



Response to Public Comments

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1. Introduction

This Response to Public Comments document addresses comments received regarding the Draft Powder River Basin TMDL for *E. coli*. The individuals and organizations shown in Table 1 the Powder River Basin TMDL, *E. coli* Public Comment period, which was held June 2, 2023, through August 2, 2023, and again January 3, 2024, through March 22, 2024. Comments received during the public comment periods have been reviewed by DEQ and addressed in this document. Comments which required modifications to the Powder River Basin TMDL and associated documents are noted and documents have been updated accordingly. In total there were 99 unique comments from 151 entities. DEQ made modifications to the report based on 33 of the comments. Some commenters have two entries as a result of the two distinct comment periods.

Table 1: Commenters on the 2018/2020 Water Quality Report and List of Water Quality Limited Waters

Commenter #	Commenter	Acronym
1	Alexa & Delbert O'Callaghan & Stevens	A&DO&S
2	Andrew Chione	AC
3	AgWest Farm Credit	AFC
4	Amy Hansen	AH
5	Anne March	AM
6	Angela Rosales	AR
7	Amy Young	AY
8	Adam Kerns	AdK
9	Alice Knapp	AlcK
10	Allison Kuehl	AIK
11	Baker County	BC
12	Baker County Livestock Association	BCLA
13	Baker County Livestock Association	BCLA.1
14	Baker County Natural Resources/Parks	BCNR
15	Baker County Natural Resources/Parks	BCNR.1
16	Baker City Public Works - Director	BCPW-D
17	Baker County ranchers NA	BCrN
18	Barbara Meyer	BM
19	Burnt River Irrigation District	BRID
20	Barbara Taylor	BT
21	Baker Valley SWCD Board	BVSB
22	Bob Harrell	BbH
23	Bruce Honeyman	BrH
24	Chris Gyllenberg	CG
25	Cindy Haws	CH
26	Carolyn Kulog	CK
27	Craig Lacy	CL
28	Cassedy Owens	CO
29	Chris Stratton	CS
30	Chris Colton	ChC
31	Cheryl Martin	ChM
32	Cliff Mitchell	CIM
33	Caroline Chalmers	CrC
34	Curtis Martin	CrM
35	Casey Martin	CsM
36	David & Karen Andruss	D&KA

Commenter #	Commenter	Acronym
37	Dean Defrees	DD
38	Dee Dee and J Tabor Clarke	DD-JTC
39	David Grant	DG
40	Doug Heiken	DH
41	Deryl Lefgett	DL
42	Dr. Robert Hall, DVM	DRHD
43	Duwayne Sullivan Ranches	DSR
44	Denise Tschann	DT
45	Doug Ross	DgR
46	Denzil Robbins	DnR
47	Elmer & Jan Hill	E&JH
48	Eric Lower	EL
49	Eastern Oregon Legacy Lands	EOLL
50	Eastern Oregon Mining Association	EOMA
51	EPA Region 10	ER1
52	Emily Simko	ES
53	Ed Hughes	EdH
54	Elmer Hill	EIH
55	Flying J Farms	FJF
56	Gloria and Bob Ziller	G-BZ
57	Gloria Carlile	GC
58	George Hutchinson	GH
59	Greg Sackos	GS
60	Harrell Hereford Ranch	HHR
61	Harrell Hereford Ranch	HHR.1
62	Holly McKim	HM
63	Hayes Oyster Co & Tillamook Bay Shellfish Co	HOC&TBSC
64	Hanna Ranch	HR
65	Joel & Whitney Rohner	J&WR
66	Judy and Tom Price	J-TP
67	J.T. Rohner	J.R
68	Jan Alexander	JA
69	James Carnahan	JC
70	James Carnahan	JC.1
71	Judy Eaton	JE
72	Judith Fisher	JF
73	John Hamburg	JH

Commenter #	Commenter	Acronym
74	JoAnn Marlette	JM
75	JoAnn Marlette	JM.1
76	Jefferson Mining District	JMD
77	Judy Price	JP
78	John Thelen	JT
79	John Rohner	JhR
80	John Woolard	JhW
81	Jill Wyatt	JIW
82	Jim Sterling	JmS
83	Jesse Soliz	JsS
84	Karen Ashikeh	KA
85	Kenneth Cannaday-Shultz	KC
86	Kevin March	KM
87	Kerns Rainbow Ranch, Inc.	KRRI
88	Kermit Williams	KW
89	Karen Riener	KrR
90	Kate Rohner	KtR
91	Lorrie Andrews	LA
92	Lee M. Phillips	LMP
93	Lee Rimmer	LR
94	Lyndsie Williams	LW
95	Mark & Diana Fillmore	M&DF
96	Mark and Savannah Kerns	M-SK
97	Mike Beaty	MB
98	Multiple Commenters, form letter Bart Murray. et al	MCfIBMea
99	Mary DiLoreto	MDL
100	Mary Ellen Anderson	MEA
101	McGinn Ranch	MGR
102	Marshall McComb	MMC
103	Mountain View Cattle Company, Inc	MVCCI
104	Michael Meyer	McM
105	Mackenzie Ranch	McR
106	Margaret Durner	MrD
107	Marcella Neske	MrcN
108	Mark Scantlebury	MrkSc
109	Mark Stromme	MrkSt
110	Martin Neske	MrtN

Commenter #	Commenter	Acronym
111	Myron Miles	MyM
112	Nancy & Andrew Rorick	N&AR
113	Neal Hadley	NH
114	OSU Extension Service	OES
115	OSU	OS
116	Oregon State Legislature	OSL
117	Oregon Water Resources Congress	OWRC
118	Pat and Anna Sullivan	P-AS
119	Peter Barry	PB
120	Pamela Conley	PC
121	Pat Ormsbee	PO
122	Pacific Rivers	PR
123	Roger and Linda Smith	R-LS
124	Rick and Susan Meis/Bogliano	R-SM
125	Roy Anderson	RA
126	Rob Cordtz	RC
127	Robert McKim	RMK
128	Robert McKim	RMK.1
129	Robert Borst	RbB
130	Rachel Bender	RcB
131	Ralph Morgan	RIM
132	SWCD and local landowner	S-II
133	Suzanne Fouty	SF
134	Suzanne Fouty	SF.1
135	SullivanZRanch, Inc.	SI
136	Shawn Peterson	SP
137	Snake River Music Garden	SRMG
138	Scott Wilde	SW
139	Tom Fauria	TF
140	Tyler Hufford	TH
141	Teresa Keller	TK
142	True Sims	TS
143	Tana Wood	TW
144	Thomas Price	ThP
145	Tommy Price	TmP
146	Verna Kay Markgraf	VKM
147	William Fisher	WF

Commenter #	Commenter	Acronym
148	WaterWatch of Oregon	WO
149	WaterWatch of Oregon	WO.1
150	Wes Price	WP
151	Wade Simpson	WS

2. Comments from: Alexa & Delbert O’Callaghan & Stevens

A&DO&S#1: Suggested Change ID #46

Description: TMDL Process - More public and local involvement is needed

Comment: Overwhelmingly evidenced from the two meetings in Baker City; there needs to be more time to analyze and revamp data collected, and more public involvement and clarity as to the potential costs and other ramifications that monitoring would impose on stakeholders of the Basin. Please allow more local public involvement and better, more consistent data and science before moving forward with TMDL monitoring.

The time frame for any implementation needs to be dialed back. Baker County citizens and organizations such as Baker County Commission, the several soil and water conservation districts, Natural Resources Conservation Service (NRCS), and Oregon Department of Fish and Wildlife (ODFW) should have all been involved during the formulation of this rule. We are asking that you work with us, not against us.

Response: Thank you for your comments regarding public participation. DEQ has attended, provided information and engaged in a variety of meetings and forums as it was planning and developing this TMDL. This includes providing information at the Oregon Department of Agriculture Local Advisory Groups and holding two public rule advisory committee meetings that included representatives from ODA, ODFW, ODF, Baker County SWCD, Burnt River Irrigation District, U.S. Bureau of Land Management, Power Basin Watershed Council, Baker County and a community representative for local landowners. During the public comment period, DEQ held a public hearing and two additional meetings in the community. All meeting materials, meeting summaries, and public notice documents are posted online on the rulemaking web page: <https://www.oregon.gov/deq/rulemaking/Pages/PowderTMDL.aspx>.

DEQ will continue to engage with the community and partner agencies following TMDL issuance. DEQ looks forward to convening meetings and work sessions to collaborate on determining where and when implementation makes sense, how to acquire and leverage funding to implement monitoring and strategies and to collaboratively monitor and document water quality. These meetings and discussions will inform agencies’ (such as ODA and BLM) development of implementation plans specific to each agency’s jurisdiction, as well as a monitoring strategy to gage progress and adaptively manage implementation.

A&DO&S#2: Suggested Change ID #54

Description: Analyses - Source tracking methods

Comment: While DEQ's fact sheet indicates that DNA tracing of fecal bacteria isn't currently EPA-approved, it's crucial to recognize the value of source tracking methodologies like Bacterial Source Tracking (BST) endorsed by the EPA. By accurately identifying contamination sources, we can tailor mitigation efforts effectively, avoiding wasted resources. Moreover, integrating source tracking enables regulatory agencies to prioritize interventions where they're most needed, significantly enhancing water quality management efforts. In conclusion, integrating source tracking into E. coli testing protocols is crucial for comprehensive water quality management. By accurately identifying contamination sources, we can develop targeted mitigation strategies that yield tangible improvements in water quality and ecosystem health. I urge the DEQ to consider incorporating source tracking techniques into the TMDL draft to ensure an effective approach to addressing E. coli contamination in Oregon's water bodies. Community input and transparency throughout this process are vital for successful outcomes.

Response: DEQ appreciates this comment and agrees that targeted application of EPA-endorsed Bacterial Source Tracking (BST) methods can be of great use in implementing fecal indicator bacteria TMDLs. BST can provide important information for optimizing practices to improve water quality and reduce contamination sources, including wildlife, human, and livestock sources.

BST is used to refine appropriate management actions to reduce specific sources of bacteria. DEQ supports the use of EPA-endorsed methods in TMDL implementation and can work with local partners to develop study designs and identify funding sources to support BST studies. The proposed TMDL, Water Quality Management Plan, and Technical Support Document were updated to include the role of BST in TMDL implementation.

Changes were made based on this comment.

3. Comments from: Andrew Chione

AC#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

AC#2: Suggested Change ID #45

Description: Water Quality Rules - Enforcement needed

Comment: The State of Oregon through the Department of Agriculture and Department of Environmental Quality have been historically negligent in enforcing water quality rules. This allows a minority of negligent landowners to continue polluting Powder Basin waters, which may erode the willingness of other landowners to comply with state regulations. Without sufficient enforcement there is ongoing pollution to surface waters caused by fecal bacteria, animal waste, sediment, and reduced riparian condition due to overgrazing to degrade water quality. Pollution of public waters by the agricultural sector hurts all water users. Now is the time for DEQ to do it's job by developing a plan to end degradation of water quality and enforce on non-compliance, protecting water quality for all users.

Response: DEQ appreciates the concerns expressed by commenters regarding protection of water quality in the Powder River Basin. While outside the scope of TMDL development, enforcement by the state of existing laws and regulations has a role in implementation of TMDLs and Agricultural Water Quality program rules and plans. In 2023, DEQ and Oregon Department of Agriculture updated our Memorandum of Agreement for Collaboration on Achieving Water Quality Goals Related to Agricultural Nonpoint Source Pollution. The MOA describes the different authorities and responsibilities of both agencies and how we will work together to protect and improve water quality in Oregon's streams flowing through agricultural lands or impacted by discharges from agricultural activities. The MOA specifies collaborative principles, including around TMDL development, implementation, monitoring and adaptive management; agricultural management area rules and plans reviews; and also includes a section on compliance and enforcement. The agencies are committed to improving all aspects of coordination to bring the relevant authorities and voluntary strategies to bear in improving and maintaining water quality related to agricultural lands and activities throughout the state.

4. Comments from: AgWest Farm Credit

AFC#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10

years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

AFC#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

AFC#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

AFC#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have an opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

5. Comments from: Amy Hansen

AH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

6. Comments from: Anne March

AM#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

7. Comments from: Angela Rosales

AR#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

8. Comments from: Amy Young

AY#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

9. Comments from: Adam Kerns

AdK#1: Suggested Change ID #99

Description: TMDL documents - Sources of bacteria from wastewater treatment plants need to be included in TMDL - permits aren't protective

Comment: Why should municipalities be permitted to discharge sewage into the river for years while the agricultural community takes more of the blame for E. coli exceedances in the TMDL? Permitted facilities still contribute to the bacterial load. Baker City resumed discharge to the Powder River and has been noted in news articles for exceeding permit limits. DEQ has not cited them or mentioned the City in the draft TMDL. Point sources need to be considered in the TMDL analyses as a contribution to E. coli loads.

Response: DEQ agrees that point sources of fecal bacteria, such as wastewater treatment plants, contribute to E. coli levels in Powder River Basin waters. As noted by the commenter, Baker City began the process of transitioning to a treatment process that would cease discharge to the Powder River but has needed to temporarily continue operations under a National Pollution Discharge Elimination System (NPDES) permit. DEQ administers this permit and has updated the draft TMDL documents to include E. coli loads from the wastewater treatment plant in allocations. NPDES permits contain extensive conditions for treatment and monitoring of wastewater that includes disinfection prior to discharge. DEQ will continue administrative oversight of all NPDES permit-holders in the Powder River Basin.

Changes were made based on this comment.

10. Comments from: Alice Knapp

AlcK#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between

2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

AlcK#2: Suggested Change ID #25

Description: Analyses - Elk herds and feeding stations need to be considered in TMDL analyses

Comment: There are sources of fecal bacteria other than cattle that DEQ should have considered when developing the TMDL. Herds of elk move through the basin and graze on private landowner's fields. There are also multiple feeding stations that attract large herds of elk throughout the winter, which contribute excessive amounts of manure to the Powder River watershed. This causes fecal pollution of surface waters that impacts downstream users and may mistakenly be attributed to cattle sources. DEQ incorrectly concludes that all E. coli bacteria comes from cattle.

Response: DEQ appreciates the opportunity to clarify the source assessment provided in the TMDL. Section 5.2 of the Technical Support Document provides details about the potential sources of E. coli that were considered, analyzed, and included in the TMDL allocations or allowable E. coli loads from point and non-point sources. Point sources of bacteria, including wastewater treatment plants and state stormwater runoff from roadways, were included in TMDL analyses and received bacteria wasteload allocations. Nonpoint sources, including wildlife (elk, other ungulates, beaver, and waterfowl), livestock (including CAFOs), and residential septic systems, also received an E. coli load allocation. Cattle were not placed in a separate category or given a separate allocation. Together, the non-point source category received the largest allowable E. coli load allocation because point sources are relatively few and affect a smaller number of stream reaches.

DEQ's TMDL evaluations also included E. coli and flow data, seasonal considerations, land use/land cover, permit monitoring data, and wildlife presence and behavior patterns. From this evaluation, DEQ concluded the highest concentrations of bacteria generally occurred during irrigation season (May-October) and at locations downstream of areas with irrigated pastures and other agricultural land uses.

DEQ is also aware that there are large herds of elk in the Powder River Basin and considered bacteria inputs from the elk feeding stations. DEQ's assessment included consideration of data collected upstream and downstream of elk feeding stations, results of which showed that the wildlife area elk feeding stations were not likely significant sources of bacteria to surface waterbodies during the winter season, but may be contributing to criteria exceedances during the spring and summer period (May through October). To ensure that the elk feeding stations do

not become an increased source of bacteria, Oregon Department of Fish and Wildlife is named as a Designated Management Agency in the TMDL Water Quality Management Plan and is required to develop and implement an approvable TMDL implementation plan that builds on their existing Elkhorn Wildlife Area Management Plan. Section 7.1 of the TMDL and Section 5.2.4 of the TSD has been updated to describe the potential significance of elk and other wildlife in the basin, with specific discussion on the Elkhorn Wildlife Area feeding station.

Changes were made based on this comment.

AlcK#3: Suggested Change ID #46

Description: TMDL Process - More public and local involvement is needed

Comment: Overwhelmingly evidenced from the two meetings in Baker City; there needs to be more time to analyze and revamp data collected, and more public involvement and clarity as to the potential costs and other ramifications that monitoring would impose on stakeholders of the Basin. Please allow more local public involvement and better, more consistent data and science before moving forward with TMDL monitoring.

The time frame for any implementation needs to be dialed back. Baker County citizens and organizations such as Baker County Commission, the several soil and water conservation districts, Natural Resources Conservation Service (NRCS), and Oregon Department of Fish and Wildlife (ODFW) should have all been involved during the formulation of this rule. We are asking that you work with us, not against us.

Response: Thank you for your comments regarding public participation. DEQ has attended, provided information and engaged in a variety of meetings and forums as it was planning and developing this TMDL. This includes providing information at the Oregon Department of Agriculture Local Advisory Groups and holding two public rule advisory committee meetings that included representatives from ODA, ODFW, ODF, Baker County SWCD, Burnt River Irrigation District, U.S. Bureau of Land Management, Power Basin Watershed Council, Baker County, and a community representative for local landowners. During the public comment period, DEQ held a public hearing and two additional meetings in the community. All meeting materials, meeting summaries, and public notice documents are posted online on the rulemaking web page: <https://www.oregon.gov/deq/rulemaking/Pages/PowderTMDL.aspx>.

DEQ will continue to engage with the community and partner agencies following TMDL issuance. DEQ looks forward to convening meetings and work sessions to collaborate on determining where and when implementation makes sense, how to acquire and leverage funding to implement monitoring and strategies and to collaboratively monitor and document water quality. These meetings and discussions will inform agencies' (such as ODA and BLM) development of implementation plans specific to each agency's jurisdiction, as well as a monitoring strategy to gage progress and adaptively manage implementation.

11. Comments from: Allison Kuehl

AllK#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

12. Comments from: Baker County

BC#1: Suggested Change ID #38

Description: Process - Explain why a TMDL is needed at this time

Comment: DEQ needs to explain why a TMDL is needed at this time. There are Agricultural Water Quality Management Plans already in place to protect and improve the ecosystem. Regulating with a TMDL does not seem necessary when there are already partnerships in place to support voluntary watershed restoration efforts. An adequate reason hasn't been presented by DEQ as to what existing problem would be solved by this TMDL.

Response: The need for Total Maximum Daily Loads (TMDLs) under the Clean Water Act (CWA) is driven by the Act's requirement for states to identify impaired waterways and develop plans for restoring water quality. The CWA further requires each state to develop Total Maximum Daily Loads for each impaired waterway segment and submit the draft TMDL to EPA for approval. DEQ's 2022 Integrated Report lists multiple reaches within each of the Powder River Basin subbasins including, Powder, Burnt, and Brownlee, as impaired for E. coli bacteria. Some of these reaches have been categorized as impaired for E. coli bacteria since 1998 with additional listings added in 2010 and 2018. All E. coli listings were reassessed in 2018, with newer data confirming these impairments. As such, DEQ must develop and implement a bacteria TMDL that is approved by EPA or implement a TMDL developed by EPA. Additionally, reaches of the Powder River Basin are also listed as impaired for dissolved oxygen, temperature, pH and sedimentation, and DEQ is required to develop TMDLs for those parameters by 2030. TMDLs developed through Oregon's process allows for communication and collaboration with federal agencies, other state agencies, and local governments.

BC#2: Suggested Change ID #39

Description: TMDL documents - Basin characterization is inadequate

Comment: The DRAFT Powder Basin Rules, Plan, and Technical documents do not describe the vast area or the thousands of square miles the Rules affect. This is important information that the public deserves to know. It also illustrates the difficulties in obtaining bacteria and other TMDL standards in every waterbody within this huge area. The size of the Basin is just one of the reasons that standards are not attainable.

Please, edit the Rules, Plan, and Technical documents to include factual information on the Powder Basin.

The Powder River The Powder River is a tributary of the Snake River, approximately 153 miles (246 km) long, in northeast Oregon in the United States. It drains an area of the Columbia Plateau on the eastern side of the Blue Mountains. It flows almost entirely within Baker County but downstream of the city of North Powder forms part of the border between Baker County and Union County.

The Powder River's tributaries arise in the southern Blue Mountains in the Umatilla National Forest. The river's main stem begins in Sumpter, where McCully Fork, Cracker Creek and several smaller tributaries join, and flows east-southeast through the tailings of past dredge mining and into Phillips Reservoir. After exiting Phillips Reservoir, the river continues east for about 7 miles (11 km) before turning sharply north through the Bowen Valley and Baker City, Oregon. From here the river meanders the floor of the Baker Valley and passes by the cities of Haines and North Powder, where it is joined by the North Powder River. Here the river turns again sharply east-southeast, flowing through Thief Valley Reservoir, in a valley along the southern edge of the Wallowa Mountains. The river then transits the Lower Powder Valley and enters the Snake River on the Idaho–Oregon state line from the west, upstream from the Brownlee Dam at the Powder Arm of Brownlee Reservoir 11 miles (18 km) downstream from Richland.

The Powder River watershed drains 1,603 square miles (4,150 km²) of northeastern Oregon. There are three man-made reservoirs on the Powder River: Phillips Reservoir (behind Mason Dam), Thief Valley Reservoir, and also the Powder arm of Brownlee Reservoir at the Oregon–Idaho border at the confluence of the Powder and Snake Rivers.

In 1988, 11.7 miles (18.8 km) of the Powder River was designated Wild and Scenic. Between the Thief Valley Dam and the Oregon Route 203 bridge, this stretch flows through a rugged canyon with spectacular geologic formations.

The Burnt River The Burnt River is a 98-mile-long (158 km) tributary of the Snake River in eastern Oregon, United States. It enters the Snake near Huntington, Oregon, at a point upstream of the Powder River and downstream of the Malheur River, slightly more than 327 miles (526 km) from the Snake's confluence with the Columbia River. Draining 1,090 square miles (2,800 km²), it flows predominantly west to east.

