirement: Sample Type/Method	Monitoring Requirement: Recorded Value(s)
Miscellaneous discharges: Desalinization unit discharge; blowout preventer fluid; uncontaminated ballast water; uncontaminated bilge water; uncontaminated freshwater; mud, cuttings and cement at seafloor; uncontaminated seawater; boiler blowdown; source water and sand; diatomaceous earth filter media; excess cement slurry	Free oil.....	No free oil	Once/week (*5)	Visual sheen	Number of days sheen observed
Miscellaneous discharges of seawater and freshwater to which treatment chemicals have been added: excess seawater which permits the continuous operation of fire control and utility lift pumps, excess seawater from pressure maintenance and secondary recovery projects, water released during training of personnel in fire protection, seawater used to pressure test piping, ballast water, non-contact cooling water, desalinization unit discharge	Treatment chemicals	Most stringent of: EPA label registration, maximum manufacturers recommended dose, or 500 mg/l.			
	Free oil.....	No free oil.....	1/week.....	Visual sheen.....	Number of days sheen observed
	Toxicity.....	48-hour min. NOEC and monthly average minimum NOEC (*10)	Once per six months..	Grab.....	Lowest NOEC observed for either of the two species

Footnotes

*1 When discharging.

*2 When discharging and facility is manned. Monitoring shall be accomplished during times when observation of a visual sheen on the surface of the receiving water is possible in the vicinity of the discharge.

*3 May be based on a single grab sample or the arithmetic average of four grab sample results collected in the 24 hr. period.

*4 No discharge of priority pollutants except in trace amounts. Information on the specific chemical composition shall be recorded but not reported unless requested by EPA.

*5 When discharging for cement at the seafloor and blowout preventer fluid. All other miscellaneous discharges: when discharging, discharge is authorized only during times when visual sheen observation is possible, unless the static sheen method is used. Uncontaminated seawater uncontaminated freshwater, source water and source sand, uncontaminated bilge water, and uncontaminated ballast water from platforms on automatic purge systems may be discharged without monitoring from platforms which are not manned.

*6 Any facility which properly operates and maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under section 312 of the Act shall be deemed to be in compliance with permit limitations for sanitary waste. The MSD shall be tested yearly for proper operation, and test results maintained at the facility.

*7 Hach method CN-66 DPD approved. Minimum of 1 mg/l and maintained as close to this concentration as possible.

*8 Monitoring shall be accomplished during daylight by visual observation of the surface of the receiving water in the vicinity of sanitary and domestic waste outfalls. Observations shall be made following either the morning or midday meals at a time of maximum estimated discharge.

*9 See Table 1, Appendix A.

*10 See Table 3A or 3B, Appendix A.

*11 If hydrate control fluids are not discharged with produced water, all limitations and monitoring requirements established for produced water discharge apply to hydrate control fluids.