Closed Cycle Cooling

YEAR	Level of Effort for Permit Writer	Annual FTE"s (hours) *	% time on MS permit
2020	med	1800	25
2021	med	1800	25
2022	med	1800	25
2023	med	1800	25
2024	med	1800	25
2025	med	1800	25
2026	med	1800	25
2027	med	1800	25
2028	high	1800	50
2029	med	1800	25
2030	low	1800	5
2031	low	1800	5
2032	low	1800	5
2033	med	1800	25
2034	low	1800	5
2035	low	1800	5
2036	low	1800	5
2037	low	1800	5
2038	med	1800	25
2039	low	1800	5
2040	low	1800	5
2041	low	1800	5
2042	low	1800	5
2043	med	1800	25
2044	low	1800	5
2045	low	1800	5
2046	low	1800	5
2047	low	1800	5
2048	med	1800	25
2049	low	1800	5
2050	low	1800	5
2051	low	1800	5
2052	low	1800	5
2053	med	1800	25
2054	low	1800	5
2055	low	1800	5
2056	low	1800	5
2057	low	1800	5

2058	med	1800	25
2059	low	1800	5
2060	low	1800	5

Assumptions: Current permit issued in 2018 with closed cycle cooling requirements. In ten years (2028), and every 5 year
(* note: annual FTE hours (1800) is total hours minus five weeks vacation/SL and 10 holidays)

PERMIT WRITER

% time on 316(b)
5%
5%
5%
5%
5%
5%
5%
5%
10%
5%
1%
1%
1%
5%
1%
1%
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5%
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1%
1%
1%
1%
5%
1%
1%
1%
1%
5%
1%
1%
1%
1%

5%
1%
1%

SUM =

s after that, another permit is issued.

	BIOLOGIST			LEGAL			MANAGEMENT		
FTE's on 316(b)	% time on MS permit	% time on 316(b)	FTE's on 316(b)	% timeon MS permit	% time on 316(b)	FTE's on 316(b)	% time on MS permit	% time on 316(b)	FTE's on 316(b)
90	1	0%	0	5	1%	18	0	0%	0
90	1	0%	0	5	1%	18	0	0%	0
90	1	0%	0	5	1%	18	0	0%	0
90	1	0%	0	5	1%	18	0	0%	0
90	1	0%	0	5	1%	18	0	0%	0
90	1	0%	0	5	1%	18	0	0%	0
90	1	0%	0	5	1%	18	0	0%	0
90	1	0%	0	5	1%	18	0	0%	0
180	10	2%	36	50	5%	90	1	0.5%	9
90	5	1%	18	5	1%	18	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0

90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
1980			162			360			63

2565 hours total for closed cycle cooling

Wedgewire Screens

YEAR	Level of Effort for Permit Writer	Annual FTE"s (yhours)	% time on MS permit
2020	med	1800	25
2021	med	1800	25
2022	med	1800	25
2023	low	1800	5
2024	low	1800	5
2025	low	1800	5
2026	low	1800	5
2027	low	1800	5
2028	high	1800	50
2029	med	1800	25
2030	low	1800	5
2031	low	1800	5
2032	low	1800	5
2033	med	1800	25
2034	low	1800	5
2035	low	1800	5
2036	low	1800	5
2037	low	1800	5
2038	med	1800	25
2039	low	1800	5
2040	low	1800	5
2041	low	1800	5
2042	low	1800	5
2043	med	1800	25
2044	low	1800	5
2045	low	1800	5
2046	low	1800	5
2047	low	1800	5
2048	med	1800	25
2049	low	1800	5
2050	low	1800	5
2051	low	1800	5
2052	low	1800	5
2053	med	1800	25
2054	low	1800	5
2055	low	1800	5
2056	low	1800	5
2057	low	1800	5

2058	med	1800	25
2059	low	1800	5
2060	low	1800	5

Assumptions: Current permit issued in 2018 with no wedgewire screen requirements. In ten years (2028), and every five

PERMIT WRITER

% time on 316(b)
5%
5%
5%
1%
1%
1%
1%
1%
20%
5%
1%
1%
1%
5%
1%
1%
1%
1%
5%
1%
1%
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5%
1%
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1%
1%
5%
1%
1%
1%
1%
5%
1%
1%
1%
1%

5%
1%
1%

SUM =

years after that, another permit is issued.