The river begins at Unity Reservoir at the confluence of the North, West, Middle, and South forks of the river. The reservoir is slightly east of the Wallowa-Whitman National Forest in the

Blue Mountains and slightly north of Unity. Unity Lake State Recreation Site adjoins the reservoir. As it leaves the lake, the river flows under Oregon Route 245, then runs east through the upper Burnt River Valley past Hereford and Bridgeport and, through the Burnt River Canyon, to Durkee. Turning generally south at Durkee, the river runs along Interstate 84 past Weatherby, Dixie, and Lime before flowing under the Interstate and turning east again. Shortly thereafter, it passes Huntington and reaches the Snake.

Brownlee Reservoir Brownlee Dam is a hydroelectric earth fill embankment dam in the western United States, on the Snake River along the Idaho-Oregon border (Washington County, Idaho in and Baker County in Oregon). In Hells Canyon at river mile 285, it impounds the Snake River in the 58-mile-long (93 km) Brownlee Reservoir.

Response: DEQ appreciates the information provided by the commenter and agrees that the Powder Basin is a vast geographic area. Section 2 of DEQ's Technical Support Document provides relevant descriptions of the Powder River Basin's location, climate, hydrology, land use and geology, which are very similar to the information provided by the commenter. DEQ's documents provide reference to primary literature and studies published by the NRCS, USGS, NLCD, BOR, OWRD and others. More detailed information describing each of the subbasins can also be found in DEQ's Powder Basin Status Report and Action Plan (November 2013), which DEQ added reference to in the Technical Support Document. Because the material provided by the commenter does not include citations, DEQ is unable to verify the information and determine if any additional modifications to the TMDL documents are appropriate.

DEQ also clarifies that basin size is not a factor in determining whether or not water quality standards apply or are being attained in Section 4 of the TMDL document and Section 3 of the Technical Support Document. In alignment with federal Clean Water Act requirements, DEQ applies water quality standards that align with designated beneficial uses assigned to the basin by the Oregon Water Resources Division or Oregon Water Resources Commission. Pollutant sources and contributions vary across the basin and will thus require different approaches for restoration and management. DEQ develops TMDLs for different basins, subbasins, or waterbodies to assess pollutant sources consistently and develop pollutant allocations and water quality management plans that are tailored to each location. In this case, the Powder Basin bacteria TMDL also serves as a Protection Plan to ensure that streams that are attaining standards will continue or appropriate strategies are applied to achieve attainment.

Changes were made based on this comment.

BC#3: Suggested Change ID #69

Description: Analyses - Irrigation and livestock land use

Comment: Given all the possible animal contact (domestic and game animals) with streams in the Powder River basin, how can you conclude that irrigation runoff and associated livestock grazing are responsible for up to 95% of E. coli contamination? Table 2.3 shows that the category of Hay/Pasture only makes up 3.6% of the Powder Basin area but you conclude that contributes 95% of the E. coli! Although Shrub/Scrub (46.1%) and Evergreen Forest (26.9%) comprise 73.0% of the basin area, those two categories have very low-density livestock use and no irrigation. Your data do not support your conclusions.

Response: DEQ appreciates the opportunity to discuss the differences between land use/land cover statistics at the basin level, sources, and percent reductions needed to meet water quality criteria. The presence of animals is only one factor that influences the potential of fecal material contributing to elevated E. coli levels in receiving waters such as streams or rivers. The areal concentration (number of animals per acre) of a source is very important. For instance, the concentration of livestock on pastures is often much higher than wildlife distributed across their habitat. This makes the comparison of the relative areas of land uses less informative when comparing the potential of a source to contribute to elevated E. coli levels in receiving waters. Further, the location of the source area greatly affects the transport of the E. coli to the receiving waters. Even if the two different pastures that have the same livestock concentrations and management with one pasture adjacent to the stream and the other located farther away from the stream, the pasture adjacent to the stream has a much greater potential to contribute to higher levels of E. coli in the stream. These factors were used in the calculation of the different sources for the TMDL and why a 95% reduction of nonpoint sources was identified.

BC#4: Suggested Change ID #71

Description: Analyses - DEQ needs more data to distinguish between elk and livestock bacteria

Comment: More sampling points are needed to study elk movement and distinguish between elk and livestock bacteria impacts in stretches of the Powder River and eastern watersheds.

Response: DEQ agrees that wildlife is a potential source of E. coli pollution to surface waters in the Powder River Basin, particularly in areas where wildlife congregate at artificial feeding areas. To help ensure that the congregating elk are not contributing to excess loads of bacteria to nearby river reaches, DEQ has named ODFW as a Designated Management Agency in the TMDL. ODFW is required to develop an E. coli TMDL Implementation Plan for the feeding areas. DEQ also acknowledges that additional data may be useful to distinguish between elk and livestock contributions in some areas of the Powder River Basin. TMDL implementation plans should include identification and prioritization of locations for further monitoring or assessment. Monitoring or assessment methods may include additional water quality data collection or bacteriological source tracking (BST). These methods may be useful to determine which management strategies will be most effective in certain locations. DEQ does not expect management of wildlife sources of fecal contamination outside of those areas where wildlife congregate at the artificial feeding stations. Please also see other responses within this document for further discussion about appropriate uses for DNA analysis/BST methods.

BC#5: Suggested Change ID #87

Description: TMDL documents - Bias against agriculture - cattle industry

Comment: The contention that cattle are the main culprit in the bacteria levels is ludicrous and deserves to be laughed at, especially in light of the fact that no DNA samples were taken. Conclusion: it apparently was only an assumption by the DEQ staff. Any study that will have such an impact on our Eastern Oregon citizens and, most relevantly, our cattle industry, needs more than a couple of studies. I attended the public hearing, where more than 100 people were

present, on Tuesday, August 15th, at the OTEC office in Baker City, Oregon, and there certainly was no solid evidence presented at that time that I could see.

DEQ has not proved that livestock are largely responsible for bacteria concentrations.

As Curtis Martin stated at the above-referred to public hearing: “You can’t take a broad-brush approach to agriculture; we’ve got to be more specific than that. We’re not gonna roll over for this. This is oppressive.”

Jim Carnahan, a civil engineer for the US Forest Service, who lives near Baker City, said: “agriculture is the biggest industry in the county...this process clearly needs more time. We need a more detailed study and more information.”

Response: DEQ appreciates this feedback and understands that contributions of fecal bacteria from individual sources will vary by location and over time. It is not DEQ’s intention to conclude a single source as the primary contributor of E. coli in the basin wide. Rather, the draft TMDL documents are intended to convey information about all potential point and nonpoint sources of E. coli, to calculate an allowable E. coli load, to provide information about reduction targets, and to begin a process of adaptive management that will lead to improved water quality. The combined category of background and nonpoint sources includes contributions of E. coli from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands with annual or seasonal livestock populations. The combined background and nonpoint source category were assigned the largest portion of the allowable E. coli load in the draft TMDL. The point source category was assigned waste load allocations based on the permit conditions. Livestock and agriculture are included in the nonpoint source category. DEQ has revised the draft TMDL documents to clarify the varied sources of E. coli within the nonpoint source and background categories and emphasize that primary sources of fecal bacteria will vary by location and over time.

Wildlife, human, and livestock contributions of fecal bacteria will differ across basin waters and further assessment will likely be needed in many locations to help determine the dominant source. DEQ agrees that additional data collection, including bacteria source tracking methods (DNA testing), can help to refine understanding of sources within specific river reaches and in directing appropriate management strategies. TMDLs are intended to begin a process of adaptive management by providing information about the E. coli loading capacity and measured exceedances to those with knowledge of E. coli sources within their areas of jurisdiction. Local knowledge and community involvement will be vital to ensuring successful implementation and protection of water quality in the Powder River Basin.

Changes were made based on this comment.

13. Comments from: Baker County Livestock Association

BCLA#1: Suggested Change ID #38

Description: Process - Explain why a TMDL is needed at this time

Comment: DEQ needs to explain why a TMDL is needed at this time. There are Agricultural Water Quality Management Plans already in place to protect and improve the ecosystem. Regulating with a TMDL does not seem necessary when there are already partnerships in place to support voluntary watershed restoration efforts. An adequate reason hasn't been presented by DEQ as to what existing problem would be solved by this TMDL.

Response: The need for Total Maximum Daily Loads (TMDLs) under the Clean Water Act (CWA) is driven by the Act's requirement for states to identify impaired waterways and develop plans for restoring water quality. The CWA further requires each state to develop Total Maximum Daily Loads for each impaired waterway segment and submit the draft TMDL to EPA for approval. DEQ's 2022 Integrated Report lists multiple reaches within each of the Powder River Basin subbasins including, Powder, Burnt, and Brownlee, as impaired for E. coli bacteria. Some of these reaches have been categorized as impaired for E. coli bacteria since 1998 with additional listings added in 2010 and 2018. All E. coli listings were reassessed in 2018, with newer data confirming these impairments. As such, DEQ must develop and implement a bacteria TMDL that is approved by EPA or implement a TMDL developed by EPA. Additionally, reaches of the Powder River Basin are also listed as impaired for dissolved oxygen, temperature, pH and sedimentation, and DEQ is required to develop TMDLs for those parameters by 2030. TMDLs developed through Oregon's process allows for communication and collaboration with federal agencies, other state agencies, and local governments.

14. Comments from: Baker County Livestock Association

BCLA.1#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL,

including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

BCLA.1#2: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of

BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

BCLA.1#3: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

BCLA.1#4: Suggested Change ID #40

Description: Process - Additional time and engagement needed

Comment: The details of our concerns regarding the information provided are too lengthy to detail in this request/feedback letter. We need to have a face-to-face meeting with your staff (with much more time allotted than for the Public Hearing) to discuss our concerns and development of a mutually agreeable plan of action. There were numerous questions and points made at the Public Meeting that were not adequately answered by your staff.

Response: DEQ appreciates the Baker County Livestock Association's interest in the TMDL and can meet to help clarify the bacteria TMDL for E. coli. The TMDL and Water Quality Management Plan do not identify the Baker County Livestock Association as a person responsible for developing an implementation plan. However, DEQ acknowledges that some Baker County Livestock Association members may have responsibility to partner with Designated Management Agencies, e.g., Oregon Department of Agriculture, or irrigation districts to implement management strategies to reduce bacteria loads to waterways in some

areas of the basin. DEQ coordinates with Designated Management Agencies and other responsible persons during TMDL implementation. DEQ will continue to engage with the community and partner agencies following TMDL issuance. DEQ looks forward to convening meetings and work sessions to collaborate on determining where and when implementation makes sense for monitoring and strategies and to collaboratively monitor and document water quality.

15. Comments from: Baker County Natural Resources/Parks

BCNR#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups

and interested community members will be critical for successful TMDL implementation and improved water quality.

BCNR#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

BCNR#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

BCNR#4: Suggested Change ID #17

Description: Data - Older data should not be used in the TMDL

Comment: Comments dispute usage of very old sample data at all sites on the Burnt River. Outdated sampling won't take into consideration the improvements made by landowners for the last 10 years. Bacteria water quality improvements from ODA and SWCD is not shown in the data because it was collected between 2007 and 2013.

Response: DEQ agrees that water quality improvements resulting from recent watershed restoration and improvement projects conducted since 2013 are mostly not represented in the E. coli sample data in the Powder River Basin Bacteria TMDL. As part of regular water quality assessments, DEQ conducts analysis of trends in water quality data collected at long-term monitoring sites in the basin. Information about the data and trend analyses can be found in Section 5.1 of the Technical Support Document. Data from the past 24 years (2000-2024) of E. coli samples collected at three long-term monitoring stations: 1) Powder River at Highway 7 (11490-ORDEQ), 2) Powder River at Hwy 86 (10724-ORDEQ), and 3) Burnt River at Snake River Road (11494-ORDEQ), indicate that exceedances of the E. coli standard are still occurring at these locations.

DEQ has updated the Technical Support Document to add the most recent samples to the trend analyses. DEQ is encouraged by the improvements to land management practices in the Powder River Basin and recognizes the immense efforts made by landowners, ODA, the SWCD, and others. DEQ understands that these projects are beneficial for water quality and that it can take time to see overall water quality improvement resulting from changed management practices on individual properties. DEQ recommends these improvements be documented and promoted within the region and included in TMDL reporting. As part of the TMDL process, monitoring results and on the ground actions will be reviewed every five years to record progress, update actions, and to address barriers to success. These five-year reviews provide opportunities to promote the successes of individual projects and where appropriate document progress in the form of official success stories.

Changes were made based on this comment.

BCNR#5: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

BCNR#6: Suggested Change ID #20

Description: Data - Additional data needed for source assessment

Comment: DEQ did not collect data in a way that corresponds to specific sources. Many more current sites are needed above and below individual potential sources. Monitoring requirements by Responsible Persons are burdensome and may not be necessary if data used in the proposed TMDL were current and adequate.

Response: DEQ appreciates the opportunity to clarify the role of data collection and analysis for development of the proposed TMDL. DEQ collected over 600 bacteria samples from more than 20 sample sites across the Powder River Basin and used data from stream flows in the basin measured at gages maintained by the US Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. DEQ relies on locations with public access to take water samples. The analyses allowed DEQ to calculate the total maximum daily load for E. coli in river reaches analyzed and measure where, and by how much, exceedances of the acceptable load occur. DEQ has added language to Section 5.1 of the Technical Support Document to clarify this approach.

The intent of the proposed TMDL is to provide the targets for E. coli percent reductions needed to those with source specific jurisdiction, as a first step in assessing the basin. The commenters' proposed approaches should be considered during development of TMDL implementation plans by appropriate Designated Management Agencies and other responsible persons. These are necessary steps toward adaptive management of water quality in the Powder River Basin.

BCNR#7: Suggested Change ID #21

Description: Process - TMDL five-year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

BCNR#8: Suggested Change ID #26

Description: TMDL documents - Source assessment inadequate

Comment: “DEQ linked potential point and nonpoint sources of bacteria that could influence stream bacteria concentrations during differing hydrologic conditions using area land use information and specific local knowledge.” What “local knowledge” was used? ODEQ never contacted the County or other members of the TAC prior to developing the draft Plan. Using a broad brush-stroke for source is unacceptable and is not proven with the data ODEQ cited. The “pollutant loading” is faulty due to ODEQ’s poor understanding of local “existing” conditions and the potential for multiple E. coli sources, not just agriculture.

Response: DEQ has revised sections 7.1 of the TMDL document and section 5.2 of the Technical Support Document to clarify that the assessment of nonpoint sources identifies potential sources of E. coli throughout the basin without designating a primary source basin wide. DEQ also clarifies in the TMDL and Technical Support document that sources and inputs of E. coli to surface waters will vary in space and time across the basin and will need additional monitoring and assessment during TMDL implementation outlined in the Water Quality Management Plan. DEQ has revised language in the TMDL in Section 2 to clarify sources of information used to develop the source assessment that includes the Powder Basin Watershed Council, Powder Valley Water Control District, Burnt and Powder-Brownlee Agriculture Local Advisory Groups, and the Oregon Department of Agriculture. DEQ has additionally amended the source assessment sections from feedback provided during the public comment period.

Changes were made based on this comment.

BCNR#9: Suggested Change ID #27

Description: Data - DEQ selected and used inaccurate data to estimate E. coli loads

Comment: Please explain an email communication statement that “selected data was used to determine load.” Why were all data not used? How and why were data used selected? There is a confusing statement (at the end of the introductory paragraph in Section 9.0 of the TMDL.) If DEQ did not use water quality data, postpone the development of the TMDL until accurate, up-to-date data, including DNA data can be collected and analyzed.

ODEQ cherry-picked through the old, unreliable data and selected the load data that was highest in exceedance. Then, using that bad data, an “estimate” was made as to how much more, or not, a waterbody could accept. “Estimates” would not be needed if ODEQ had used accurate, reliable data.

Response: DEQ apologizes for any unintended miscommunication. DEQ’s use of data followed protocols established in the Quality Assurance Project Plan (QAPP) for the Powder River Basin for analyses published online: <https://www.oregon.gov/deq/wq/tmdls/Pages/powderTMDL.aspx>. A description of how DEQ used data in the TMDL analyses is also included in the proposed Technical Support Document, Section 4. The introductory paragraph of the proposed TMDL, Section 9.0, summarizes how DEQ’s analyses meet Oregon Administrative Rules for establishing TMDL load allocations, reserve capacity, and margin of safety, and the remainder of the section describes in more detail DEQ’s approach to developing allocations, considering reserve capacity and developing a margin of safety.

DEQ would also like to clarify use of the term “estimate” used in descriptions of draft TMDL analyses. The term estimate is often used in statistical analyses, and in this case refers to calculations of microbial population size based on field samples collected.

BCNR#10: Suggested Change ID #28

Description: Allocations - Downstream landowners should not be responsible for upstream inputs

Comment: “Bacteria load allocations apply to all streams tributary to each stream reach described in association with each downstream monitoring station. Bacteria waste load allocations apply at the point of discharge.” Allocations must be based on factual, site specific, property line to property line monitoring. Upstream inputs should not be held against downstream users just because that’s where the monitoring site is located. Except for permitted CAFOs, agriculture’s ‘discharges’ are non-point sources, and therefore do not have a specific point to monitor.

Response: DEQ would like to clarify that point source wasteload allocations are applied at the point of the discharge according to requirements of their NPDES permits. Pollutants from nonpoint sources and background sources are applied in land areas upstream of the monitoring station and represent 10 stream reaches described in the proposed TMDL. DEQ understands that E. coli inputs can vary within a stream reach and downstream users are not accountable for pollution entering from upstream. Section 6.2 of the Technical Support Document includes a description of how nonpoint source load allocations and percent reductions apply to land areas and tributaries for each of the 10 named stream reaches. Nonpoint source Water Quality Implementation Plans will further refine priority areas for management strategies and monitoring. Implementation plans will impact river conditions for downstream sources to alleviate pollutant loading for downstream sources.

BCNR#11: Suggested Change ID #29

Description: Data - Percent reductions of bacteria span a broad range and don’t make sense

Comment: The commenters are concerned about the targets for bacteria percent reductions stated in the TMDL in part because it is unclear where they came from. The percent reductions required across stream reaches analyzed also span a wide range (40 - 95%), which also causes confusion and could indicate a moving goal post. Baker County also asks DEQ to explain this statement from the TMDL, “Because differing sources contribute differing magnitudes of bacteria during differing flow conditions, DEQ chose to use the maximum observed concentration to calculate reductions needed across all flow categories and then chose the maximum reduction across all areas.”

Response: The range of bacteria reduction percentages needed (40% to 95%), cited by the commenter, is a summary of excess E. coli loads across all nonpoint and background sources

and was presented in the draft Water Quality Management Plan, Table 2.0a. This is a summary of all stream reaches analyzed based on the flow category with the highest observed exceedance of the water quality criteria, and can be found in more detail in the TMDL and Technical Support Document tables. Excess E. coli loads are expressed as a percent reduction that is needed, based on currently calculated loads. DEQ presented the range to summarize information in the TMDL document, and these numbers do not represent a moving goal. Please note that these location-specific excess loads are not regulated requirements, like permit limits. Instead, these targets are a collective goal across sources by implementing proven management strategies, which DEQ acknowledges to have varying applicability and potential effectiveness depending on location and current conditions. The Adaptive Management Process used in TMDL implementation relies on regular reporting and updated monitoring data to assess progress toward meeting water quality targets and allows for adjustment of activities to meet these targets.

The quoted statement referenced by Baker County was taken from Section 9.3 of the draft TMDL, which describes how a margin of safety was derived and included in the TMDL calculations. The statement highlights that E. coli levels are variable over time, based on changes in bacteria sources and seasonal river flows. The referenced statement provides a description of methods used to establish the necessary bacteria reduction target that will ensure attainment of water quality standards at all flow categories in each of the reaches analyzed, regardless of seasonal variation. For each river reach analyzed, DEQ determined the maximum percent reduction needed to achieve the E. coli concentration criteria under all flow conditions (low, medium-low, medium, medium-high, and high flows) and applied it as the target across all flows. This approach ensures that E. coli standard will be met under all flow conditions and seasons for specific areas draining to identified reaches. This approach is consistent with other EPA approved TMDLs in Oregon. The percent reduction of E. coli is necessary to attain water quality standards regardless of source.

BCNR#12: Suggested Change ID #30

Description: TMDL documents - Designated management agencies should not develop individual plans

Comment: "...an associated WQMP is an required element of a TMDL..." Multiple DMAs developing and writing their own WQMP is a huge waste of time and money for every agency/entity involved. Too, there is potential for redundant and/or contradictory Plans that will confuse Stakeholders. There should only be one, multi-agency, comprehensive Plan for the County.

Response: DEQ clarifies that the quoted line from the TMDL refers to the Oregon Administrative Rule requirement that a TMDL must include a WQMP. DEQ met this rule requirement by preparing a WQMP for the Powder River Basin bacteria TMDL. The WQMP was provided for public comment, along with the other TMDL documents, and will be proposed for adoption, by reference, into rule.

DEQ's Powder River Basin bacteria WQMP serves as the framework of TMDL implementation by providing the management strategies that may be applied to meet TMDL load allocations, locations where implementation should be focused, and other requirements of persons responsible for TMDL implementation. DEQ's WQMP is generalized to the entire geographic

area of the Powder River Basin and relies on development of implementation plans for each specific jurisdictional area within the basin. Because each jurisdiction implicated varies in size, locations, sources, contributions, opportunities and funding mechanisms, implementation efforts must be tailored to each responsible entity, to optimize success. Implementation plan development and reporting are cornerstones of TMDL implementation and measuring success. While implementers may find efficiencies in collaborating on plans across jurisdictions, multiple implementation plans will likely always be part of TMDL implementation.

BCNR#13: Suggested Change ID #31

Description: TMDL documents - Define reasonable assurance

Comment: "...defines Reasonable Assurance as "a demonstration that a TMDL will be implemented by federal, state or local governments or individuals through regulatory or voluntary actions including management strategies or other controls." How can there be a "reasonable assurance" of implementation when ODEQ cannot identify, without doubt, what the E. coli source is? Regulatory actions should be at a last resort and only after being proven through data. Many ag producers in Baker County have already implemented water quality strategies such as riparian fencing, off stream watering, and conversion to pivots. Yet, ODEQ does not think there's been enough reduction. It appears that meeting the allocations is going to be a moving target – one that ag will never win. What are "other controls"?

