Table 2. NMED's nutrient thresholds^ for wadeable, perennial streams (mg/L)

	21- Southern Rockies		20/22- AZ/NM Plateau**		23- AZ/NM Mountains		24/79- Chihuahuan Desert**	25/26- Southwestern Tablelands		
ALU* →	CW	T/WW (volcanic***)	CW	T/WW	CW	T/WW	T/WW	CW	T	WW
TN	0.25	0.25	0.28	0.48	0.25	0.29	0.53	0.25	0.38	0.45
TP	0.02	0.02 (0.05)	0.04	0.09	0.02	0.05	0.04	0.02	0.03	0.03

NOTES: ^ If the water body has segment specific numeric TN or TP criteria in 20.6.4.97 through 20.6.4.899, these values will be used rather than the threshold values in Table 2.

* ALU = designated aquatic life use of the assessment unit
CW = streams with only coldwater uses (high quality coldwater or coldwater)
T = transitional streams with marginal coldwater, coolwater, or both cold and warmwater uses
WW = streams with only warmwater uses (warmwater or marginal warmwater)

** Because of the limited area and number of sites in the Madrean Archipelago (79) and Colorado Plateau (20) ecoregions, these data where grouped with the most similar ecoregions; the Madrean Archipelago with the Chihahuan Desert and the Colorado Plateau with the Arizona/New Mexico Plateau. The Western High Plains (25) had no stream data as the only surface waters are playas, therefore this protocol does not apply to this ecoregion.

*** The volcanic threshold is applicable to Level IV ecoregions 21g, 21h, and 21j because phosphorus values are natural higher in these primarily volcanic ecoregions (i.e., Valles Caldera / Jemez area).

ANALYSIS AND INTERPRETATION:

Run the nutrients report in SWQB's water quality database to collate available nutrient screening data and information as discussed above. If **less than two** screening indicators are present, the assessment unit is preliminarily considered to be Fully Supporting with respect to New Mexico's narrative nutrient standard. This determination should be confirmed by reviewing all available data during development of the associated draft list. This second step is necessary due to the large lag time between sample collection and reporting. The causal variables, TN and TP, are treated as one indicator during the screening. Therefore, if one or both exceed the established threshold it will only count as one indicator. If **two or more** screening indicators are present, a Level II Nutrient Survey will be conducted because attainment status is uncertain.

If there are multiple sites in the AU and the results of the screening are not in agreement, the AU as currently defined may not represent homogeneous water quality. In this case, a Level II survey may need to be conducted at both sites and potential AU breaks should be examined.

2.2 Nutrient Assessment

A complete nutrient assessment is conducted if the preliminary screening indicates potential nutrient impairment or if the assessment unit is currently listed as impaired for nutrients. This assessment uses data that are collected during a Level II Nutrient Survey as well as monthly chemical sampling. The assessment will be conducted for each site in an AU where the full suite of parameters was monitored.

The assessment is based on quantitative measures of both stressor and response variables (USEPA 2010), and may use either a reference or threshold approach (USEPA 2000). For most streams, indicators will be compared to thresholds values derived from water quality standards, SWQB

Table 1. Lake group assignments for evaluating TN, TP, algal biomass, and Secchi depth

Reservoir or Lake	Designated Aquatic Life Use	Assigned Lake Group
Abiquiu Reservoir	CWAL/WWAL	COLD
Bill Evans Lake	CoolWAL	WARM
Charette lakes	CWAL/WWAL	WARM
Clayton Lake	CoolWAL	WARM
Jackson Lake	CoolWAL	WARM
Lake Farmington	CWAL/WWAL	WARM
Monastery Lake	CoolWAL	COLD
Navajo Reservoir	CWAL/WWAL	COLD
Quemado Lake	CoolWAL	WARM
Ramah Lake	CWAL/WWAL	WARM
Santa Rosa Reservoir	CoolWAL	WARM
Springer Lake	CoolWAL	WARM
Storrie Lake	CWAL/WWAL	WARM

Potential nutrient enrichment indicators for TN, TP, algal biomass, and Secchi depth were collated from SWQB analyses, other state agency examples, or published literature. The indicators and respective threshold values selected for New Mexico lakes, reservoirs, and sinkholes are listed in Table 2. This selection was based on best professional judgment with respect to New Mexico's ecoregions. Additional information on all of the candidate thresholds is provided in Table 3.

Table 2. Nutrient-related impairment threshold values for New Mexico's lakes and reservoirs

	CAUSAL VARIABLES		RESPONSE VARIABLES			
Lake Group	TP (mg/L)	TN (mg/L)	Secchi depth (m)	Chl-a (µg/L)	% Cyano-bacteria[a]	DO concentration[g] (mg/L)
COLD	≤ 0.03 [b]	≤ 0.9[c]	≥ 2.0 [b]	≤ 7.5 [b]	≤ 38% [c]	*See NMAC for applicable DO criterion*
WARM	≤ 0.04[c]	≤ 1.4[c]	≥ 1.2 [d]	≤ 11[d]	≤ 38% [c]	
SINKHOLE	≤ 0.025 [e]	≤ 1.42 [e]	≥ 4.0[f]	≤ 3.5[f]	-	

a. *The cyanobacteria thresholds are expressed as a percentage of the total algae count.*
b. *Boundary between mesotrophic and eutrophic lakes (Nürnberg 1996).*
c. *Threshold values were derived from changepoint and regression tree analyses of water quality data from New Mexico (Scott and Haggard 2011).*
d. *Thresholds for Kansas Central Plains & SW Tablelands (Dodds 2006).*
e. *75th percentile of NM sinkhole lake data.*
f. *Thresholds between oligotrophic and mesotrophic lakes (Nürnberg 1996).*
g. *DO criteria are based on the designated aquatic life use(s) of the lake as assigned in Subsection H of 20.6.4.900 NMAC.*