	BIOLOGIST			LEGAL			MANAGEMENT		
FTE's on 316(b)	% time on MS permit	% time on 316(b)	FTE's on 316(b)	% time on MS permit	% time on 316(b)	FTE's on 316(b)	% time on MS permit	% time on 316(b)	FTE's on 316(b)
90	5	1%	18	1	0%	0	0	0%	0
90	5	1%	18	1	0%	0	0	0%	0
90	5	1%	18	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
360	50	20%	360	50	10%	180	2	1%	18
90	25	5%	90	20	5%	90	2	1%	18
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0

90	5	1%	18	5	1%	18	1	0.5%	9
18	1	0%	0	1	0%	0	0	0%	0
18	1	0%	0	1	0%	0	0	0%	0
1800			612			378			90

2880 hours total for wedgewire screens

No Initial Technology Chosen

YEAR	Level of Effort for Permit Writer	Annual FTE"s (hours)	% time on MS permit	% time on 316(b)
2020	low	1800	5	1%
2021	low	1800	5	1%
2022	med	1800	25	5%
2023	high	1800	50	25%
2024	high	1800	50	25%
2025	med	1800	25	10%
2026	low	1800	5	1%
2027	low	1800	5	1%
2028	low	1800	5	1%
2029	low	1800	5	1%
2030	med	1800	25	5%
2031	low	1800	5	1%
2032	low	1800	5	1%
2033	low	1800	5	1%
2034	low	1800	5	1%
2035	med	1800	25	5%
2036	low	1800	5	1%
2037	low	1800	5	1%
2038	low	1800	5	1%
2039	low	1800	5	1%
2040	med	1800	25	5%
2041	low	1800	5	1%
2042	low	1800	5	1%
2043	low	1800	5	1%
2044	low	1800	5	1%
2045	med	1800	25	5%
2046	low	1800	5	1%
2047	low	1800	5	1%
2048	low	1800	5	1%
2049	low	1800	5	1%
2050	med	1800	25	5%
2051	low	1800	5	1%
2052	low	1800	5	1%
2053	low	1800	5	1%
2054	low	1800	5	1%
2055	med	1800	25	5%
2056	low	1800	5	1%
2057	low	1800	5	1%
2058	low	1800	5	1%

2059	low	1800	5	1%
2060	med	1800	25	5%

SUM =

Assumptions: Current permit issued in 2018 with no technology requirements. In five years (2023), another permit, inclu

PERMIT WRITER

FTE's on 316(b)
18
18
90
450
450
180
18
18
18
18
90
18
18
18
18
90
18
18
18
18
90
18
18
18
18
90
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90
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18
18
90
18
18
18

18
90

2340

ding BTA determination is drafted and takes a couple years to issue.

BIOLOGIST			LEGAL			MANAGEMENT		
% time on MS permit	% time on 316(b)	FTE's on 316(b)	% time on MS permit	% time on 316(b)	FTE's on 316(b)	% time on MS permit	% time on 316(b)	FTE's on 316(b)
5	1%	18	5	1%	18	0	0%	0
5	1%	18	5	1%	18	0	0%	0
5	1%	18	5	1%	18	0	0%	0
50	10%	180	50	10%	180	10	3%	54
50	10%	180	50	20%	360	10	3%	54
20	10%	180	50	10%	180	3	0.5%	9
5	1%	18	0	0%	0	0	0%	0
5	1%	18	0	0%	0	0	0%	0
5	1%	18	0	0%	0	0	0%	0
5	1%	18	0	0%	0	0	0%	0
20	5%	90	5	1%	18	1	0.5%	9
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	1%	18	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
5	1%	18	5	1%	18	1	0.5%	9
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
5	1%	18	5	1%	18	1	0.5%	9
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
5	1%	18	5	1%	18	1	0.5%	9
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
5	1%	18	5	1%	18	1	0.5%	9
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
5	1%	18	5	1%	18	1	0.5%	9
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0
1	0%	0	0	0%	0	0	0%	0

1	0%	0	0	0%	0	0	0%	0	
5	1%	18	5	1%	18	1	0.5%	9	
		882			900			180	4302

hours total for no initial technology