Response: Described in Section 7 of the Water Quality Management Plan, OAR 340-042-0040(6)(g) provides reasonable assurance that load allocations will be achieved on a three-point test of whether practices to reduce pollutants: 1) exist, 2) are technically feasible, and 3) have a high likelihood of implementation. This proposed TMDL identified sources of bacteria and existing strategies to reduce bacteria loads to surface waters that are both feasible and implementable that is also demonstrated by their implementation and efficacy in the nearby Malheur Basin. While DEQ identified practices, strategies, and controls that are proven to be effective, DEQ recognizes flexibility in the TMDL by allowing for responsible persons to propose other methods to achieve bacteria reductions in waterways in the basin. DEQ's WQMP acknowledges that "many of these...existing strategies and actions...are already being implemented within the basin." While existing strategies may result in improved conditions, the collective data do not show trends of measurable improvement throughout the basin. DEQ encourages expansion of current efforts, particularly to areas identified as priority for bacteria reductions.

BCNR#14: Suggested Change ID #32

Description: TMDL documents - Management strategies lack expertise and do not always apply

Comment: Waterbodies are unique and require professional, local knowledge in order to be properly managed. DEQ does not have the necessary information about land use or expertise to ensure appropriate management strategies are proposed in the TMDL documents. Some of the proposed strategies for livestock management are not feasible in every location.

Response: The Water Quality Management Plan and Fiscal Impact Statement recognize that appropriate and effective management strategies will differ from one location to the next. Examples provided in the documents offer a menu of management strategies that can be used to meet the targets established in the Powder River Basin bacteria TMDL. The strategies and practices presented in the document are adapted from published sources, including U.S. Department of Agriculture Natural Resources Conservation Service (Field Office Technical Guide - NRCS 2022) and the State Index of Conservation Practice Standards for Oregon (NRCS, 2022). DEQ also used the categories and language from the Oregon Watershed Enhancement Board's Oregon Aquatic Habitat Restoration and Enhancement Guide and Oregon Watershed Restoration Inventory Online List of Treatments. To assist with implementing strategies, multiple agencies and organizations will be working locally to help coordinate programs within the Powder River Basin. Some of these agencies include, Oregon Department of Agriculture, Oregon State University, Malheur Soil and Water Conservation District, USDA-National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. Monitoring results and on the ground actions will be reviewed every five years as part of adaptive management to record progress, update actions, and to address barriers to success.

BCNR#15: Suggested Change ID #33

Description: TMDL documents - Include map of land ownership

Comment: On November 10, 2022, the County requested a map that had the bacteria listed streams over the landownership map. We did not receive this.

Response: Restrictions exist when providing maps of bacteria listed streams over a landownership map. The 2012 and 2016 licenses between the state of Oregon and counties contain use restrictions that prohibit public sharing of information based on the tax lot feature geometry (shapefiles) and specific ownership and tax lot identifier fields. However, the requested information is provided on separate maps within the TMDL. A map of bacteria impaired listed stream reaches are also provided in the Integrated Report online: (<https://www.oregon.gov/deq/wq/Pages/epaApprovedIR.aspx>) and a map of landownership or jurisdiction (with restricted features removed) is provided the Water Quality Management Plan.

BCNR#16: Suggested Change ID #34

Description: Rulemaking - Fiscal impact insufficient

Comment: On November 28, 2022, in the Fiscal Impacts Comments, the County requested that ODEQ evaluate the fiscal impacts based on objective information. This has not occurred.

Response: Evaluation of fiscal and economic impacts of a proposed rule is a required component of rulemakings in Oregon Administrative Rules Chapter 183.333. DEQ held two rule

advisory committee meetings for the Powder River Basin TMDL, in part, to discuss the potential fiscal impacts of the proposed rule including any potential impacts on small businesses. Committee members commented that no significant, adverse impacts to small businesses would occur as a result of the proposed rule. The draft fiscal impact content is made available to the public in advance of the rule advisory committee meetings on DEQ's website and discussed at the committee meetings, which are open to the public. The fiscal and economic impact content is also included in the Notice of Proposed Rulemaking for public comment. Notifications about public meetings and corresponding documents are provided by GovDelivery, opt-in email notification. Sign up online: https://public.govdelivery.com/accounts/ORDEQ/subscriber/new?topic_id=ORDEQ_41.

BCNR#17: Suggested Change ID #35

Description: Process - Water Quality Standards may not be attainable

Comment: DEQ has not sufficiently explained what happens after TMDL implementation if the water quality standard for E. coli cannot be met. What if implementation of best management practices is not sufficient to reduce bacteria loads to the freshwater recreational standard? Agricultural producers are concerned that DEQ will then require landowners to reduce the number of livestock on grazing lands, which would have a large economic impact.

Response: DEQ appreciates the opportunity to clarify this TMDL process and address landowner concerns. Issuing and implementing a TMDL is a necessary step toward achieving water quality standards and refining source assessments. A determination about whether water quality standards can be attained in a given location cannot be made prior to TMDL implementation. Because environmental response to bacteria reduction strategies takes time and the Powder Basin covers a large area, it is likely to take 10-20 years of implementation and adaptive management before measurable progress can be quantified. Management strategies recommended in the TMDL have been effective in reducing bacteria in other locations and DEQ is confident that improvements in water quality will also be seen in the Powder River Basin. Please note that the recommended management strategies by sources of fecal bacteria in the proposed Water Quality Management Plan do not include any requirements or recommendations to reduce numbers of livestock; rather, the TMDL document focuses on techniques that will help reduce direct deposition of manure in streams and protect riparian areas.

The TMDL is designed to attain the bacterial water quality standards so that all the existing, designated beneficial uses are protected. The designated beneficial uses of the Powder River Basin, as listed in OAR 340-041-0260 include: public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality. If it is determined that water quality standards are not achievable in specific river reaches after adequate TMDL implementation has taken place, based on regular review of Implementation Plans and adaptive management, then revisions to the TMDL or a use attainability analysis may be considered as a next step.

BCNR#18: Suggested Change ID #36

Description: TMDL documents - Timeline for attainment of water quality standards

Comment: What is the exact “timeline” for compliance? The answer of “its’ going to take decades” lacks meaning and negates the entire process.

Response: DEQ recognizes that implementation of best management practices and other management alternatives to reduce effects of nonpoint source pollution on waterbodies can take extended periods of time. In Section 4 of the Water Quality Management Plan, DEQ includes information based on experiences in nearby basins that sufficient reductions in E. coli could be attained within 20-30 years with implementation of best management practices. DEQ looks forward to working with Designated Management Agencies and other persons responsible for developing TMDL Implementation plans about the expected timelines for management implementation and expected water quality responses for different areas of the Powder Basin.

BCNR#19: Suggested Change ID #38

Description: Process - Explain why a TMDL is needed at this time

Comment: DEQ needs to explain why a TMDL is needed at this time. There are Agricultural Water Quality Management Plans already in place to protect and improve the ecosystem. Regulating with a TMDL does not seem necessary when there are already partnerships in place to support voluntary watershed restoration efforts. An adequate reason hasn’t been presented by DEQ as to what existing problem would be solved by this TMDL.

Response: The need for Total Maximum Daily Loads (TMDLs) under the Clean Water Act (CWA) is driven by the Act’s requirement for states to identify impaired waterways and develop plans for restoring water quality. The CWA further requires each state to develop Total Maximum Daily Loads for each impaired waterway segment and submit the draft TMDL to EPA for approval. DEQ’s 2022 Integrated Report lists multiple reaches within each of the Powder River Basin subbasins including, Powder, Burnt, and Brownlee, as impaired for E. coli bacteria. Some of these reaches have been categorized as impaired for E. coli bacteria since 1998 with additional listings added in 2010 and 2018. All E. coli listings were reassessed in 2018, with newer data confirming these impairments. As such, DEQ must develop and implement a bacteria TMDL that is approved by EPA or implement a TMDL developed by EPA. Additionally, reaches of the Powder River Basin are also listed as impaired for dissolved oxygen, temperature, pH and sedimentation, and DEQ is required to develop TMDLs for those parameters by 2030. TMDLs developed through Oregon’s process allows for communication and collaboration with federal agencies, other state agencies, and local governments.

BCNR#20: Suggested Change ID #39

Description: TMDL documents - Basin characterization is inadequate

Comment: The DRAFT Powder Basin Rules, Plan, and Technical documents do not describe the vast area or the thousands of square miles the Rules affect. This is important information that the public deserves to know. It also illustrates the difficulties in obtaining bacteria and other

TMDL standards in every waterbody within this huge area. The size of the Basin is just one of the reasons that standards are not attainable.

Please, edit the Rules, Plan, and Technical documents to include factual information on the Powder Basin.

The Powder River The Powder River is a tributary of the Snake River, approximately 153 miles (246 km) long, in northeast Oregon in the United States. It drains an area of the Columbia Plateau on the eastern side of the Blue Mountains. It flows almost entirely within Baker County but downstream of the city of North Powder forms part of the border between Baker County and Union County.

The Powder River's tributaries arise in the southern Blue Mountains in the Umatilla National Forest. The river's main stem begins in Sumpter, where McCully Fork, Cracker Creek and several smaller tributaries join, and flows east-southeast through the tailings of past dredge mining and into Phillips Reservoir. After exiting Phillips Reservoir, the river continues east for about 7 miles (11 km) before turning sharply north through the Bowen Valley and Baker City, Oregon. From here the river meanders the floor of the Baker Valley and passes by the cities of Haines and North Powder, where it is joined by the North Powder River. Here the river turns again sharply east-southeast, flowing through Thief Valley Reservoir, in a valley along the southern edge of the Wallowa Mountains. The river then transits the Lower Powder Valley and enters the Snake River on the Idaho–Oregon state line from the west, upstream from the Brownlee Dam at the Powder Arm of Brownlee Reservoir 11 miles (18 km) downstream from Richland.

The Powder River watershed drains 1,603 square miles (4,150 km²) of northeastern Oregon. There are three man-made reservoirs on the Powder River: Phillips Reservoir (behind Mason Dam), Thief Valley Reservoir, and also the Powder arm of Brownlee Reservoir at the Oregon–Idaho border at the confluence of the Powder and Snake Rivers.

In 1988, 11.7 miles (18.8 km) of the Powder River was designated Wild and Scenic. Between the Thief Valley Dam and the Oregon Route 203 bridge, this stretch flows through a rugged canyon with spectacular geologic formations.

The Burnt River The Burnt River is a 98-mile-long (158 km) tributary of the Snake River in eastern Oregon, United States. It enters the Snake near Huntington, Oregon, at a point upstream of the Powder River and downstream of the Malheur River, slightly more than 327 miles (526 km) from the Snake's confluence with the Columbia River. Draining 1,090 square miles (2,800 km²), it flows predominantly west to east.

The river begins at Unity Reservoir at the confluence of the North, West, Middle, and South forks of the river. The reservoir is slightly east of the Wallowa-Whitman National Forest in the Blue Mountains and slightly north of Unity. Unity Lake State Recreation Site adjoins the reservoir. As it leaves the lake, the river flows under Oregon Route 245, then runs east through the upper Burnt River Valley past Hereford and Bridgeport and, through the Burnt River Canyon, to Durkee. Turning generally south at Durkee, the river runs along Interstate 84 past Weatherby, Dixie, and Lime before flowing under the Interstate and turning east again. Shortly thereafter, it passes Huntington and reaches the Snake.

Brownlee Reservoir Brownlee Dam is a hydroelectric earth fill embankment dam in the western United States, on the Snake River along the Idaho-Oregon border (Washington County, Idaho in

and Baker County in Oregon). In Hells Canyon at river mile 285, it impounds the Snake River in the 58-mile-long (93 km) Brownlee Reservoir.

Response: DEQ appreciates the information provided by the commenter and agrees that the Powder Basin is a vast geographic area. Section 2 of DEQ's Technical Support Document provides relevant descriptions of the Powder River Basin's location, climate, hydrology, land use and geology, which are very similar to the information provided by the commenter. DEQ's documents provide reference to primary literature and studies published by the NRCS, USGS, NLCD, BOR, OWRD and others. More detailed information describing each of the subbasins can also be found in DEQ's Powder Basin Status Report and Action Plan (November 2013), which DEQ added reference to in the Technical Support Document. Because the material provided by the commenter does not include citations, DEQ is unable to verify the information and determine if any additional modifications to the TMDL documents are appropriate.

DEQ also clarifies that basin size is not a factor in determining whether water quality standards apply or are being attained in Section 4 of the TMDL document and Section 3 of the Technical Support Document. In alignment with federal Clean Water Act requirements, DEQ applies water quality standards that align with designated beneficial uses assigned to the basin by the Oregon Water Resources Division or Oregon Water Resources Commission. Pollutant sources and contributions vary across the basin and will thus require different approaches for restoration and management. DEQ develops TMDLs for different basins, subbasins, or waterbodies to assess pollutant sources consistently and develop pollutant allocations and water quality management plans that are tailored to each location. In this case, the Powder Basin bacteria TMDL also serves as a Protection Plan to ensure that streams that are attaining standards will continue or appropriate strategies are applied to achieve attainment.

Changes were made based on this comment.

BCNR#21: Suggested Change ID #70

Description: Process - Extend the public comment period

Comment: The time available for the public to review and to provide comment on the TMDL documents is insufficient. Extend the deadline to submit comments.

Response: During public notice, DEQ received multiple requests to extend the public comment period and appreciates the interest in the Powder River Basin TMDL for E. coli shown by community members and interested parties. DEQ extended the first and second public comment periods, including holding two in-person meetings in Baker City.

BCNR#22: Suggested Change ID #72

Description: TMDL implementation - Human waste from recreational activities degrades water quality

Comment: The Plan does not discuss the human uses and activities in, and adjacent to, waterbodies. It does not discuss the urban influences picked up in the data at the Powder River

behind the Library site. And, it does not discuss wildlife and bird impacts. Specifically, it does not discuss the inputs from municipalities, such as Baker City, into the Powder River. It is unclear what “land use information” was considered. The lands and water in Baker County are multiple use. For example, the Powder River below Mason Dam to Baker City is used for fishing, camping, picnicking, livestock watering, crop irrigation, wildlife/waterfowl/upland fowl watering, walking trails for people and dogs, stormwater runoff, and potentially seepage from old septic systems. You cannot tell from a map where all of the inputs occur, or from what source.

Management strategies focus on reducing livestock impacts on water quality rather than human activity or urban uses. Human waste in and near waterbodies during recreation also degrades water quality.

Response: DEQ agrees with Baker County that human uses adjacent to waterbodies may also affect water quality in the Powder River Basin. In Section 5 of the Technical Support Document, DEQ describes potential sources of fecal bacteria including those caused by human activity, such as residential septic systems and permitted wastewater and stormwater discharges. DEQ added language to the Technical Support Document to further describe potential E. coli contributions from septic systems and programs in place to oversee these on-site sewage treatment systems. DEQ also added language to the Technical Support Document and TMDL to describe potential contributions from Water Pollution Control Facilities. These permitted facilities manage and treat domestic waste without discharging to surface waters while remaining in compliance with permit conditions.

The Water Quality Management Plan includes descriptions of best management practices to reduce E. coli loads from human activities and pet waste in cities and parks. Implementation plans from counties and municipalities should include a description of local ordinances or other strategies relied upon to manage these sources of bacteria, where applicable.

Changes were made based on this comment.

BCNR#23: Suggested Change ID #86

Description: TMDL documents - Remove bias against agriculture - irrigation

Comment: The use of “irrigation season” and “non-irrigation season” - By using the term “irrigation”, the focus of the reader immediately goes to agriculture being the bad actor. It appears that ODEQ is intentionally leading the public to an outcome that is not based in fact. None of the provided data can be proved to be agricultural, crop and livestock derived. Instead of using “irrigation” use flow velocities (high, medium, and low), that can be accurately reflected in flow data and backed up with recorded cfs during the water sample collection.

Response: DEQ appreciates this comment. The use of terms “irrigation and non-irrigation seasons” was intended to help characterize hydrology in the region, which is influenced by retention in reservoirs and released through summer months. These terms were not intended to implicate a particular E. coli source as dominant throughout the basin. DEQ has altered terminology throughout the draft TMDL documents to use months rather than irrigation and non-irrigation seasons.

DEQ clarifies that ranges of flow velocities were used in TMDL analyses. Stream flows for each reach analyzed were categorized as high, medium-high, medium, medium-low, and low, and are presented in the Technical Support Document, Section 4. Sampled E. coli loads are also presented on the figures to visualize stream flow conditions when bacteria loads vary. Figures in the Technical Support Document show a long-term record of stream flow and monthly mean flow values for the Burnt River, the Powder River, and Pine Creek.

Changes were made based on this comment.

BCNR#24: Suggested Change ID #91

Description: TMDL - question about criteria used to identify harm

Comment: What are the criteria used to identify the harm? Was peer reviewed scientific literature used to identify the harm? Were comparable ecosystems utilized to compare and contrast the harm? (Systems that exist elsewhere in the western US with similar climate, ecology, geology, and rainfall?) Does the harm exist in equal amounts throughout the Powder River Basin or are there particular places where the harm is objectively more dangerous?

Response: The TMDL is structured to attain water quality standards to protect people and water contact recreation, but it will benefit all users of water. Irrigation and livestock watering are recognized as important beneficial uses in the Powder River Basin and will be protected through the implementation of this TMDL. Waters with high levels of fecal contamination pose a disease risk to people, livestock, and wildlife. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin. The TMDL program is a required element of the federal Clean Water Act. The Federal Government requires states to set water quality standards for pollutants and designate beneficial uses for waters of the state to ensure that waters can be safely used by humans, livestock, wildlife, and will support all other designated uses. When water quality impairments are identified, the federal Clean Water Act requires that states develop and implement TMDLs to restore water quality to meet established standards. Each state's TMDL, water quality standards, and beneficial uses must be reviewed and approved or disapproved by EPA. EPA's oversight provides a national perspective, national standardization, and a level of scientific peer review to ensure consistency across the West and the nation.

BCNR#25: Suggested Change ID #99

Description: TMDL documents - Sources of bacteria from wastewater treatment plants need to be included in TMDL - permits aren't protective

Comment: Why should municipalities be permitted to discharge sewage into the river for years while the agricultural community takes more of the blame for E. coli exceedances in the TMDL? Permitted facilities still contribute to the bacterial load. Baker City resumed discharge to the

Powder River and has been noted in news articles for exceeding permit limits. DEQ has not cited them or mentioned the City in the draft TMDL. Point sources need to be considered in the TMDL analyses as a contribution to E. coli loads.

Response: DEQ agrees that point sources of fecal bacteria, such as wastewater treatment plants, contribute to E. coli levels in Powder River Basin waters. As noted by the commenter, Baker City began the process of transitioning to a treatment process that would cease discharge to the Powder River but has needed to temporarily continue operations under a National Pollution Discharge Elimination System (NPDES) permit. DEQ administers this permit and has updated the draft TMDL documents to include E. coli loads from the wastewater treatment plant in allocations. NPDES permits contain extensive conditions for treatment and monitoring of wastewater that includes disinfection prior to discharge. DEQ will continue administrative oversight of all NPDES permit-holders in the Powder River Basin.

Changes were made based on this comment.

16. Comments from: Baker County Natural Resources/Parks

BCNR.1#1: Suggested Change ID #42

Description: Process - Provide comments and responses

Comment: Provide the comments submitted during the first public notice period along with responses from DEQ. The public is interested in reviewing answers to questions posed during the initial comment period.

Response: During the comment period, DEQ responded to requests for additional information about the TMDL by holding a meeting to discuss development of a Powder River Basin bacteria TMDL monitoring strategy on January 31, 2024, and an open house on February 1, 2024. Both meetings were convened in Baker City and open to the public. In addition to discussions held with community members at the open house, DEQ also prepared a fact sheet to provide answers to many of the questions raised during the first public comment opportunity and hearing. In keeping with OAR 340-042-0050(c) and OAR 137-01, DEQ will provide written responses to all comments and questions received during both public comment periods following consideration of all comments and revisions of the documents. DEQ's practice is to provide a summary of all comments and responses in a staff report for consideration by Oregon's Environmental Quality Commission during request for rule adoption.

17. Comments from: Baker City Public Works - Director

BCPW-D#1: Suggested Change ID #1

Description: Analyses - Baker City Waste Water Treatment Facility

Comment: The Baker City wastewater treatment plant is currently discharging to the Powder River but is not included in the draft TMDL documents. The TMDL analyses need to include this point source of bacteria and the TMDL documents updated accordingly.

Response: DEQ was notified that the Baker City Waste Water Treatment Facility will temporarily resume discharge of treated wastewater to the Powder River under a National Discharge Elimination System (NPDES) permit. DEQ included this point source in analyses and has provided an updated bacteria load allocations in the affected stream reach. DEQ has also assigned a bacteria wasteload allocation to the wastewater treatment facility. The TMDL documents have been updated to reflect these changes.

Changes were made based on this comment.

18. Comments from: Baker County ranchers NA

BCrN#1: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

BCrN#2: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide

excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

BCrN#3: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

BCrN#4: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20

sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

BCrN#5: Suggested Change ID #55

Description: Analyses - Assess point sources of bacteria from areas with high amounts of wildlife

Comment: Baker County is home to large numbers of geese and other “migratory” fowl as well as a number of elk feeding stations, both of which, due to high concentrations of animals in a small area, are very likely to be strong contributors to bacterial issues. A thorough survey of point sources such as these must be conducted as well, rather than randomly assigning an “indeterminate” point source to an area based on possible bacterial contamination that could have come in from another area due to varying stream flows.

Response: DEQ clarifies that bacterial contributions from waterfowl and elk are not considered point sources, even when concentrated in a small area. As noted in the TMDL, point sources are defined in OAR 340-045-001(17) as “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.” In the TMDL, DEQ considered bacteria from waterfowl, elk, and other wildlife to be background sources. Because DEQ was not able to separate background from human influenced nonpoint sources, such as domestic livestock, DEQ allocated a portion of the allowable bacteria load to a combined category of nonpoint and background sources.

DEQ agrees that wildlife is a potential source of E. coli pollution to surface waters in the Powder River Basin, particularly in areas where they congregate at artificial feeding areas. To help ensure that the congregating elk are not contributing to excess loads of bacteria to nearby river reaches, DEQ has named ODFW as a Designated Management Agency in the TMDL. ODFW is required to develop an E. coli TMDL Implementation Plan for the feeding areas. DEQ also acknowledges that additional data may be useful in distinguishing between elk and livestock contributions in some areas of the Powder River Basin. In developing and carrying out TMDL implementation plans, some DMAs and other responsible persons are expected to identify locations under their jurisdiction that should be prioritized for further monitoring or assessments. Monitoring and assessment methods may include additional water quality data collection or bacteriological source tracking (BST). These methods may be useful in determining which management strategies to use and where they will be most effective. DEQ does not expect management of wildlife sources of fecal contamination outside of those areas where wildlife congregates at the artificial feeding stations. Please also see other responses within this document for further discussion about appropriate uses for DNA analysis/BST methods.

Changes were made based on this comment.

BCrN#6: Suggested Change ID #94

Description: Process - TMDL five year extension for more data collection - use disinterested third-party

Comment: To date, Baker County's various environmental organizations have offered to be the surveying and monitoring agencies for bacterial loading in the Basin and would be using an outside, disinterested, third party with no agenda to analyze the data gathered. We feel that local control by agencies intimately familiar with the area and the Basin is a much better solution than "regulation by remote control", which is essentially what this rule is proposing.

Response: DEQ appreciates requests to work with others to cover various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ makes efforts to be inclusive of local and regional community members, as well as federal, state, and local governments in the TMDL development process.

19. Comments from: Barbara Meyer

BM#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

20. Comments from: Burnt River Irrigation District

BRID#1: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

BRID#2: Suggested Change ID #12

Description: TMDL documents - Water conveyance districts (adjust summary)

Comment: Water conveyance districts should not be designated in the TMDL/WQMP rules as responsible persons (or Designated Management Agencies)

Remove Burnt River Irrigation District as a responsible person

Response: DEQ recognizes that implementation of best management practices and other management alternatives to reduce effects of nonpoint source pollution on waterbodies can take extended periods of time. In Section 4 of the Water Quality Management Plan, DEQ includes information based on experiences in nearby basins that sufficient reductions in E. coli could be attained within 20-30 years with implementation of best management practices. DEQ looks forward to working with Designated Management Agencies and other persons responsible for developing TMDL Implementation plans about the expected timelines for management implementation and expected water quality responses for different areas of the Powder Basin.

Sections of the TMDL and Technical Support Document include irrigation districts, drainage districts, and other water delivery and conveyance systems that influence the quantity and timing of water delivery to downstream river reaches within the basin. Return flows can enter waters of the state through ditches, pipes, and overland flows after contacting manure in fields. Owners and operators of these systems are included as responsible persons in the Water Quality Management Plan because maintenance and management of these systems could impact bacteria loads. To date, none of the identified water conveyance districts (including the Burnt River Irrigation District) confirmed that maintenance and management of their system(s) do not impact bacteria load contributions to Powder Basin waterways. The Water Quality Management Plan will continue to identify water conveyance districts (including BRID) as persons responsible for TMDL implementation. The major irrigation districts in the Powder Basin have responsibility to develop approvable implementation plans within 18 months of TMDL issuance. DEQ expects these plans to be limited for certain aspects such as operations and maintenance, systems, or components that could impact delivery of bacteria to waters of the state. These implementation plans may be district-specific, or the irrigation entities may find efficiencies in collaboration of multi-district plans or a unified plan. During plan development, it will be necessary to describe the geography and function of each system such that assessment can be completed to determine where management strategies are needed and what strategies will be feasible and effective.

BRID#3: Suggested Change ID #13

Description: Data - flow gage near Clarks Creek

Comment: DEQ's analyses used flawed flow data. At the Clarks Creek measuring and collection area, the flow data used from Idaho Power was proven to be inaccurate for many years. The site has never been a good control point for flow data.

Response: DEQ appreciates the concern over the accuracy and quality of data used from the Idaho Power flow gage at Clarks Creek (Station 13274020 - Burnt River near Bridgeport, Oregon). DEQ was not aware of the information provided by the commenters. DEQ

recommends that concerns or revisions to flow data be included in the TMDL implementation plan developed by DMAs responsible for the reach of the Burnt River below Clarks Creek.

BRID#4: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

BRID#5: Suggested Change ID #15

Description: Water Quality Assessments - Impairment locations on the Burnt River are unclear

Comment: Impairments on Indian Creek to Marble Creek is poorly identified because Indian Creek starting point is on private land so no sampling or flow data collection could take place.

Response: Every two years, DEQ reports to EPA on the status of water quality across the state in Oregon's Integrated Report. DEQ divides surface waterbodies into fixed Assessment Units to assess water quality statewide. DEQ's assessment process is to pool all available data within an assessment unit for river and streams, lakes and reservoirs, and estuaries, and compare sampling results to water quality standards. Data within assessment units are evaluated using the assessment protocols for each specific pollutant to determine if the pollutant exceeds a water quality standard that protects a beneficial use and is a cause for beneficial use impairment (see section 3.3.3 in the 2022 Assessment Methodology <https://www.oregon.gov/deq/wq/Documents/IR22AssessMethod.pdf>).

Assessment units are not dependent on the ownership of land along the stream reaches. Data for the Burnt River between Indian Creek to Marble Creek (AU_ID = OR_SR_1705020205_05_102805) were pooled together and the assessment categorization is applicable for the entire assessment unit.

BRID#6: Suggested Change ID #16

Description: Data - High variation in data suggests sampling error

Comment: The E. coli data presented by DEQ in the TMDL varies widely at each sample site, even within very short timeframes (days). These large discrepancies are surprising and suggest sampling errors.

Response: DEQ appreciates the opportunity to clarify the importance of variation in E. coli concentrations over time at different locations. Variation, sometime large, in measured E. coli concentrations over time is a common observation in many areas, including in other Oregon basins with mixed land uses such as the Rogue, Willamette, and Malheur. Variation in E. coli numbers at the same site over multiple days suggests changes in inputs from upstream sources and differences in flow across days (documented in the variation of flow across days in the provided data). DEQ developed Quality Assurance Project Plans for this project and has made them available on the Powder TMDL website, <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. Additional details about sampling and laboratory methods can be found in the plans.

BRID#7: Suggested Change ID #17

Description: Data - Older data should not be used in the TMDL

Comment: Comments dispute usage of very old sample data at all sites on the Burnt River. Outdated sampling won't take into consideration the improvements made by landowners for the last 10 years. Bacteria water quality improvements from ODA and SWCD is not shown in the data because it was collected between 2007 and 2013.

Response: DEQ agrees that water quality improvements resulting from recent watershed restoration and improvement projects conducted since 2013 are mostly not represented in the E. coli sample data in the Powder River Basin Bacteria TMDL. As part of regular water quality assessments, DEQ conducts analysis of trends in water quality data collected at long-term monitoring sites in the basin. Information about the data and trend analyses can be found in Section 5.1 of the Technical Support Document. Data from the past 24 years (2000-2024) of E. coli samples collected at three long-term monitoring stations: 1) Powder River at Highway 7 (11490-ORDEQ), 2) Powder River at Hwy 86 (10724-ORDEQ), and 3) Burnt River at Snake River Road (11494-ORDEQ), indicate that exceedances of the E. coli standard are still occurring at these locations. DEQ has updated the Technical Support Document to add the most recent samples to the trend analyses. DEQ is encouraged by the improvements to land management practices in the Powder River Basin and recognizes the immense efforts made by landowners, ODA, the SWCD, and others. DEQ understands that these projects are beneficial for water quality and that it can take time to see overall water quality improvement resulting from changed management practices on individual properties. DEQ recommends these improvements be documented and promoted within the region and included in TMDL reporting. As part of the TMDL process, monitoring results and on the ground actions will be reviewed every five years to record progress, update actions, and to address barriers to success. These

five-year reviews provide opportunities to promote the successes of individual projects and where appropriate document progress in the form of official success stories.

Changes were made based on this comment.

BRID#8: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

BRID#9: Suggested Change ID #20

Description: Data - Additional data needed for source assessment

Comment: DEQ did not collect data in a way that corresponds to specific sources. Many more current sites are needed above and below individual potential sources. Monitoring requirements by Responsible Persons are burdensome and may not be necessary if data used in the proposed TMDL were current and adequate.

Response: DEQ appreciates the opportunity to clarify the role of data collection and analysis for development of the proposed TMDL. DEQ collected over 600 bacteria samples from more than 20 sample sites across the Powder River Basin and used data from stream flows in the basin measured at gages maintained by the US Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. DEQ relies on locations with public access to take water samples. The analyses allowed DEQ to calculate the total maximum daily load for E. coli in river reaches analyzed and measure where, and by how much, exceedances of the acceptable load occur. DEQ has added language to Section 5.1 of the Technical Support Document to clarify this approach.

The intent of the proposed TMDL is to provide the targets for E. coli percent reductions needed to those with source specific jurisdiction, as a first step in assessing the basin. The commenters' proposed approaches should be considered during development of TMDL implementation plans

by appropriate Designated Management Agencies and other responsible persons. These are necessary steps toward adaptive management of water quality in the Powder River Basin.

BRID#10: Suggested Change ID #85

Description: TMDL documents - Remove bias against agriculture

Comment: Revise TSD to remove bias and disrespect: In the Draft TSD in table 5.2.1-page 69, Livestock grazing and pasture irrigation, shows bias towards animal agriculture without proof in the DEQ conclusions and are only based on assumptions. The Draft Water Quality Management Plan (WQMP) further shows the bias towards cattle as the main contributor based on assumptions instead of valid data. This section also concludes that the ag water quality program (Burnt River LAC) is ineffective in addressing E. coli. This conclusion is a direct slap in the face to ODA and the 1010 committee in their work over the last several years. The committee can only address the Water Quality Impairments that have a standard tied to them, which are temperature, sediment, and algae and in our (BRID) opinion have done a great job addressing these issues. Until now the committee has not had a standard for E-coli but are very capable of addressing it in the future.

Response: Thank you for this comment. DEQ has edited content throughout the draft TMDL documents to clarify that the combined category of background and nonpoint sources includes contributions of E. coli from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands from annual or seasonal livestock populations. DEQ understands that contributions of fecal bacteria from individual sources will vary by location and over time. It is not DEQ's intention to conclude that a single source is the primary contributor of E. coli in the basin. Rather, the proposed TMDL is intended to convey information about all potential point and nonpoint sources of E. coli, to calculate an allowable E. coli load, to provide information about reduction targets, and to begin a process of adaptive management that will lead to improved water quality. DEQ has revised the draft TMDL documents to clarify the varied sources of E. coli from within the nonpoint sources and background category, and to emphasize that primary sources of fecal bacteria can vary by location and over time.

DEQ has removed use of the terms "irrigation and non-irrigation seasons" and replaced these with specific months. These terms were used to help characterize hydrology in the region that is influenced by water retention in reservoirs in the spring for release through summer months and were not intended to implicate any one E. coli source as dominant throughout the basin.

DEQ also acknowledges that there are many landowners and groups in the Powder River Basin that provide examples of land stewardship and are currently implementing best management practices to protect water quality. TMDL implementation requirements are intended to be complementary to existing natural resource management plans. As noted in the comment, ODA's Agricultural Water Quality Area Plans and Strategic Implementation Area processes play a vital role in protecting water quality in the Powder River Basin. Content in the proposed Water Quality Management Plan includes communication between DEQ and DMAs to facilitate TMDL implementation planning and provides direction about potential gaps in current programs that may need additional measures to achieve goals of the E. coli TMDL.

DEQ appreciates efforts of the 1010 committee and Burnt River Irrigation District in considering water quality standards and taking steps to improve water quality. In 1986, EPA published recommended water quality criteria to protect those engaging in full-body contact recreation, such as swimming and surfing, in both fresh and coastal waters. These criteria were based on epidemiological studies conducted in the Great Lakes and northeastern United States that linked various bacterial indicators with incidences of gastrointestinal illness. Analysis of the studies showed that the bacterial indicators E. coli and enterococcus were the best indicators of illness in freshwater and that enterococcus was the best indicator in coastal waters. The Environmental Quality Commission (EQC) adopted the enterococcus criteria for freshwaters and non-shellfish growing estuarine waters to replace the fecal coliform criteria as of July 1, 1995. Then, in 1996, the EQC replaced the enterococci criteria with E. coli criteria for “freshwaters and non-shellfish harvesting estuaries”.

<https://www.oregon.gov/deq/FilterDocs/BacterialIssuePaper.pdf.pdf>

Oregon’s Bacteria Standards can be found in OAR 340-041-0009

<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=68695>

Changes were made based on this comment.

BRID#11: Suggested Change ID #92

Description: Process - TMDL extension for more data collection - joint five year study

Comment: The Burnt River Irrigation District proposes a joint five-year detailed Water Quality Study with DNA and full flow data collection before TMDL rules are adopted. This would be working collaboratively with other experts and advisory groups within the Powder River Basin.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation.

21. Comments from: Barbara Taylor

BT#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife,

scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

BT#2: Suggested Change ID #98

Description: TMDL documents - Wild and Scenic designated waters - No plan to clean it up

Comment: Since the Powder River is covered under the Wild and Scenic Rivers Act, I am dismayed to learn that, in spite of the river water exceeding water quality standards for bacterial contamination, there is no plan to clean it up. This has apparently been the case for two decades. Federal and state law require such a plan.

Response: DEQ has updated both the TMDL and TSD documents to include descriptions of the two river reaches in the basin that were designated in 1988 as Scenic under the federal Wild and Scenic Rivers Act of 1968. The reaches include a 6.4-mile reach of the North Powder River from its headwaters in the Elkhorn Mountains to the Wallowa-Whitman National Forest boundary and an 11.7-mile reach of the Powder River from Thief Valley Dam to the Highway 203 bridge (National Wild and Scenic River System, 2024). Multiple agencies and organizations have been working locally within the basin to implement programs and provide monitoring to help coordinate projects within the area. Some of the agencies include: Oregon Department of Agriculture, Oregon State University, Malheur Soil and Water Conservation District, USDA-National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin and these efforts will take time to implement. This Powder River Basin TMDL covers all freshwater perennial and intermittent streams in the Powder River Basin (and a small portion of the Malheur Basin - Moore's Hollow assessment unit) and will help to guide restoration actions protect and enhance water quality. To make sure that the basin is moving the right direction monitoring results and the implementation of actions will be reviewed every five years as part of adaptive management to track progress, highlight successes, and to address any barriers to implementing on the ground water quality projects.

Changes were made based on this comment.

22. Comments from: Baker Valley SWCD Board

BVSB#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

BVSB#2: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

BVSB#3: Suggested Change ID #73

Description: Process - Clarify why bacteria is a water quality problem

Comment: It is not clear why bacteria is a problem. There are billions of species of bacteria. Why is E. coli selected as a primary concern for water quality?

Response: The TMDL addresses Escherichia coli, commonly called E. coli. EPA's E. coli fact sheet explains "E. coli is considered an indicator organism, used to identify fecal contamination in freshwater and indicate the possible presence of disease-causing bacteria and viruses (pathogens). Individuals who swim or come in contact with water with elevated levels of E. coli and other fecal indicator organisms are at an increased risk of getting sick because of potential exposure to fecal pathogens." (https://www.epa.gov/system/files/documents/2021-07/parameter-factsheet_e.-coli.pdf)

In 1986, EPA published recommended water quality criteria to protect those engaging in full-body contact recreation, such as swimming and surfing, in both fresh and coastal waters. These criteria were based on epidemiological studies that linked various bacterial indicators with incidences of gastrointestinal illness. Analysis of the studies showed that the bacterial indicators E. coli and enterococcus were the best indicators of illness in freshwater and that enterococcus was the best indicator in coastal waters. The Environmental Quality Commission (EQC) adopted the enterococcus criteria for freshwaters and non-shellfish growing estuarine waters to replace the fecal coliform criteria as of July 1, 1995. Then, in 1996, the EQC replaced the enterococci criteria with E. coli criteria for "freshwaters and non-shellfish harvesting estuaries". (<https://www.oregon.gov/deq/FilterDocs/BacterialIssuePaper.pdf.pdf>)

Oregon's Bacteria Standards can be found in OAR 340-041-0009 (<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=68695>)

23. Comments from: Bob Harrell

BbH#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

BbH#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL

website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

BbH#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

BbH#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide

excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

BbH#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

BbH#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer

data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

24. Comments from: Bruce Honeyman

BrH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

25. Comments from: Chris Gyllenberg

CG#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP

documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

CG#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and

the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

CG#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental

Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

CG#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

CG#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

CG#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

26. Comments from: Cindy Haws

CH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

27. Comments from: Carolyn Kulog

CK#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

28. Comments from: Craig Lacy

CL#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin.

Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

29. Comments from: Cassedy Owens

CO#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

CO#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might

reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

CO#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the

identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

CO#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where

significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

CO#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

CO#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

30. Comments from: Chris Stratton

CS#1: Suggested Change ID #7

Description: TMDL documents - Responsible persons definition

Comment: I interpret that every person in the basin seems to be “a responsible person” which means they all must develop, submit, implement and revise implementation plans.

Response: Although DEQ acknowledges that “every individual that bears responsibility for improving water quality in the Powder River Basin” and “all people that live, work and recreate in the watershed can take steps to reduce pollution and protect or restore water quality to attain standards and designated beneficial uses,” the TMDL does not designate every person in the basin as a responsible person. In accordance with OAR 340-042, DEQ designates entities as responsible persons based on their jurisdiction, ownership, or control over sources of pollution. Table 5.1 in the WQMP presents the entities named as responsible parties for the Powder River Basin bacteria TMDL and indicates which must develop TMDL implementation plans. Sections 5.1 and 5.2 provide additional detail as to the responsibilities of each of these responsible persons. Section 5.3 provides the required elements of implementation plans.

CS#2: Suggested Change ID #19

Description: TMDL documents - Bias against agriculture

Comment: It is offensive that DEQ grouped non-point sources into one category but blamed cattle for 90% of E. coli. I have spoken to several of the DEQ representatives in length and have read the literature they have available and have never seen or heard anything that says they estimate that 90% of the contaminates are from agriculture.

Response: DEQ appreciates the comment and opportunity to provide clarification about the draft TMDL load allocations. Changes were made to the proposed TMDL.

Section 9 of the draft TMDL summarizes the percent E. coli load allocations for point and non-point sources in each of the river reaches analyzed and reflects the amount of E. coli that can be present in surface waters while still meeting water quality criteria. As the commenter noted, the combined category of background and non-point sources of E. coli includes contributions from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by

the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands with annual or seasonal livestock populations. Together, these non-point and background sources are allocated 89 percent of the total maximum daily load for E. coli in most reaches analyzed, and from 42.9 to 88 percent in two reaches that also contain E. coli sourced from wastewater treatment plants. Please note that the draft TMDL documents have not assigned a specific allocation to cattle, as this has not been quantified. DEQ has also revised language in the draft TMDL documents to clarify the contributing sources of E. coli included in the non-point source category, and to highlight the importance of additional assessments to verify primary E. coli sources during TMDL implementation.

Changes were made based on this comment.

31. Comments from: Chris Colton

ChC#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

ChC#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

ChC#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an

effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

ChC#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

ChC#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

ChC#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

32. Comments from: Cheryl Martin

ChM#1: Suggested Change ID #29

Description: Data - Percent reductions of bacteria span a broad range and don't make sense

Comment: The commenters are concerned about the targets for bacteria percent reductions stated in the TMDL in part because it is unclear where they came from. The percent reductions required across stream reaches analyzed also span a wide range (40 - 95%), which also causes confusion and could indicate a moving goal post. Baker County also asks DEQ to explain this statement from the TMDL, "Because differing sources contribute differing magnitudes of bacteria during differing flow conditions, DEQ chose to use the maximum observed concentration to calculate reductions needed across all flow categories and then chose the maximum reduction across all areas."

Response: The range of bacteria reduction percentages needed (40% to 95%), cited by the commenter, is a summary of excess E. coli loads across all nonpoint and background sources and was presented in the draft Water Quality Management Plan, Table 2.0a. This is a summary of all stream reaches analyzed based on the flow category with the highest observed exceedance of the water quality criteria, and can be found in more detail in the TMDL and Technical Support Document tables. Excess E. coli loads are expressed as a percent reduction that is needed, based on currently calculated loads. DEQ presented the range to summarize information in the TMDL document, and these numbers do not represent a moving goal. Please note that these location-specific excess loads are not regulated requirements, like permit limits. Instead, these targets are a collective goal across sources by implementing proven management strategies, which DEQ acknowledges to have varying applicability and potential effectiveness depending on location and current conditions. The Adaptive Management Process used in TMDL implementation relies on regular reporting and updated monitoring data to assess progress toward meeting water quality targets and allows for adjustment of activities to meet these targets.

The quoted statement referenced by Baker County was taken from Section 9.3 of the draft TMDL, which describes how a margin of safety was derived and included in the TMDL calculations. The statement highlights that E. coli levels are variable over time, based on changes in bacteria sources and seasonal river flows. The referenced statement provides a description of methods used to establish the necessary bacteria reduction target that will ensure attainment of water quality standards at all flow categories in each of the reaches analyzed, regardless of seasonal variation. For each river reach analyzed, DEQ determined the maximum percent reduction needed to achieve the E. coli concentration criteria under all flow conditions (low, medium-low, medium, medium-high, and high flows) and applied it as the target across all flows. This approach ensures that E. coli standard will be met under all flow conditions and seasons for specific areas draining to identified reaches. This approach is consistent with other EPA approved TMDLs in Oregon. The percent reduction of E. coli is necessary to attain water quality standards regardless of source.

ChM#2: Suggested Change ID #32

Description: TMDL documents - Management strategies lack expertise and do not always apply

Comment: Waterbodies are unique and require professional, local knowledge in order to be properly managed. DEQ does not have the necessary information about land use or expertise to ensure appropriate management strategies are proposed in the TMDL documents. Some of the proposed strategies for livestock management are not feasible in every location.

Response: The Water Quality Management Plan and Fiscal Impact Statement recognize that appropriate and effective management strategies will differ from one location to the next. Examples provided in the documents offer a menu of management strategies that can be used to meet the targets established in the Powder River Basin bacteria TMDL. The strategies and practices presented in the document are adapted from published sources, including U.S. Department of Agriculture Natural Resources Conservation Service (Field Office Technical Guide - NRCS 2022) and the State Index of Conservation Practice Standards for Oregon (NRCS, 2022). DEQ also used the categories and language from the Oregon Watershed Enhancement Board's Oregon Aquatic Habitat Restoration and Enhancement Guide and Oregon Watershed Restoration Inventory Online List of Treatments. To assist with implementing strategies, multiple agencies and organizations will be working locally to help coordinate programs within the Powder River Basin. Some of these agencies include: Oregon Department of Agriculture, Oregon State University, Malheur Soil and Water Conservation District, USDA-National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. Monitoring results and on the ground actions will be reviewed every five years as part of adaptive management to record progress, update actions, and to address barriers to success.

ChM#3: Suggested Change ID #35

Description: Process - Water Quality Standards may not be attainable

Comment: DEQ has not sufficiently explained what happens after TMDL implementation if the water quality standard for E. coli cannot be met. What if implementation of best management practices is not sufficient to reduce bacteria loads to the freshwater recreational standard? Agricultural producers are concerned that DEQ will then require landowners to reduce the number of livestock on grazing lands, which would have a large economic impact.

Response: DEQ appreciates the opportunity to clarify this TMDL process and address landowner concerns. Issuing and implementing a TMDL is a necessary step toward achieving water quality standards and refining source assessments. A determination about whether water quality standards can be attained in a given location cannot be made prior to TMDL implementation. Because environmental response to bacteria reduction strategies takes time and the Powder Basin covers a large area, it is likely to take 10-20 years of implementation and adaptive management before measurable progress can be quantified. Management strategies recommended in the TMDL have been effective in reducing bacteria in other locations and DEQ is confident that improvements in water quality will also be seen in the Powder River Basin. Please note that the recommended management strategies by sources of fecal bacteria in the proposed Water Quality Management Plan do not include any requirements or recommendations to reduce numbers of livestock; rather, the TMDL document focuses on techniques that will help reduce direct deposition of manure in streams and protect riparian areas.

The TMDL is designed to attain the bacterial water quality standards so that all the existing, designated beneficial uses are protected. The designated beneficial uses of the Powder River Basin, as listed in OAR 340-041-0260 include: public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality. If it is determined that water quality standards are not achievable in specific river reaches after adequate TMDL implementation has taken place, based on regular review of Implementation Plans and adaptive management, then revisions to the TMDL or a use attainability analysis may be considered as a next step.

33. Comments from: Cliff Mitchell

CIM#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt

Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

34. Comments from: Caroline Chalmers

CrC#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

35. Comments from: Curtis Martin

CrM#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

CrM#2: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

CrM#3: Suggested Change ID #93

Description: Process - TMDL five year extension for more data collection, planning, and data protocol

Comment: Mink Creek Study, it will provide you with an example of what we here in our Basin would like to pattern the further research/data collection, similar to what occurred in Idaho, on that drainage. Wanting to stay brief in this communication, these are several points where we want to have additional discussion concerning the research/data protocol. 1. Increase the

number and distribution of monitoring stations, with up-to-date information. 2. Attain specific identification of the origin of the bacteria (E.coli), causing the water quality impairment. Must be as accurate and transparent in finding the source(s) of fecal pathogens, as is possible. 3. Recognize the recent (last five years) significant changes of irrigation practices and management, which emphasizes the need for new and continuing water sampling/ testing to occur. 4. A comprehensive, systems-based study that involves a sufficient number of monitoring stations for multiple water quality indicators(e.g., bacteria, nutrients, temperature, DO, etc.) is needed. It is important that the relationships between land management/land cover and environmental variables influencing water quality indicators are properly documented, so that proper scientific focus can be made in case areas of concern are identified. These are just some of the key points to be considered going forward, with establishing a TMDL program that is as factual, science based, and relevant to the Powder Basin Watershed as possible. I sincerely look forward to being part of the discussions, moving forward collaboratively, and in partnership with Oregon Department of Environmental Quality, having further data collection/analysis, and working toward proactive, solution based outcomes.

Response: DEQ appreciates the comment to have partnerships that are inclusive of varied community interests for monitoring and assessment of E. coli and other pollutants. The following content is a review of the TMDL development process for clarifications and descriptions about how DEQ collaborates with communities.

Overall, TMDL development can be understood using three simplified steps. They are:

- 1) Identification of impaired waters. The Integrated Report includes an assessment of each water body where data are available, and the list of waters identified under Section 303(d) as water quality limited and needing a TMDL. Waters may be added to the 303(d) list based on evaluation of new data, application of new or revised water quality standards, or information showing water quality has declined. Waters may be removed from the 303(d) list when TMDLs or other control measures have been established to improve water quality, when data show water quality has improved, and in some cases when water quality standards are revised. The Integrated Report is online: <https://www.oregon.gov/deq/wq/Pages/WQ-Assessment.aspx>.
- 2) TMDL development: Develop a TMDL using available data for the water quality impairment(s), identification of potential sources contributing to the impairment(s), and allocations of identified sources (or source categories) necessary to meet water quality standards. This can include groupings such as combined nonpoint and background sources, and NPDES permitted point sources.
- 3) Implement the TMDL: DEQ works with other Designated Management Agencies, e.g., Oregon Department of Agriculture, Baker County, the U.S. Forest Service, and local community partners to develop targeted information to identify sources, and to develop monitoring plans and management activities to assess and improve water quality.

The Water Quality Management plan is the general plan and framework for implementation of the TMDL. The framework is designed to work in conjunction with detailed plans and analyses provided in sector-specific or source-specific implementation plans. The implementation plans prepared by Designated Management Agencies that rely on the WQMP framework are intended to use an adaptive management approach during which monitoring of water quality, including responses to management activities, inform further refinement, or different management approaches to restore water quality.

The Mink Creek study is an excellent example of TMDL implementation and the adaptive management cycle in action. The 2010 Idaho TMDL identified Portneuf River (of which Mink Creek is a tributary) as having nonpoint sources of E. coli and those sources being potentially important for water quality impairments throughout the basin. Subsequent sampling continued to suggest impairments due to E. coli with cattle as an identified potential source. Through targeted Bacteria Source Tracking conducted by the University of Idaho, other human and wildlife sources were identified that supported optimizing an approach to reduce E. coli loading in the waters.

DEQ agrees that expanding the number of monitoring sites and frequency of monitoring will be important for transparency and clarity when looking at the Powder River Basin status, trends, and potential sources of E. coli. Building this monitoring approach will add to the data already collected as part of the TMDL development and ongoing ambient monitoring in the basin. New information collected at the TMDL sample locations and expanded locations will help to evaluate the effectiveness of recently implement conservation management practices and to provide additional insight into priority needs to improve water quality in the basin.

DEQ understands that source identification is important for identifying appropriate actions to improve water quality. DEQ adds that the explanation of the TMDL process and explanations about source categories amended into Section 7.1 of the TMDL and Section 5.2 of the Technical Support Document clarify the role of source identification in the TMDL process.

DEQ has considered comments about the attribution of specific nonpoint sources and has revised the language to identify potential nonpoint sources without ranking of importance. The Water Quality Management Plan outlines potential approaches for E. coli reductions, including Bacteria Source Tracking, that can be used in targeted watersheds to refine source attribution of E. coli loading.

During implementation of this TMDL and development of future TMDLs for water quality indicators listed by the commenter, DEQ will work with the local community to expand water quality monitoring and to study local causes and solutions to water quality degradation. DEQ agrees that evaluating hypothesized relationships between water quality and land characteristics will be critical for determining, testing, and improving the effectiveness of water quality management practices. This science-based adaptive management cycle is a critical part of TMDL implementation and will enable the community to optimize water quality management with agricultural practices and other important activities in the basin. DEQ looks forward to discussing this approach with the commenter and other community members.

Changes were made based on this comment.

36. Comments from: Casey Martin

CsM#1: Suggested Change ID #46

Description: TMDL Process - More public and local involvement is needed

Comment: Overwhelmingly evidenced from the two meetings in Baker City; there needs to be more time to analyze and revamp data collected, and more public involvement and clarity as to

the potential costs and other ramifications that monitoring would impose on stakeholders of the Basin. Please allow more local public involvement and better, more consistent data and science before moving forward with TMDL monitoring.

The time frame for any implementation needs to be dialed back. Baker County citizens and organizations such as Baker County Commission, the several soil and water conservation districts, Natural Resources Conservation Service (NRCS), and Oregon Department of Fish and Wildlife (ODFW) should have all been involved during the formulation of this rule. We are asking that you work with us, not against us.

Response: Thank you for your comments regarding public participation. DEQ has attended, provided information and engaged in a variety of meetings and forums as it was planning and developing this TMDL. This includes providing information at the Oregon Department of Agriculture Local Advisory Groups and holding two public rule advisory committee meetings that included representatives from ODA, ODFW, ODF, Baker County SWCD, Burnt River Irrigation District, U.S. Bureau of Land Management, Power Basin Watershed Council, Baker County and a community representative for local landowners. During the public comment period, DEQ held a public hearing and two additional meetings in the community. All meeting materials, meeting summaries, and public notice documents are posted online on the rulemaking web page: <https://www.oregon.gov/deq/rulemaking/Pages/PowderTMDL.aspx>.

DEQ will continue to engage with the community and partner agencies following TMDL issuance. DEQ looks forward to convening meetings and work sessions to collaborate on determining where and when implementation makes sense, how to acquire and leverage funding to implement monitoring and strategies and to collaboratively monitor and document water quality. These meetings and discussions will inform agencies' (such as ODA and BLM) development of implementation plans specific to each agency's jurisdiction, as well as a monitoring strategy to gauge progress and adaptively manage implementation.

37. Comments from: David & Karen Andruss

D&KA#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

38. Comments from: Dean Defrees

DD#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

DD#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

DD#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft

TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

DD#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local,

state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

DD#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

DD#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of

the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

39. Comments from: Dee Dee and J Tabor Clarke

DD-JTC#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

DD-JTC#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

DD-JTC#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in

identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

DD-JTC#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

DD-JTC#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

DD-JTC#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

40. Comments from: David Grant

DG#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

41. Comments from: Doug Heiken

DH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

42. Comments from: Deryl Lefgett

DL#1: Suggested Change ID #54

Description: Analyses - Source tracking methods

Comment: While DEQ's fact sheet indicates that DNA tracing of fecal bacteria isn't currently EPA-approved, it's crucial to recognize the value of source tracking methodologies like Bacterial Source Tracking (BST) endorsed by the EPA. By accurately identifying contamination sources, we can tailor mitigation efforts effectively, avoiding wasted resources. Moreover, integrating source tracking enables regulatory agencies to prioritize interventions where they're most needed, significantly enhancing water quality management efforts. In conclusion, integrating source tracking into E. coli testing protocols is crucial for comprehensive water quality management. By accurately identifying contamination sources, we can develop targeted mitigation strategies that yield tangible improvements in water quality and ecosystem health. I urge the DEQ to consider incorporating source tracking techniques into the TMDL draft to ensure an effective approach to addressing E. coli contamination in Oregon's water bodies. Community input and transparency throughout this process are vital for successful outcomes.

Response: DEQ appreciates this comment and agrees that targeted application of EPA-endorsed Bacterial Source Tracking (BST) methods can be of great use in implementing fecal indicator bacteria TMDLs. BST can provide important information for optimizing practices to improve water quality and reduce contamination sources, including wildlife, human, and livestock sources.

BST is used to refine appropriate management actions to reduce specific sources of bacteria. DEQ supports the use of EPA-endorsed methods in TMDL implementation and can work with local partners to develop study designs and identify funding sources to support BST studies. The proposed TMDL, Water Quality Management Plan, and Technical Support Document were updated to include the role of BST in TMDL implementation.

Changes were made based on this comment.

DL#2: Suggested Change ID #56

Description: Analyses - Water storage and withdrawals should be considered during source analyses

Comment: The TMDL and WQMP should better discuss whether water withdrawals and/or water storage contribute through flow reduction, in any parts of the waterways at any times, to the failure of waterways to meet water quality standards. If so, water withdrawals and storage should be listed as additional nonpoint sources. According to the TMDL documents, bacteria water quality is flow dependent. (TMDL, p. 13.) Thus, water withdrawals and water storage have the potential to be nonpoint sources of pollution through flow reduction, in addition to contributing through reservoir refill and return flows as described in the TMDL documents. If flow reductions are not a contributing factor because they do not coincide with periods when bacteria levels exceed water quality standards, that should be better explained in the documents to show that the impact of flow reductions was adequately considered. Also on this point, the TSD (p. 10) says that irrigation diversions were not factored into calculations for the TMDL and WQMP. The TMDL documents should better explain that, including the calculations referenced and why diversions were not factored into them.

Response: DEQ appreciates the opportunity to discuss how water withdrawals, water storage, and flow reductions factor into the development and implementation of the Powder River Basin Bacteria TMDL. For development of the TMDL, DEQ considered point sources and nonpoint sources of E. coli according to OAR 340-045-001(17) and for point sources any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are, or may be discharged. Also considered in TMDL development is OAR 340-41-0002 (42) for nonpoint sources regarding diffuse or unconfined sources of pollution where wastes can either enter, or be conveyed by the movement of water, into waters of the state.

Based on these definitions, DEQ considered ultimate sources of E. coli to surface waters as fecal material originating from humans and other warm-blooded animals. The allocation used for apportioning nonpoint sources of E. coli necessarily grouped sources from agricultural lands, including agricultural water and irrigation return water, non-agricultural lands, and other background sources together. Thus, irrigation diversions are embedded within the nonpoint source load allocation. Management of how these sources enter surface waters is described in the Water Quality Management Plan, including discussions of irrigation practices that influence the amount and timing of flows in the basin. DEQ recommends that Designated Management Agencies identified in the Water Quality Management Plan address the questions surrounding flow, water withdrawal, and storage in their implementation plans, if applicable to their responsibilities.

DL#3: Suggested Change ID #87

Description: TMDL documents - Bias against agriculture - cattle industry

Comment: The contention that cattle are the main culprit in the bacteria levels is ludicrous and deserves to be laughed at, especially in light of the fact that no DNA samples were taken. Conclusion: it apparently was only an assumption by the DEQ staff. Any study that will have

such an impact on our Eastern Oregon citizens and, most relevantly, our cattle industry, needs more than a couple of studies. I attended the public hearing, where more than 100 people were present, on Tuesday, August 15th, at the OTEC office in Baker City, Oregon, and there certainly was no solid evidence presented at that time that I could see.

DEQ has not proved that livestock are largely responsible for bacteria concentrations.

As Curtis Martin stated at the above-referred to public hearing: “You can’t take a broad-brush approach to agriculture; we’ve got to be more specific than that. We’re not gonna roll over for this. This is oppressive.”

Jim Carnahan, a civil engineer for the US Forest Service, who lives near Baker City, said: “agriculture is the biggest industry in the county...this process clearly needs more time. We need a more detailed study and more information.”

Response: DEQ appreciates this feedback and understands that contributions of fecal bacteria from individual sources will vary by location and over time. It is not DEQ’s intention to conclude a single source as the primary contributor of E. coli in the basin wide. Rather, the draft TMDL documents are intended to convey information about all potential point and nonpoint sources of E. coli, to calculate an allowable E. coli load, to provide information about reduction targets, and to begin a process of adaptive management that will lead to improved water quality. The combined category of background and nonpoint sources includes contributions of E. coli from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands with annual or seasonal livestock populations. The combined background and nonpoint source category was assigned the largest portion of the allowable E. coli load in the draft TMDL. The point source category was assigned waste load allocations based on the permit conditions. Livestock and agriculture are included in the nonpoint source category. DEQ has revised the draft TMDL documents to clarify the varied sources of E. coli within the nonpoint source and background categories and emphasize that primary sources of fecal bacteria will vary by location and over time.

Wildlife, human, and livestock contributions of fecal bacteria will differ across basin waters and further assessment will likely be needed in many locations to help determine the dominant source. DEQ agrees that additional data collection, including bacteria source tracking methods (DNA testing), can help to refine understanding of sources within specific river reaches and in directing appropriate management strategies. TMDLs are intended to begin a process of adaptive management by providing information about the E. coli loading capacity and measured exceedances to those with knowledge of E. coli sources within their areas of jurisdiction. Local knowledge and community involvement will be vital to ensuring successful implementation and protection of water quality in the Powder River Basin.

Changes were made based on this comment.

DL#4: Suggested Change ID #93

Description: Process - TMDL five year extension for more data collection, planning, and data protocol

Comment: Mink Creek Study, it will provide you with an example of what we here in our Basin would like to pattern the further research/data collection, similar to what occurred in Idaho, on that drainage. Wanting to stay brief in this communication, these are several points where we want to have additional discussion concerning the research/data protocol. 1. Increase the number and distribution of monitoring stations, with up-to-date information. 2. Attain specific identification of the origin of the bacteria (E.coli), causing the water quality impairment. Must be as accurate and transparent in finding the source(s) of fecal pathogens, as is possible. 3. Recognize the recent (last five years) significant changes of irrigation practices and management, which emphasizes the need for new and continuing water sampling/ testing to occur. 4. A comprehensive, systems-based study that involves a sufficient number of monitoring stations for multiple water quality indicators(e.g., bacteria, nutrients, temperature, DO, etc.) is needed. It is important that the relationships between land management/land cover and environmental variables influencing water quality indicators are properly documented, so that proper scientific focus can be made in case areas of concern are identified. These are just some of the key points to be considered going forward, with establishing a TMDL program that is as factual, science based, and relevant to the Powder Basin Watershed as possible. I sincerely look forward to being part of the discussions, moving forward collaboratively, and in partnership with Oregon Department of Environmental Quality, having further data collection/analysis, and working toward proactive, solution based outcomes.

Response: DEQ appreciates the comment to have partnerships that are inclusive of varied community interests for monitoring and assessment of E. coli and other pollutants. The following content is a review of the TMDL development process for clarifications and descriptions about how DEQ collaborates with communities.

Overall, TMDL development can be understood using three simplified steps. They are:

- 1) Identification of impaired waters. The Integrated Report includes an assessment of each water body where data are available, and the list of waters identified under Section 303(d) as water quality limited and needing a TMDL. Waters may be added to the 303(d) list based on evaluation of new data, application of new or revised water quality standards, or information showing water quality has declined. Waters may be removed from the 303(d) list when TMDLs or other control measures have been established to improve water quality, when data show water quality has improved, and in some cases when water quality standards are revised. The Integrated Report is online: <https://www.oregon.gov/deq/wq/Pages/WQ-Assessment.aspx>.
- 2) TMDL development: Develop a TMDL using available data for the water quality impairment(s), identification of potential sources contributing to the impairment(s), and allocations of identified sources (or source categories) necessary to meet water quality standards. This can include groupings such as combined nonpoint and background sources, and NPDES permitted point sources.
- 3) Implement the TMDL: DEQ works with other Designated Management Agencies, e.g., Oregon Department of Agriculture, Baker County, the U.S. Forest Service, and local community partners to develop targeted information to identify sources, and to develop monitoring plans and management activities to assess and improve water quality.

The Water Quality Management plan is the general plan and framework for implementation of the TMDL. The framework is designed to work in conjunction with detailed plans and analyses provided in sector-specific or source-specific implementation plans. The implementation plans

prepared by Designated Management Agencies that rely on the WQMP framework are intended to use an adaptive management approach during which monitoring of water quality, including responses to management activities, inform further refinement, or different management approaches to restore water quality.

The Mink Creek study is an excellent example of TMDL implementation and the adaptive management cycle in action. The 2010 Idaho TMDL identified Portneuf River (of which Mink Creek is a tributary) as having nonpoint sources of E. coli and those sources being potentially important for water quality impairments throughout the basin. Subsequent sampling continued to suggest impairments due to E. coli with cattle as an identified potential source. Through targeted Bacteria Source Tracking conducted by the University of Idaho, other human and wildlife sources were identified that supported optimizing an approach to reduce E. coli loading in the waters.

DEQ agrees that expanding the number of monitoring sites and frequency of monitoring will be important for transparency and clarity when looking at the Powder River Basin status, trends, and potential sources of E. coli. Building this monitoring approach will add to the data already collected as part of the TMDL development and ongoing ambient monitoring in the basin. New information collected at the TMDL sample locations and expanded locations will help to evaluate the effectiveness of recently implement conservation management practices and to provide additional insight into priority needs to improve water quality in the basin.

DEQ understands that source identification is important for identifying appropriate actions to improve water quality. DEQ adds that the explanation of the TMDL process and explanations about source categories amended into Section 7.1 of the TMDL and Section 5.2 of the Technical Support Document clarify the role of source identification in the TMDL process.

DEQ has considered comments about the attribution of specific nonpoint sources and has revised the language to identify potential nonpoint sources without ranking of importance. The Water Quality Management Plan outlines potential approaches for E. coli reductions, including Bacteria Source Tracking, that can be used in targeted watersheds to refine source attribution of E. coli loading.

During implementation of this TMDL and development of future TMDLs for water quality indicators listed by the commenter, DEQ will work with the local community to expand water quality monitoring and to study local causes and solutions to water quality degradation. DEQ agrees that evaluating hypothesized relationships between water quality and land characteristics will be critical for determining, testing, and improving the effectiveness of water quality management practices. This science-based adaptive management cycle is a critical part of TMDL implementation and will enable the community to optimize water quality management with agricultural practices and other important activities in the basin. DEQ looks forward to discussing this approach with the commenter and other community members.

Changes were made based on this comment.

43. Comments from: Dr. Robert Hall, DVM

DRHD#1: Suggested Change ID #81

Description: Beneficial Uses - Support for TMDL and protection of animal health and management

Comment: Practicing food animal veterinary medicine and observing food animal management practices in Umatilla County, Baker County and Union County since 1967, I have seen cases of illness in cattle, pets and humans caused by livestock fecal contamination of livestock drinking water. Intestinal infections I have diagnosed and treated or managed due to livestock fecal contamination have been Coccidiosis, Cryptosporidiosis, Campylobacter, E.Coli and Blue-Green Algae Poisoning. These parasites bacteria and toxins are easily transported downstream from the point of contamination to another location perpetuating these diseases. With the continued effect of global warming and rising in-stream water temperatures, these organisms have the ability to more rapidly increase their population and their viability causing increased incidences of infections and more serious infections in food animals and humans. We have developed a small CREP program along Salmon Creek, a tributary of the Powder River in Baker County. Our CREP program was developed 10 years ago and you can see how trees and shrubs and fencing have a positive affect on water temperature and prevent livestock fecal contamination. It is imperative that DEQ have the ability to implement a plan to improve the water quality of the Powder River Basin. Success in improving water quality has occurred in the past and can be successful in the future.

Response: Thank you for your comments in support of the TMDL.

44. Comments from: Duwayne Sullivan Ranches

DSR#1: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

45. Comments from: Denise Tschann

DT#1: Suggested Change ID #65

Description: TMDL documents - Water quality improvements need to happen more quickly

Comment: Based on rates of progress in the nearby Malheur Basin, DEQ estimates bacteria levels can be reduced by 50% in 10-15 years and bacteria standards can be met in 20-30 years, My concern is IT APPEARS TO BE A VERY LONG TIME before there is resolution.

Why can it not be resolved in a shorter period of time? And again, it is a question and I realize that ranchers, towns and local residents who are the polluters will need to find the money, manpower and treat the problem.

I mention this as, if something in my residential sewer system is my fault or breaks down on my property, my neighbors and town expect me to immediately make corrections.

So I suggest public municipalities and ranchers as well as private citizens who are the polluters be forced to make corrections in a more expedient manner.

No response is necessary, it is just my opinion, Sincerely grateful for your efforts and hard work,

Response: All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin and these efforts will take time to implement. Multiple agencies and organizations will be working locally to implement programs and provide monitoring to help coordinate projects within the area. Some of the agencies that will be helping to implement projects include: Oregon Department of Agriculture, Oregon State University, Malheur Soil and Water Conservation District, USDA National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. To make sure that water quality is improving, monitoring results and the implementation of actions will be reviewed every five years as part of adaptive management to track progress, highlight successes, and to address any barriers to implementing on the ground projects.

46. Comments from: Doug Ross

DgR#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

47. Comments from: Denzil Robbins

DnR#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

DnR#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

DnR#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdl_guide_04_22_11.pdf.

Changes were made based on this comment.

DnR#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other

persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

DnR#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

DnR#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

48. Comments from: Elmer & Jan Hill

E&JH#1: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

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the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

E&JH#2: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental

Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

E&JH#3: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

49. Comments from: Eric Lower

EL#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

50. Comments from: Eastern Oregon Legacy Lands

EOLL#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

51. Comments from: Eastern Oregon Mining Association

EOMA#1: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

EOMA#2: Suggested Change ID #42

Description: Process - Provide comments and responses

Comment: Provide the comments submitted during the first public notice period along with responses from DEQ. The public is interested in reviewing answers to questions posed during the initial comment period.

Response: During the comment period, DEQ responded to requests for additional information about the TMDL by holding a meeting to discuss development of a Powder River Basin bacteria TMDL monitoring strategy on January 31, 2024 and an open house on February 1, 2024. Both meetings were convened in Baker City and open to the public. In addition to discussions held with community members at the open house, DEQ also prepared a fact sheet to provide answers to many of the questions raised during the first public comment opportunity and hearing. In keeping with OAR 340-042-0050(c) and OAR 137-01, DEQ will provide written responses to all comments and questions received during both public comment periods following consideration of all comments and revisions of the documents. DEQ's practice is to provide a summary of all comments and responses in a staff report for consideration by Oregon's Environmental Quality Commission during request for rule adoption.

EOMA#3: Suggested Change ID #70

Description: Process - Extend the public comment period

Comment: The time available for the public to review and to provide comment on the TMDL documents is insufficient. Extend the deadline to submit comments.

Response: During public notice, DEQ received multiple requests to extend the public comment period and appreciates the interest in the Powder River Basin TMDL for E. coli shown by community members and interested parties. DEQ extended the first and second public comment periods, including holding two in-person meetings in Baker City.

52. Comments from: EPA Region 10

ER1#1: Suggested Change ID #3

Description: TMDL documents - Protection plan section needed

Comment: Collectively, the Powder River Basin TMDL, TSD, and WQMP generally include elements of a protection plan as outlined in EPA reference materials. EPA recommends including a protection plan section in the TMDL that summarizes the required elements so EPA can cite it in an acceptance of the plan.

Response: DEQ appreciates EPA Region 10's support for inclusion of a protection plan within the watershed-wide TMDLs. DEQ included a new section in the TMDL document (Section 12) that describes the protection plan and provides references to where information supporting the four core elements of a protection plan can be found in the TMDL documents.

Changes were made based on this comment.

ER1#2: Suggested Change ID #4

Description: TMDL documents - Downstream water quality protection

Comment: EPA recommends moving the information on consideration of downstream water quality standards from Section 3 to Section 4 and citing Idaho's bacteria standard.

Response: DEQ moved the text regarding consideration of downstream water quality standards to Section 4 and added a reference to ID's bacteria criteria.

Changes were made based on this comment.

ER1#3: Suggested Change ID #5

Description: TMDL documents - Reasonable assurance

Comment: EPA recommends clarifications to the reasonable assurance section to better reflect the federal definition.

Response: DEQ appreciates EPA support for TMDL implementation and the suggestion to refer to the more comprehensive write-up on reasonable assurances that is included in the WQMP, as a required elements per OAR 340-042-0040(4)(I)(J). Previously, DEQ included a summary of the reasonable assurance write-up from the WQMP in the TMDL based on an earlier suggestion. However, the repetition of abridged information in the TMDL may have resulted in lack of clarity regarding reasonable assurance and the federal definition. For better governance, DEQ removed the summary from the TMDL document and provided only the DEQ rule and EPA guidance citations (TMDL, Section 11), with a reference to the comprehensive write-up on reasonable assurance in the WQMP (Section 7).

Changes were made based on this comment.

ER1#4: Suggested Change ID #6

Description: Allocations - TMDL must show that both E. coli criteria are met at each flow category

Comment: In order to be able to approve the TMDL, EPA requires clarification of how allocations meet both E.coli criteria and inclusion of loading capacities and allocations for each stream reach at each flow category. EPA recommends incorporating Technical Support Document Tables 4.5.2a through 4.5.2nn into the TMDL document.

Response: DEQ has addressed this comment by adding text describing the approach to allocations in Section 9.1 of the proposed TMDL and inserting Tables 9.1b through 9.1f into the proposed TMDL. The text in section 9.1 states: "E. coli load allocations correspond to the

loading capacities based on a maximum E. coli concentration of 126 organisms/100 mL and apply to all streams tributary to each stream reach described in association with each downstream monitoring station.” Tables 9.1b through 9.1f of the TMDL document describe the load and wasteload allocations, reserve capacity, and margin of safety for each of the five flow categories (High, Medium-High, Medium, Medium-Low, and Low) used for load duration curve development in each of the 10 TMDL reaches, based on the geometric mean criterion (126 organisms/100 mL). Using the geometric mean criterion for allocations across all flow categories for each reach ensures that the single sample criterion will also be met. Additional information on allocations is provided in section 4.5.2 of the Technical Support Document.

Changes were made based on this comment.

53. Comments from: Emily Simko

ES#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

54. Comments from: Ed Hughes

EdH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

55. Comments from: Elmer Hill

EIH#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

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<https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

EIH#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

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Changes were made based on this comment.

EIH#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

EIH#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other

persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

EIH#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

EIH#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

56. Comments from: Flying J Farms

FJF#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

FJF#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

FJF#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

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DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

FJF#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners

to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

FJF#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses,

according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

FJF#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

57. Comments from: Gloria and Bob Ziller

G-BZ#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

58. Comments from: Gloria Carlile

GC#1: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

59. Comments from: George Hutchinson

GH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

60. Comments from: Greg Sackos

GS#1: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

GS#2: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

61. Comments from: Harrell Hereford Ranch

HHR#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

HHR#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL

website: <https://www.oregon.gov/deq/wg/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

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Changes were made based on this comment.

HHR#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

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Changes were made based on this comment.

HHR#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide

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62. Comments from: Harrell Hereford Ranch

HHR.1#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

HHR.1#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

HHR.1#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

HHR.1#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners

to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

63. Comments from: Holly McKim

HM#1: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured

concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

64. Comments from: Hayes Oyster Co & Tillamook Bay Shellfish Co

HOC&TBSC#1: Suggested Change ID #52

Description: Allocations - Inclusion of CAFOs

Comment: Reviewing the proposed Total Maximum Daily Load Rule for the Power River Basin -Bacteria (January 2024) we are struck by the complete absence of any reference to Confined Animal Feeding Operations and/or Concentrated Animal Feeding Operations (“CAFOs”) as point sources. As you know, Concentrated Animal Feeding Operations are included in the definition of a “point source” under the Clean Water Act at§ 502(14) and at OAR 340-045-001(17). Confined Animal Feeding Operations as defined at OAR 603-074-0010(3) are likewise included in the definition of a point source. This recognition of CAFOs as point sources, and the establishment of Wasteload Allocations for each of them, has important ramifications for TMDL implementation.

Importantly, pastures where manure is land applied in accordance with Agricultural Waste Management Plans approved by the Oregon Department of Agriculture are not part of the CAFO facility operating under the CAFO General Permit. Thus, the TMDL should address CAFOs (as point sources for which WLAs are established) separate and apart from the pastures where CAFOs land apply manure (as nonpoint sources for which LAs are established).

Response: DEQ appreciates concerns and has made edits to the draft TMDL, Technical Support Document, and Water Quality Management Plan to explicitly identify current permitted Concentrated Animal Feeding Operations (CAFOs) and to clarify the regulation of CAFOs in the Powder River Basin and their role in managing sources of fecal bacteria pollution in surface runoff. The NPDES or WPCF CAFO permits do not allow discharge of wastewater or wastes containing fecal bacteria from regulated activities to surface water or groundwater and permit holders must adhere to permit conditions and requirements. Other releases must be reported to Oregon Department of Agriculture and Oregon Emergency Response System, and require corrective actions, analogous to upsets or sewage overflows for NPDES domestic facilities. Edits to the proposed TMDL rule and draft Technical Support Document highlight the obligations of ODA, as permit administrators, to ensure compliance with CAFO permits achievement of the zero waste load allocations throughout the basin.

Changes were made based on this comment.

HOC&TBSC#2: Suggested Change ID #53

Description: Allocations - Agricultural stormwater discharge

Comment: We are likewise struck by the complete absence of any reference in the TMDL to “agricultural storm water discharge” which, as you know, is excepted from the definition of a point source. We appreciate that such discharge is alluded to in the Technical Support Document_ [e.g., at page 11 “Surface and shallow subsurface runoff transport fecal bacteria into surface waters ...” and at page 3 3 “This approach is appropriate because of the potential for disconnect between when and where fecal bacteria are deposited on the landscape in manure and the flow mechanisms responsible for delivering fecal bacteria to surface waters (runoff and irrigation practices”)]. We do not appreciate evasive language such as that at page 75 of the Technical Support Document (e.g. at page 75 “areas occupied by livestock or influenced by livestock waste ...”).

Moreover, land application of manure “at agronomic rates in accordance with the permit registrant’s ODA approved A WMP” ensures only that any subsequent pollutant discharge meets the definition of “agricultural stormwater discharge” and is thus exempt from the requirement of an NPDES permit. It does not mean that pollutant discharges will be sufficiently controlled to ensure attainment of the applicable water quality standard of the receiving stream. In short, DEQ should establish a LA for “agricultural stormwater discharge” specifically. Without it, ODA will likely continue to assume (erroneously) that land application at agronomic rates and in accordance with an approved A WMP will be sufficient to ensure attainment of the applicable water quality standard.

Response: DEQ appreciates the comments and has made edits to the draft TMDL, Technical Support Document, and Water Quality Management Plan to explicitly identify current permitted Concentrated Animal Feeding Operations (“CAFOs”) and to clarify the regulation of CAFOs in

the Powder River Basin and their role in managing sources of fecal bacteria pollution in surface runoff. In summary, the NPDES or WPCF CAFO permits do not allow discharge of wastewater or wastes containing fecal bacteria from regulated activities to surface water or groundwater, except under conditions described in permit requirements. Other releases must be reported to ODA and OERS and require corrective actions, analogous to upsets or sewage overflows for NPDES domestic facilities. Therefore, the wasteload allocations for permits was set to zero. Edits to the proposed TMDL rule and draft TSD highlight the obligations of ODA, as permit administrators, to ensure compliance with CAFO permits achievement of the zero waste load allocations throughout the basin.

Changes were made based on this comment.

65. Comments from: Hanna Ranch

HR#1: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of

the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

HR#2: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

HR#3: Suggested Change ID #48

Description: TMDL documents - Sources of bacteria from wastewater treatment plants need to be included in TMDL

Comment: From 2003-2008, we always experienced a very low river flow after the end of irrigation season when the irrigation district reduced outflows from Phillips Reservoir to minimum stream flow. It was a typical of a desert stream in the winter. In about 2005, we were part of a project to install off site water troughs and we also fenced off the river so cattle access was limited though we could run them on the bank for a couple weeks now and then to eat down brush and excess vegetation, a function of elk herds in antiquity. It worked well.

We left to work outside Oregon for 8 years and upon our return in 2016, we were shocked to see the river behind our house choked with the algae and we learned that DEQ had been authorizing water discharge from the sewage settling ponds two miles upriver. Worse, that fall, the water actually ran blue and green past our place for weeks. Our neighbor on the other side of the river made inquiries and the government officials in charge said it was safe. That said, we

made sure our animals and grandkids stayed out of the water. I didn't hunt ducks here that fall as I would not have eaten them.

Even after the off site ponds were created under DEQ supervision to pump this effluent miles away, the river ran a little higher than it had in the previous years. Originally the plan was to irrigate forage crops with the water stored in those ponds, but articles in our paper indicated that DEQ staff had determined it was too polluted to sprinkle it out on the land by the new ponds. When the off site ponds started to leak, the water was returned to the settling ponds. And... the water flow behind the house was soon running high though not discolored. I am recording all of this because none of it increased our faith that DEQ is looking out for us, and the inconsistency is difficult for me to accept. How is it that water too polluted to run through a sprinkler on dry ground is perfectly OK to release to run down the river past our home?

Response: DEQ appreciates and acknowledges the efforts of many individual landowners who currently apply best management practices to conserve riparian areas and protect water quality. Many of these landowners are already implementing management strategies recommended in the E. coli TMDL.

DEQ agrees that point sources of fecal bacteria, such as wastewater treatment plants, contribute to E. coli levels in Powder River Basin waters. As noted by the commenter, Baker City began the process of transitioning to a treatment process that would cease discharge to the Powder River but has needed to continue operations under a National Pollution Discharge Elimination System (NPDES) permit temporarily. NPDES permits require treatment of wastewater and disinfection prior to discharge. Permit holders are held to a high level of monitoring and reporting under these stringent regulatory requirements. The draft E. coli TMDL requires that NPDES permits for wastewater treatment plants in the Powder River Basin include the E. coli criteria as a permit limit.

DEQ appreciates information about algal blooms noted by the commenter. Although nutrients in wastewater can influence algal growth, DEQ would like to clarify that other factors can contribute to the growth of nuisance and/or toxic algal blooms in surface waters. Harmful algal blooms can be a significant problem particularly where human or animal health may be affected. DEQ coordinates with other state agencies to monitor and respond to harmful algal blooms. More information can be found on DEQ's Harmful Algal Bloom website: <https://www.oregon.gov/deq/wq/pages/harmful-algal-blooms.aspx>.

HR#4: Suggested Change ID #76

Description: Beneficial Uses - Historical water uses and recent recreation uses made possible by agriculture

Comment: I'm pretty sure DEQ staff do not know that prior to the construction of Phillips Reservoir, the Powder River actually ran dry by the time it hit Baker City in some summers. These are not the conditions that suggest the highest historical use of the river was recreational. The conditions demonstrate that the river was used primarily for agriculture, not recreation. I can provide you pictorial proof of a dry Powder riverbed. I can obtain statements from people who were alive here in this time who will attest to the same. Please let me know if you want this information and the format that you require. Year round flow was achieved only after ranchers in this valley enrolled 30,000 acres of their land under the irrigation district and incurred a multi-

decade mortgage against those acres, then assessed fees to every acre to pay for the dam and its maintenance. That mortgage is still being paid off over 50 years later. We are assessed on our county property tax bill. There was much angst expressed by Baker County residents at the meeting yesterday that someone, who neither lives here nor is aware of the history of this river, autocratically assigned recreational water standards for the present DEQ endeavor, not agricultural standards. There is only recreation because of and after agricultural users made it possible. We all want clean water and we are willing to work with collaboratively DEQ to meet the right standard. You need to include us, not dictate to us. This gross oversight would have been made had local people been included in this project from the beginning and to proceed further until this is addressed is administrative malfeasance.

Response: Thank you for providing additional background on the Phillips Reservoir and the flow changes, and increased irrigation that resulted from the establishment of the reservoir and irrigation district. Water quality protection and limiting pollution inputs is important on intermittent streams that may dry up during warm dry summer months as well as from streams that run year-round. Although the TMDL addresses water quality standards designed to protect water recreational contact, irrigation and livestock watering are recognized as important beneficial uses in the Powder River Basin and will be protected through implementation of this TMDL.

Contact recreation beneficial use standards protect swimmers, boaters, fishers, and those recreating on beaches and riverbanks, as well as protecting the use of irrigation water and livestock watering uses of the river. Waters with high levels of fecal contamination pose a disease risk to people, livestock, and wildlife. Infections such as Johne's disease which can impact cattle are caused by ingestion of fecal material from sick animals. This potentially fatal disease can also cause wasting symptoms in wildlife such as deer. Fecal contamination of water used for irrigation increases the risk of contamination of food crops with potentially disease-causing organisms. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin.

Multiple agencies and organizations have been working locally within the basin for many years and DEQ will defer to their expertise to prioritize and implement projects to address the sources of bacteria in the basin and to meet the implementation targets established in the TMDL. Some of these agencies include: Oregon Department of Agriculture, Oregon State University, Malheur Soil and Water Conservation District, USDA-National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. To make sure that the basin is moving the right direction and addressing the primary sources of bacteria monitoring results and the implementation of actions will be reviewed every five years as part of adaptive management to track progress, highlight successes, and to address any barriers to implementing successful on the ground water quality projects.

66. Comments from: Joel & Whitney Rohner

J&WR#1: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

67. Comments from: Judy and Tom Price

J-TP#1: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

J-TP#2: Suggested Change ID #46

Description: TMDL Process - More public and local involvement is needed

Comment: Overwhelmingly evidenced from the two meetings in Baker City; there needs to be more time to analyze and revamp data collected, and more public involvement and clarity as to the potential costs and other ramifications that monitoring would impose on stakeholders of the Basin. Please allow more local public involvement and better, more consistent data and science before moving forward with TMDL monitoring.

The time frame for any implementation needs to be dialed back. Baker County citizens and organizations such as Baker County Commission, the several soil and water conservation districts, Natural Resources Conservation Service (NRCS), and Oregon Department of Fish and Wildlife (ODFW) should have all been involved during the formulation of this rule. We are asking that you work with us, not against us.

Response: Thank you for your comments regarding public participation. DEQ has attended, provided information and engaged in a variety of meetings and forums as it was planning and developing this TMDL. This includes providing information at the Oregon Department of Agriculture Local Advisory Groups and holding two public rule advisory committee meetings that included representatives from ODA, ODFW, ODF, Baker County SWCD, Burnt River Irrigation District, U.S. Bureau of Land Management, Power Basin Watershed Council, Baker County and a community representative for local landowners. During the public comment period, DEQ held a public hearing and two additional meetings in the community. All meeting materials, meeting summaries, and public notice documents are posted online on the rulemaking web page: <https://www.oregon.gov/deq/rulemaking/Pages/PowderTMDL.aspx>.

DEQ will continue to engage with the community and partner agencies following TMDL issuance. DEQ looks forward to convening meetings and work sessions to collaborate on determining where and when implementation makes sense, how to acquire and leverage funding to implement monitoring and strategies and to collaboratively monitor and document water quality. These meetings and discussions will inform agencies' (such as ODA and BLM)

development of implementation plans specific to each agency's jurisdiction, as well as a monitoring strategy to gage progress and adaptively manage implementation.

68. Comments from: J.T. Rohner

J.R#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

J.R#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might

reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

J.R#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the

identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

J.R#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where

significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

J.R#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

J.R#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

69. Comments from: Jan Alexander

JA#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups

and interested community members will be critical for successful TMDL implementation and improved water quality.

JA#2: Suggested Change ID #25

Description: Analyses - Elk herds and feeding stations need to be considered in TMDL analyses

Comment: There are sources of fecal bacteria other than cattle that DEQ should have considered when developing the TMDL. Herds of elk move through the basin and graze on private landowner's fields. There are also multiple feeding stations that attract large herds of elk throughout the winter, which contribute excessive amounts of manure to the Powder River watershed. This causes fecal pollution of surface waters that impacts downstream users and may mistakenly be attributed to cattle sources. DEQ incorrectly concludes that all E. coli bacteria comes from cattle.

Response: DEQ appreciates the opportunity to clarify the source assessment provided in the TMDL. Section 5.2 of the Technical Support Document provides details about the potential sources of E. coli that were considered, analyzed, and included in the TMDL allocations or allowable E. coli loads from point and non-point sources. Point sources of bacteria, including wastewater treatment plants and state stormwater runoff from roadways, were included in TMDL analyses and received bacteria wasteload allocations. Nonpoint sources, including wildlife (elk, other ungulates, beaver, and waterfowl), livestock (including CAFOs), and residential septic systems, also received an E. coli load allocation. Cattle were not placed in a separate category or given a separate allocation. Together, the non-point source category received the largest allowable E. coli load allocation because point sources are relatively few and affect a smaller number of stream reaches.

DEQ's TMDL evaluations also included E. coli and flow data, seasonal considerations, land use/land cover, permit monitoring data, and wildlife presence and behavior patterns. From this evaluation, DEQ concluded the highest concentrations of bacteria generally occurred during irrigation season (May-October) and at locations downstream of areas with irrigated pastures and other agricultural land uses.

DEQ is also aware that there are large herds of elk in the Powder River Basin and considered bacteria inputs from the elk feeding stations. DEQ's assessment included consideration of data collected upstream and downstream of elk feeding stations, results of which showed that the wildlife area elk feeding stations were not likely significant sources of bacteria to surface waterbodies during the winter season, but may be contributing to criteria exceedances during the spring and summer period (May through October). To ensure that the elk feeding stations do not become an increased source of bacteria, Oregon Department of Fish and Wildlife is named as a Designated Management Agency in the TMDL Water Quality Management Plan and is required to develop and implement an approvable TMDL implementation plan that builds on their existing Elkhorn Wildlife Area Management Plan. Section 7.1 of the TMDL and Section 5.2.4 of the TSD has been updated to describe the potential significance of elk and other wildlife in the basin, with specific discussion on the Elkhorn Wildlife Area feeding station.

Changes were made based on this comment.

70. Comments from: James Carnahan

JC#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

JC#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

JC#3: Suggested Change ID #37

Description: Process - TMDL as proposed will cause harm

Comment: There's a an aspect of the medical field is applicable here, and that is first of all, do no harm. So when things come out, we need to be careful about how they're proposed and how they're implemented. I'm a government employee, too. And I appreciate every day that you folks pay my salary as I go about my day to day job. I try to to do a good job for you, and represent you well, and be thorough and detailed, and do a good job, and I would challenge my fellow Government employees from the DEQ to have the same attitude and do the same thing. So as

we work through our requirements that we do things that don't harm our fellow citizens, and in fact help them.

Response: The TMDL is structured to attain water quality standards to protect people and water contact recreation, but it will benefit all users of water. Irrigation and livestock watering are recognized as important beneficial uses in the Powder River Basin and will also be protected through the implementation of this TMDL. The TMDL, WQMP, and associated documents do not single out livestock as the only source of the high E. coli loads. Waters with high levels of fecal contamination pose a disease risk to people, and livestock and wildlife. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin. The TMDL program is a required element of the federal Clean Water Act. The Federal Government requires states to set water quality standards for pollutants and designate beneficial uses for waters of the state to ensure that waters can be safely used by humans, livestock, wildlife, and will support all other designated uses. When water quality impairments are identified, the federal Clean Water Act requires that states develop and implement TMDLs to restore water quality to meet established standards. Each state's TMDL, water quality standards, and beneficial uses must be reviewed and approved or disapproved by EPA. EPA's oversight provides a national perspective, national standardization, and a level of scientific peer review to ensure consistency across the West and the nation.

71. Comments from: James Carnahan

JC.1#1: Suggested Change ID #50

Description: Data - E. coli as a single fecal indicator

Comment: The proposed TMDL is based on E. coli, a single item. What other constituents, if any, were included in your testing? For example, did you test for drinking water standards constituents or other types of bacteria such as giardia and cryptosporidium? If you did test for other items, what were those concentrations/results? Is there good (but not disclosed) news that only one item is of concern? If you only tested for E. coli, you may have had your conclusion in mind and focused activities to support that. It has the appearance of insincerity.

Response: DEQ appreciates the questions and would like to clarify the reason for testing E. coli levels in surface waters and developing a TMDL to address these impairments. The EPA E. coli fact sheet explains "E. coli is considered an indicator organism, used to identify fecal contamination in freshwater and indicate the possible presence of disease-causing bacteria and viruses (pathogens). Individuals who swim or come in contact with water with elevated levels of E. coli and other fecal indicator organisms are at an increased risk of getting sick because of potential exposure to fecal pathogens" (https://www.epa.gov/system/files/documents/2021-07/parameter-factsheet_e.-coli.pdf). Although DEQ did not test for giardia and cryptosporidium directly, E. coli is used as an indicator for the potential presence of these pathogens. The water quality standard focuses on the levels of E. coli in the water to measure disease risk to humans.

In 1986, EPA published recommended water quality criteria to protect those engaging in full-body contact recreation, such as swimming and surfing, in both fresh and coastal waters. These criteria were based on epidemiological studies conducted in the Great Lakes and northeastern United States that linked various bacterial indicators with incidences of gastrointestinal illness.

Analysis of the studies showed that the bacterial indicators E. coli and enterococcus were the best indicators of illness in freshwater and that enterococcus was the best indicator in coastal waters. The Environmental Quality Commission (EQC) adopted the enterococcus criteria for freshwaters and non-shellfish growing estuarine waters to replace the fecal coliform criteria as of July 1, 1995. Then, in 1996, the EQC replaced the enterococci criteria with E. coli criteria for “freshwaters and non-shellfish harvesting estuaries”.

(<https://www.oregon.gov/deq/FilterDocs/BacterialIssuePaper.pdf.pdf>)

Oregon’s Bacteria Standards can be found in OAR 340-041-0009

(<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=68695>)

Changes were made based on this comment.

JC.1#2: Suggested Change ID #51

Description: TMDL implementation - Irrigation and cattle grazing

Comment: Based on the information you have provided, DEQ wants to take control of Powder River water and force us to give up irrigation and livestock grazing within its basin. (I am aware all Oregon surface waters are state property but the Powder River, like most streams, has been adjudicated for use in long-standing water rights.) DEQ staff denied this conclusion at the February 1 meeting, but your written material indicates this. At face value, you are simply choosing to attack agriculture, with irrigation and livestock in particular. Baker County’s primary economic factor is agriculture, and, of that, the leading component is cattle raising. My conclusion is that your “study” is geared toward attacking our way of making a living, that you are outright attacking Baker County’s livelihood through our water and cattle. You give no credit to how agricultural improvements such as Thief Valley and Phillips Reservoirs have improved late summer water flow in Powder River over the last one hundred years. Before those improvements, Powder River dried up in late summer! If you are genuinely concerned about water quality in the Powder River, you first need to discuss the reliability of your data to show that water quality is really a problem. If you can first prove that, then sit down with the people of Baker County (a committee exists) and discuss it, mutually develop protocols, and then work to develop a plan of action. Come to help, not attack. Do I need to remind you that you work for us, that you are public servants? There are good folks here in Baker County who are willing to work with you. I strongly encourage you to join us in a positive effort.

Response: DEQ appreciates the opportunity to provide further clarification regarding these TMDL concerns. The concerns articulated by Mr. Carnahan does not reflect the information or intent provided in the TMDL, Technical Support Document, and Water Quality Management Plan. The TMDL rule and associated documents impose no prohibitions on irrigation or cattle raising. DEQ has clarified in the TMDL (Section 7.1) and TSD (Section 5.2.1) source assessment sections that agricultural activities are one of several potential sources of fecal contamination in the basin that requires further investigation during TMDL implementation. The TMDL evaluations describe the potential sources of bacteria and loading capacities of streams within the Powder River Basin, along with estimated bacteria reductions needed to achieve water quality standards for bacteria in those streams over time. The Water Quality Management Plan includes lists of potential management strategies that can be considered to help reduce sources of bacteria from entering streams, acknowledging that implementation of management strategies is not needed everywhere and that selected strategies will differ from one location to

the next. DEQ acknowledges the importance of agriculture in Baker County and agrees that both protection of water quality and continued agricultural uses can be achieved in the Powder Basin.

Please see other responses to questions regarding quality of state data in this document and note that DEQ made all Quality Assurance Project Plans for TMDL data collection public following the first comment period; these may be accessed on the Powder Basin website. The TMDL includes measures to help control all anthropogenic bacteria sources and does not single out one source. Limitations are required for point sources of pollution, such as wastewater treatment plants, and plans are required to ensure that bacteria from recreational activities, roadway runoff, and septic tanks is controlled. A full description of sources and plan requirements can be found in the WQMP.

The evaluations provided in the TMDL are the first step toward adaptive management of water quality in the basin for reducing excess bacteria pollution, and will be followed by further assessment and plan development by Responsible Persons named in the WQMP. DEQ is also very interested in engaging with the community to help refine adaptive management, and further describes these intentions in the WQMP. All community perspectives must be considered and actions by many organizations are needed to develop reasonable plans for accounting for positive practices, enhancing their application in additional areas and incorporating improved practices in appropriate locations to reduce bacteria in streams over time. DEQ shares the commenter's aspiration to work together across perspectives toward positive efforts and outcomes that benefit all of the Powder River Basin communities.

Changes were made based on this comment.

JC.1#3: Suggested Change ID #67

Description: Data - Sampling methodology

Comment: What were your sampling and testing protocols? If sampling was done by collecting grab samples, what was the consistency of time of day, time of year, surface vs. deep, specific location, retention time before testing, persons who collected the samples, split sampling, etc.? How many sample points were there? I was told by a representative of another governmental agency that your conclusion of high E. coli levels was based on only two sample points.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plan is developed prior to writing the TMDL and is available online, <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx> on the project web page. The plan contains details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ's collection sites are commonly limited to locations with public access. DEQ appreciates the additional insights about E. coli sources and flows at the confluence of the North Powder River and Anthony Creek provided by the commenter. This information will be particularly useful

to help guide implementation monitoring to further refine E. coli source assessments along the North Powder River.

DEQ has measured high bacteria levels in the basin since the late 1990s. DEQ collected over 600 bacteria samples from more than 20 sample sites across the Powder River Basin before beginning development of the draft Powder River Basin for E. coli TMDL. DEQ has also provided the full datasets used in analyses to Rule Advisory Committee members and those who requested the data at the public hearing. Data used for TMDL analyses and ongoing assessments is also made publicly available through DEQ's Ambient Water Quality Monitoring System data portal, <https://www.oregon.gov/deq/wq/pages/wqdata.aspx>, or upon request from DEQ.

JC.1#4: Suggested Change ID #68

Description: Data - Impaired stream segments

Comment: Table 3.0 and Figure 3.0 of your June 2023 handout provide summaries of the "contaminated" (Category 5) sections of the Powder River and its tributaries. Given your conclusion that "...runoff from grazed and irrigated areas...(are) primary sources of bacteria loads to streams..." the contaminated sections seem illogical as explained below:

- a. The entire length of the North Powder River is Category 5 even though it starts at Anthony Creek, in the national forest and well upstream of significant agricultural development.
- b. Most of the length of Eagle Creek is Category 5, from Two Color Creek to the Powder River. There is a short section above Two Color Creek but most of the contaminated length is through national forest and upstream of Eagle Valley with its associated agricultural development. There is grazing within the national forest, but it is very low density.
- c. Pine Creek, with almost identical conditions to Eagle Creek such as origin in national forest, extended flow upstream of developed agriculture, and then flow through an agricultural valley, is not contaminated nor are the almost parallel East Pine Creek, Clear Creek, and Dry Creek. How can Eagle Creek be Category 5 while Pine, East Pine, Clear, and Dry Creeks, in identical conditions, are OK?
- d. Powder River is Category 5 from Phillips Lake until it "magically" cleans up at Baker City. It is OK until Goose Creek enters, where Category 5 starts again, even though Goose Creek is not contaminated (nor is it even mentioned other than for location). Powder River remains Category 5 to the confluence with Eagle Creek. Downstream from Eagle Creek, the Powder River is OK, even though, as mentioned previously, Eagle Creek discharging into the Powder River is Category 5.

In conclusion, Powder River is contaminated until it magically cleans up in passing through Baker City. It remains OK until flow from Goose Creek enters but is contaminated downstream even though Goose Creek is OK. Below Goose Creek, Powder River remains contaminated until flow from contaminated Eagle Creek enters, but this flow apparently cleans it up because it is then OK downstream of Eagle Creek to the Snake River. There is no logic in your conclusions.

Response:

- a. In the 2018/2020 Integrated Report data, monitoring sites in the North Powder River

assessment unit (36191-ORDEQ and 36192-ORDEQ) showed 33 geometric means > 126 organisms per 100 mL and 41 of 148 samples > 406 organisms per 100 mL. This meets listing procedures outlined in the 2018/2020 Assessment methodology document. As described in the methodology document, the Category 5 listing was applied to the entire assessment unit (OR_SR_1705020305_05_102817).

- b. Eagle Creek is divided into two different assessment units. Eagle Creek upstream of Two Color Creek is a waterbody assigned to a watershed type unit OR_WS_170502031001_05_103204. This assessment unit has not been assessed for E. coli and is considered Unassessed for this parameter. Downstream of Two Color Creek to the Powder River, Eagle creek is a river/stream assessment unit OR_SR_1705020310_05_102830. This assessment unit is Category 5 impaired for E. coli. The Integrated Report process uses available water quality data and does not consider land use in determining assessment unit status.
- c. The Integrated Report assessments are based on available data and do not consider land use or comparable streams. The assessments are based on data available at time of assessment.
- d. The Integrated Report assessment process is on a per assessment unit basis and only takes into account the data within the unit. IR process does not look upstream or downstream of units when determining impairment status. The conclusions in the IR are based on applying IR methodology to data received. If additional data in future cycles indicate attainment of the E. coli standard, and meet the delisting requirements outlined in the Assessment Methodology, the assessment unit will be removed from the 303(d) list.

JC.1#5: Suggested Change ID #69

Description: Analyses - Irrigation and livestock land use

Comment: Given all the possible animal contact (domestic and game animals) with streams in the Powder River basin, how can you conclude that irrigation runoff and associated livestock grazing are responsible for up to 95% of E. coli contamination? Table 2.3 shows that the category of Hay/Pasture only makes up 3.6% of the Powder Basin area but you conclude that contributes 95% of the E. coli! Although Shrub/Scrub (46.1%) and Evergreen Forest (26.9%) comprise 73.0% of the basin area, those two categories have very low-density livestock use and no irrigation. Your data do not support your conclusions.

Response: DEQ appreciates the opportunity to discuss the differences between land use/land cover statistics at the basin level, sources, and percent reductions needed to meet water quality criteria. The presence of animals is only one factor that influences the potential of fecal material contributing to elevated E. coli levels in receiving waters such as streams or rivers. The areal concentration (number of animals per acre) of a source is very important. For instance, the concentration of livestock on pastures is often much higher than wildlife distributed across their habitat. This makes the comparison of the relative areas of land uses less informative when comparing the potential of a source to contribute to elevated E. coli levels in receiving waters. Further, the location of the source area greatly affects the transport of the E. coli to the receiving waters. Even if the two different pastures that have the same livestock concentrations and

management with one pasture adjacent to the stream and the other located farther away from the stream, the pasture adjacent to the stream has a much greater potential to contribute to higher levels of E. coli in the stream. These factors were used in the calculation of the different sources for the TMDL and why a 95% reduction of nonpoint sources was identified.

72. Comments from: Judy Eaton

JE#1: Suggested Change ID #80

Description: Beneficial Uses - Support for protection of all uses - TMDL for prevention of ongoing risks to water quality

Comment: Thank you for addressing the management and protection of The Powder River. While roughly 11 of its 150+ miles is protected as wild and scenic, historically and currently the Powder River has continuously been exploited and transformed from its natural conditions and flows to primarily serve human demands for mining, grazing, and agriculture. The exploitation of The Powder River has negatively impacted fish, wildlife, riparian habitat, including native plant species, human recreation, and basic water quality. Historical, large-scale mining has subsided, while the impacts of which have been eclipsed by large scale agriculture and grazing. Particularly, the very real threat of potentially toxic chemical and bacterial levels from agriculture and grazing practices that have been documented in the river for decades. It is time to shift the exploitation-based paradigm that benefits a few to one of greater water resource and riparian habitat protection for the many and for the future of Powder River. I advocate for the improved management of the Powder River that is critical to sustainable protection and improvement for fish, wildlife, human recreation, and water and riparian quality. Begin shifting emphasis to water quality and riparian protection and from domination of farming and ranching operations at the cost of water quality. Establish and enforce a Total Maximum Daily Load (TMDL) for the Powder River per the Oregon DEQ rulemaking process. The Powder River TMDL must be set at a level that protects and prevents risk from pollutants to native fish and wildlife species and safely allows for human recreational use. The Oregon DEQ must take the lead to meet these requirements by ensuring development, implementation, and completion of a cleanup plan, including monitoring and tracking the cleanup progress. All of these steps will only be successful if public input and participation occurs including simultaneous State and Federal education, assistance, and possibly funding for Ranchers and Farmers to identify and address impacts to them and enlist their input and participation. Thank you again for your attention and dedication to cleaning up the Powder River.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses provided in OAR 340-041-0260 in the Powder/Burnt Basin are public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality.

73. Comments from: Judith Fisher

JF#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

74. Comments from: John Hamburg

JH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

75. Comments from: JoAnn Marlette

JM#1: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

JM#2: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

JM#3: Suggested Change ID #87

Description: TMDL documents - Bias against agriculture - cattle industry

Comment: The contention that cattle are the main culprit in the bacteria levels is ludicrous and deserves to be laughed at, especially in light of the fact that no DNA samples were taken. Conclusion: it apparently was only an assumption by the DEQ staff. Any study that will have such an impact on our Eastern Oregon citizens and, most relevantly, our cattle industry, needs more than a couple of studies. I attended the public hearing, where more than 100 people were present, on Tuesday, August 15th, at the OTEC office in Baker City, Oregon, and there certainly was no solid evidence presented at that time that I could see. DEQ has not proved that livestock are largely responsible for bacteria concentrations.

As Curtis Martin stated at the above-referred to public hearing: "You can't take a broad-brush approach to agriculture; we've got to be more specific than that. We're not gonna roll over for this. This is oppressive."

Jim Carnahan, a civil engineer for the US Forest Service, who lives near Baker City, said: "agriculture is the biggest industry in the county...this process clearly needs more time. We need a more detailed study and more information."

Response: DEQ appreciates this feedback and understands that contributions of fecal bacteria from individual sources will vary by location and over time. It is not DEQ's intention to conclude a single source as the primary contributor of E. coli in the basin wide. Rather, the draft TMDL documents are intended to convey information about all potential point and nonpoint sources of E. coli, to calculate an allowable E. coli load, to provide information about reduction targets, and to begin a process of adaptive management that will lead to improved water quality. The combined category of background and nonpoint sources includes contributions of E. coli from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands with annual or seasonal livestock populations. The combined background and nonpoint source category was assigned the largest portion of the allowable E. coli load in the draft TMDL. The point source category was assigned waste load allocations based on the permit conditions. Livestock and agriculture are included in the nonpoint source

category. DEQ has revised the draft TMDL documents to clarify the varied sources of E. coli within the nonpoint source and background categories and emphasize that primary sources of fecal bacteria will vary by location and over time.

Wildlife, human, and livestock contributions of fecal bacteria will differ across basin waters and further assessment will likely be needed in many locations to help determine the dominant source. DEQ agrees that additional data collection, including bacteria source tracking methods (DNA testing), can help to refine understanding of sources within specific river reaches and in directing appropriate management strategies. TMDLs are intended to begin a process of adaptive management by providing information about the E. coli loading capacity and measured exceedances to those with knowledge of E. coli sources within their areas of jurisdiction. Local knowledge and community involvement will be vital to ensuring successful implementation and protection of water quality in the Powder River Basin.

Changes were made based on this comment.

76. Comments from: JoAnn Marlette

JM.1#1: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

JM.1#2: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

JM.1#3: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer

data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

JM.1#4: Suggested Change ID #42

Description: Process - Provide comments and responses

Comment: Provide the comments submitted during the first public notice period along with responses from DEQ. The public is interested in reviewing answers to questions posed during the initial comment period.

Response: During the comment period, DEQ responded to requests for additional information about the TMDL by holding a meeting to discuss development of a Powder River Basin bacteria TMDL monitoring strategy on January 31, 2024 and an open house on February 1, 2024. Both meetings were convened in Baker City and open to the public. In addition to discussions held with community members at the open house, DEQ also prepared a fact sheet to provide answers to many of the questions raised during the first public comment opportunity and hearing. In keeping with OAR 340-042-0050(c) and OAR 137-01, DEQ will provide written responses to all comments and questions received during both public comment periods following consideration of all comments and revisions of the documents. DEQ's practice is to provide a summary of all comments and responses in a staff report for consideration by Oregon's Environmental Quality Commission during request for rule adoption.

77. Comments from: Jefferson Mining District

JMD#1: Suggested Change ID #64

Description: Authority - County holds authority to select policy implementation, not DEQ

Comment: Dealing with all watershed plans/issues on public and private properties within county judications under "matters of County Concern". DEQ is moving way too fast on this issue; trying to regulate something that is by statute "a Matter of County Concern". DEQ is required by statute to follow state mandated coordination procedures with both the county and ODA. With the passage of the Oregon Land Conservation and Development Act of 1973, the State legislator established the Land Conservation and Development Commission (LCDC), which was charged with adopting state land use goals, and the Department of Land Conservation and Development (DLCD), charged with assisting the commission and local governments in the implementation of those goals and with coordinating state agencies in land use matters. In 1973 SB 100 directed local governments to adopt and implement comprehensive plans and revise them periodically in accordance with statewide goals and with the needs and desires of the public. DEQ, OWRD and LCDC articulate desired state policy but it

is the counties that have the police powers to choose how and which policies are to be implemented.

DEQ is only authorized to implement the Federal Clean Water Act in Oregon by voluntary implantation of rules in concert with ODA and ODF watershed plans. Oregon Department of Agriculture (ODA) is responsible for developing plans and ensuring rule compliance to prevent and control water pollution from agricultural activities and soil erosion on rural lands. ODA is also responsible for ensuring that farmers and ranchers help achieve water quality standards and meet the agricultural pollutant load allocations assigned by the Department of Environmental Quality (DEQ) in its Total Maximum Daily Loads (TMDLs). ODA has written water quality plans with best management practices (BMPs) for these sub-basins, so the TMDL designation for E coli on the short reaches for human recreation would be in conflict with both ODA and the Governor's state-wide beaver initiative. There is a need to collaborate and coordinate the various plans with the Powder River Watershed Council plan to determine if a problem exists and how to address it.

Response: DEQ appreciates the opportunity to clarify authority and coordination of state agencies regarding the Clean Water Act and TMDLs. Oregon state agency land use coordination requirements are based on ORS 197.180, which is a statute that only applies to agency actions for programs affecting land use. Each agency considered which agency programs affect land use and made determinations in either a state agency coordination plan or rules. Oregon's Environmental Quality Commission, DEQ's policy-making body, included a list of DEQ programs that affect land use in OAR 340-018-0030. For water quality programs, the list in OAR 340-018-0030(5)(f) includes plans to meet point source wasteload allocations, but not nonpoint source load allocations. Compliance with land use requirements is demonstrated for point source wasteload allocations through the NPDES permit process requirement of a Land Use Compatibility Statement and such a demonstration is not needed for nonpoint source wasteload allocations. However, in keeping with the policy statement in OAR-340-018-0010, which states that "it is the Commission's policy to coordinate the Department's programs, rules and actions that affect land use with local acknowledged plans to the fullest degree possible," DEQ encourages discussions with counties and inclusion of information about land use compatibility in implementation plans developed to implement TMDLs.

DEQ is responsible for implementing the CWA, 33 United States Code Section 1251 et. Seq., and general state water quality laws found in Oregon Revised Statutes (ORS) chapters 468 and 468B. Contrary to the commenter's statement that DEQ is only authorized to implement the Federal Clean Water Act in Oregon by voluntary implementation of rules in concert with ODA and ODF watershed plans, DEQ's CWA responsibilities include: establishing and revising water quality standards under CWA Section 303(c) and Oregon Administrative Rules (OAR) chapter 340, division 41; regularly assessing and reporting the status of Oregon waters under CWA Sections 303(d) and 305(b) and ORS 468B.039; developing the Nonpoint Source (NPS) Control Program required under CWA Section 319; protection of drinking water and public health under ORS 468B.015 and OAR chapter 340, division 41; and establishing and ensuring the implementation of clean water plans, called Total Maximum Daily Loads (TMDLs) under CWA Section 303(d) and OAR chapter 340, division 42, for those surface waters that fail to meet water quality standards. Per ORS 468B.110(1) on establishing and enforcing instream water quality standards, DEQ may impose and enforce limitations or other controls, which may include TMDLs and load allocations for nonpoint sources. Per OAR 340-012, DEQ can take enforcement action in response to water quality violations, such as causing pollution of or reducing the water quality of waters of the state, causing waste to be placed where it may be carried into waters of the state or failing to timely submit plans or reports required by DEQ rules

or orders. As stated in ORS 468B.010, in instances where authority over water pollution granted by ORS and OAR to the EQC is inconsistent with any law or authority granted to any other state agency, the authority of the EQC shall be controlling.

DEQ and ODF signed a MOU in June 2021, and DEQ and ODA signed an MOA in January 2023. These documents articulate both agencies' roles and authorities in relation to water quality protection and restoration.

DEQ is also interested in coordination and collaboration with local groups to develop a basin-wide monitoring strategy, as described in section 6 of the WQMP. Coordination with agencies, districts and other local groups is a critical part of adaptive management, used to direct implementation activities and revise implementation plans. Watershed enhancement and riparian restoration projects strongly align with goals of the TMDL, and restoration activities have been added to Table 2.0a of the WQMP to highlight their importance in improving water quality. This includes plans from other agencies to restore and protect beaver habitat, as referenced in the comment. TMDL implementation activities are focused on reducing and managing bacteria coming from human and domestic animal sources. Wildlife sources of bacteria are considered natural and background sources, with the exception of congregated elk feeding areas under management by ODFW, as described in section 5 of the WQMP.

78. Comments from: Judy Price

JP#1: Suggested Change ID #35

Description: Process - Water Quality Standards may not be attainable

Comment: DEQ has not sufficiently explained what happens after TMDL implementation if the water quality standard for E. coli cannot be met. What if implementation of best management practices is not sufficient to reduce bacteria loads to the freshwater recreational standard? Agricultural producers are concerned that DEQ will then require landowners to reduce the number of livestock on grazing lands, which would have a large economic impact.

Response: DEQ appreciates the opportunity to clarify this TMDL process and address landowner concerns. Issuing and implementing a TMDL is a necessary step toward achieving water quality standards and refining source assessments. A determination about whether water quality standards can be attained in a given location cannot be made prior to TMDL implementation. Because environmental response to bacteria reduction strategies takes time and the Powder Basin covers a large area, it is likely to take 10-20 years of implementation and adaptive management before measurable progress can be quantified. Management strategies recommended in the TMDL have been effective in reducing bacteria in other locations and DEQ is confident that improvements in water quality will also be seen in the Powder River Basin. Please note that the recommended management strategies by sources of fecal bacteria in the proposed Water Quality Management Plan do not include any requirements or recommendations to reduce numbers of livestock; rather, the TMDL document focuses on techniques that will help reduce direct deposition of manure in streams and protect riparian areas.

The TMDL is designed to attain the bacterial water quality standards so that all the existing, designated beneficial uses are protected. The designated beneficial uses of the Powder River Basin, as listed in OAR 340-041-0260 include: public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality. If it is determined that water quality standards are not achievable in specific river reaches after adequate TMDL implementation has taken place, based on regular review of Implementation Plans and adaptive management, then revisions to the TMDL or a use attainability analysis may be considered as a next step.

79. Comments from: John Thelen

JT#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Powder River Basin TMDL.

80. Comments from: John Rohner

JhR#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources

Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

JhR#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are

found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

JhR#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of

BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

JhR#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

JhR#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

JhR#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

81. Comments from: John Woolard

JhW#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

JhW#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

JhW#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

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DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions

needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

JhW#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's

Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

JhW#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

JhW#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

82. Comments from: Jill Wyatt

JIW#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

83. Comments from: Jim Sterling

JmS#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

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84. Comments from: Jesse Soliz

JsS#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

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JsS#2: Suggested Change ID #9

Description: Data - Sampling protocols

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Changes were made based on this comment.

JsS#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

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Changes were made based on this comment.

JsS#4: Suggested Change ID #11

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Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

JsS#5: Suggested Change ID #14

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JsS#6: Suggested Change ID #21

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85. Comments from: Karen Ashikeh

KA#1: Suggested Change ID #95

Description: Implementation - Add specific management strategies - implementation plan - restrict CAFO permits

Comment: Restrict CAFO, water use & irrigation permits; require ground cover, tree planting & soil health strategies; support USDA technical advising.

Response: DEQ appreciates these suggestions for TMDL implementation. DEQ updated the document to include description of CAFO and Water Pollution Control Facility permits that are not allowed to discharge to surface waters. The draft TMDL includes reference to permit conditions and requirements for these potential sources of E. coli to show compliance with the TMDL.

DEQ listed water protection management strategies in Table 1 of the Water Quality Management Plan that includes irrigation system improvements, erosion control techniques, and riparian restoration. DEQ also agrees with the commenter that expertise from USDA, NRCS, and other conservation experts will be helpful in determining next steps for TMDL implementation planning. Additional management strategies and practices for specific E. coli source sectors are included in section 5 of the WQMP. TMDL implementation plans developed by DMAs and responsible person will include specifics about assessment, implementation and monitoring activities, and timelines.

Oregon Administrative Rules, Chapter 340-042-0040 provides a complete list of required elements for TMDLs and WQMPs that comply with the Clean Water Act and provides the framework of management strategies to attain and maintain water quality standards. The framework is designed to work in conjunction with detailed plans and analyses provided in sector or source-specific implementation plans.

86. Comments from: Kenneth Cannaday-Shultz

KC#1: Suggested Change ID #41

Description: TMDL documents - Wastewater treatment plants require additional consideration and presentation in the TMDL

Comment: A map should include the river miles for the Powder River at least, and probably a few of the major tributaries as well. A clear map showing the location of various points of interest (i.e., reservoirs, towns) relative to river miles would help. I also would like to see the average WWTP discharges during the various flow periods presented in one of the tables.

Particularly during low flows, WWTP discharges can be a not insignificant percentage of total streamflow, so seeing the typical WWTP flows during the various flow phases would be helpful.

I disagree with the proposal to not restrict bacterial loading from WWTP upstream of the Powder River segment from Goose Creek to Eagle Creek. From your tables 9.1b to 9.1f, it is clear that the WWTP share of bacterial loading increases dramatically as stream flow decreases. I'm assuming that the low percentile flows occur mostly during summer and fall months, with most substantial flows being snowmelt derived and baseflows some combination of rainfall and (likely mostly) groundwater driven. Streams with this flow pattern also tend to have elevated temperature and lowered DO during these low flow periods, so local biota tends to be most stressed during these low flow events, and more susceptible to deleterious effects from infection.

All the above factors considered, it appears to be a very incomplete TMDL that does not imposed flow-based bacterial loading limits on upstream WWTP in addition to already-imposed limits if the already-imposed limits still produce over 45% of the bacterial loading during these especially-stressful low flow periods. While I am loathe to recommend further regulating municipalities, it appears that omitting them from the TMDL is unwise, and will lead to failure of the TMDL to produce adequate results in at least one stream reach of the Powder River.

I question the wisdom of not leaving a reserve capacity in the TMDL. The communities affected will be hard pressed to reach these limits, and if the TMDL does not leave them capacity to grow, we may be kicking this issue into the future. I agree that the non-point source loadings are not overly likely to change going forward, but the point-sources are more likely to increase with time. If the TMDL does not set aside some space for these communities to continue growing, they may find approval of future subdivisions or city limit/UGB expansions stopped by DEQ due to TMDL compliance requirements.

Response: DEQ appreciates the requests for more detailed information on maps and data on inputs and flow conditions for wastewater treatment plants. DEQ has updated maps to clarify landmarks, towns, and major tributaries in the TMDL and the Technical Support Document. DEQ has also referenced the wastewater treatment plant discharge locations that correspond to the towns of Baker City, North Powder, and Huntington in the appropriate maps depicting these towns.

To determine allocations of allowable levels of E. coli, DEQ used the maximum allowable discharges from the wastewater treatment plants along with the permitted limit of E. coli concentration to meet geometric mean criterion (126 organisms/100 mL) to determine a maximum potential allocation to the allowable limit of E. coli loading to surface waters. Note that the allocation in the TMDL differs from the actual contribution to current E. coli loading, which does not reflect disinfection of effluent or die-off of E. coli downstream. DEQ agrees that more information on seasonal variation in wastewater treatment plant effluent could be useful for TMDL implementation and may be a component of monitoring strategies developed by designated management agencies. However, for the purposes of the TMDL, DEQ will continue to present maximum potential contribution of wastewater treatment plants across all seasons and flow conditions.

DEQ would like to clarify that E. coli loading for the reach of the Powder (Goose Creek to Eagle Creek) has current restrictions on the maximum allowable contribution of E. coli from wastewater treatment plant discharges at Baker City and North Powder, as specified in their respective NPDES permits noted in the Technical Support Document. This reach also occurs

downstream of Thief Valley Reservoir, which may remove a portion of E. coli from downstream transport into the reach. Additionally, DEQ would like to note that although Baker City has resumed discharging effluent to the Powder River within limits specified in the NPDES permit, a WPCF permit application is currently under way with the expectation of ceasing effluent discharge to the river in the future that is also noted in the Technical Support Document.

Finally, DEQ appreciates the concern over specifying a 0 percent reserve capacity. Section 9 of the TMDL document specifies that future permitted point sources will be allowed to discharge effluent that meet permit limits for E. coli concentrations and that meet water quality criteria for water contact recreation. DEQ also outlines the process in the Water Quality Management Plan by which future revisions to the TMDL point source and nonpoint source allocations can be made.

KC#2: Suggested Change ID #48

Description: TMDL documents - Sources of bacteria from wastewater treatment plants need to be included in TMDL

Comment: From 2003-2008, we always experienced a very low river flow after the end of irrigation season when the irrigation district reduced outflows from Phillips Reservoir to minimum stream flow. It was a typical of a desert stream in the winter. In about 2005, we were part of a project to install off site water troughs and we also fenced off the river so cattle access was limited though we could run them on the bank for a couple weeks now and then to eat down brush and excess vegetation, a function of elk herds in antiquity. It worked well.

We left to work outside Oregon for 8 years and upon our return in 2016, we were shocked to see the river behind our house choked with the algae and we learned that DEQ had been authorizing water discharge from the sewage settling ponds two miles upriver. Worse, that fall, the water actually ran blue and green past our place for weeks. Our neighbor on the other side of the river made inquiries and the government officials in charge said it was safe. That said, we made sure our animals and grandkids stayed out of the water. I didn't hunt ducks here that fall as I would not have eaten them.

Even after the off site ponds were created under DEQ supervision to pump this effluent miles away, the river ran a little higher than it had in the previous years. Originally the plan was to irrigate forage crops with the water stored in those ponds, but articles in our paper indicated that DEQ staff had determined it was too polluted to sprinkle it out on the land by the new ponds. When the off site ponds started to leak, the water was returned to the settling ponds. And... the water flow behind the house was soon running high though not discolored. I am recording all of this because none of it increased our faith that DEQ is looking out for us, and the inconsistency is difficult for me to accept. How is it that water too polluted to run through a sprinkler on dry ground is perfectly OK to release to run down the river past our home?

Response: DEQ appreciates and acknowledges the efforts of many individual landowners who currently apply best management practices to conserve riparian areas and protect water quality. Many of these landowners are already implementing management strategies recommended in the E. coli TMDL.

DEQ agrees that point sources of fecal bacteria, such as wastewater treatment plants, contribute to E. coli levels in Powder River Basin waters. As noted by the commenter, Baker City began the process of transitioning to a treatment process that would cease discharge to the Powder River but has needed to continue operations under a National Pollution Discharge Elimination System (NPDES) permit temporarily. NPDES permits require treatment of wastewater and disinfection prior to discharge. Permit holders are held to a high level of monitoring and reporting under these stringent regulatory requirements. The draft E. coli TMDL requires that NPDES permits for wastewater treatment plants in the Powder River Basin include the E. coli criteria as a permit limit.

DEQ appreciates information about algal blooms noted by the commenter. Although nutrients in wastewater can influence algal growth, DEQ would like to clarify that other factors can contribute to the growth of nuisance and/or toxic algal blooms in surface waters. Harmful algal blooms can be a significant problem particularly where human or animal health may be affected. DEQ coordinates with other state agencies to monitor and respond to harmful algal blooms. More information can be found on DEQ's Harmful Algal Bloom website: <https://www.oregon.gov/deq/wq/pages/harmful-algal-blooms.aspx>.

87. Comments from: Kevin March

KM#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Powder River Basin TMDL.

88. Comments from: Kerns Rainbow Ranch, Inc.

KRRI#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

KRRI#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

KRRI#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to

uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

KRRI#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S.

Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

KRRI#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

KRRI#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

89. Comments from: Kermit Williams

KW#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

90. Comments from: Karen Riener

KrR#1: Suggested Change ID #97

Description: Data - Wildlife not to blame for E. coli counts

Comment: The issue has been raised that wildlife may be as much a cause as cattle for the E-Coil TMDLs. To get a better understanding of the numbers involved I have done an online search using USDA stats, Drovers Reports, Livestock news in AG Daily, reports for all beef cattle and calves in the US. These numbers follow in the list below. I then looked at the numbers in Oregon for cattle and calves for 2022.

Since the speculation is that wildlife can be as much a cause for TMLD as cattle/calves, I then looked online at the wildlife numbers as given by the Oregon Dept of Fish and Wildlife, and storymaps.arcgis.com. those numbers follow in the list below as well.

Of all beef cattle and calves (these numbers do not include milk cows) in the US, we have the following population data: USDA stats for Jan 1, 2023 - 89,274,100 Drovers reports Jan 1, 2017 - 93,600,000 Livestock news in AG Daily reports July 1, 2022, cattle calves on US farms - 98,000,000 More specifically, in Oregon we have: Nationalbeefwire.com, All cattle and calves in Oregon 2022 - 1,250,000. In 2023 - 1,240,000.

Now we look at wildlife population stats for Oregon, from Oregon Dept of Fish and Wildlife, and storymaps.arcgis.com mule deer 2021 - 163,000 blacktail deer 2021 - 7,200 elk 2021 - 69,718

Calif. bighorn sheep 2021 - 4,012 Rocky Mt. bighorn sheep 2021 - 711 pronghorn 2021 - 17,439 cougar 2019 - 7,000 black bear 2019 - 30,000 Total - 299,080

From these rough numbers for the wildlife, and the number of beef cattle/calves listed for Oregon in 2022 (since that year is closer to the year 2021 for most of the wildlife population) we take the percentage and see that the wildlife listed are ~.24, nearly a quarter of the percent of beef cattle and calves in Oregon. This makes the cattle/calves in Oregon an order of magnitude larger than the large animal wildlife population.

From these numbers, I do not believe that the wildlife listed, being only about one quarter of cattle, can reasonably be blamed for the bacteria counts we're finding in our streams. Of course this does not include birds, reptiles, rodents, insects, fish, etc. and if they, not being tallied, are where the blame can be placed, then there's no use in using numbers as a persuasion to keep cattle defecation out of the water bodies. These other animals would have to defecate three times more in number than the wildlife listed above do, to come up to the number of cattle/calves and their defecation, in Oregon.

If the people using this argument, that wildlife feces making their way into the water bodies is significant enough to remove the bulk of the problem off of livestock, then I request that those making this argument please provide the data to refute this claim, with references, and show why livestock is no more a cause than wildlife for E-coli TMDL. It has been suggested that DNA sampling of the pollutants be undertaken to determine this. Maybe that would work, but the cost for that, which the taxpayers would have to carry, I believe would be substantial and I question if that cost is justifiable when you study the sampling data and see it reflects the location, season, water quantity, and proximity to cattle concentrations and the results show a correlation with cattle concentrations and water quality. The Oregon Department of Fish and Wildlife Elk Feeding Station Water Quality Monitoring study (Elkhorn Mt. foothills) is an example of this correlation.*

*Elk feeding station study found low E. coli bacteria levels at both sites, did not increase upstream or downstream during peak feeding and runoff, similar result for phosphorous, suggest ungulates are not significantly degrading water quality. Baseflow samples did show high E. coli levels, some exceeding state standards. Baseflow occurs in summer when cattle graze the feeding areas. Suggested solutions are more off-channel watering, riparian fencing, restoring instream/wetland habitats.

Response: Thank you for this additional information. DEQ has not included in the TMDL analyses this level of data on the numbers of livestock and numbers of wildlife that could potentially be adding bacteria to the basin. The Powder River Basin TMDL applies to all sources of bacterial contamination in the basin including livestock and wildlife. It covers all freshwater perennial and intermittent streams in the Powder River Basin. There are multiple agencies and organizations that have been working locally within the basin for many years and DEQ will defer to their expertise to prioritize and implement projects to address the sources of bacteria in the basin and to meet the implementation targets established in the TMDL. Some of these agencies include: Oregon Department of Agriculture, Oregon State University, Baker County Soil and Water Conservation Districts, USDA-National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin. To make sure that the basin is moving the right direction and addressing the primary sources of bacteria, monitoring results and the implementation of actions will be reviewed every five years as part of adaptive management to

track progress, highlight successes, and to address any barriers to implementing successful on the ground water quality projects.

91. Comments from: Kate Rohner

KtR#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

KtR#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might

reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

KtR#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the

identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

KtR#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where

significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

92. Comments from: Lorrie Andrews

LA#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections

are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

LA#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

LA#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

LA#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

LA#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and

Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

LA#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

93. Comments from: Lee M. Phillips

LMP#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and

Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

LMP#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

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The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate

loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

LMP#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

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DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

LMP#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

LMP#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for

agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

LMP#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

94. Comments from: Lee Rimmer

LR#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply,

irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

95. Comments from: Lyndsie Williams

LW#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

96. Comments from: Mark & Diana Fillmore

M&DF#1: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

97. Comments from: Mark and Savannah Kerns

M-SK#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

M-SK#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might

reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

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Changes were made based on this comment.

M-SK#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the

identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

M-SK#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where

significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

M-SK#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

M-SK#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

98. Comments from: Mike Beaty

MB#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

99. Comments from: Multiple Commenters, form letter Bart Murray. et al

MCfIBMea#1: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

100. Comments from: Mary DiLoreto

MDL#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

101. Comments from: Mary Ellen Anderson

MEA#1: Suggested Change ID #85

Description: TMDL documents - Remove bias against agriculture

Comment: Revise TSD to remove bias and disrespect: In the Draft TSD in table 5.2.1-page 69, Livestock grazing and pasture irrigation, shows bias towards animal agriculture without proof in the DEQ conclusions and are only based on assumptions. The Draft Water Quality Management Plan (WQMP) further shows the bias towards cattle as the main contributor based on assumptions instead of valid data. This section also concludes that the ag water quality

program (Burnt River LAC) is ineffective in addressing E. coli. This conclusion is a direct slap in the face to ODA and the 1010 committee in their work over the last several years. The committee can only address the Water Quality Impairments that have a standard tied to them, which are temperature, sediment, and algae and in our (BRID) opinion have done a great job addressing these issues. Until now the committee has not had a standard for E-coli but are very capable of addressing it in the future.

Response: Thank you for this comment. DEQ has edited content throughout the draft TMDL documents to clarify that the combined category of background and nonpoint sources includes contributions of E. coli from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands from annual or seasonal livestock populations. DEQ understands that contributions of fecal bacteria from individual sources will vary by location and over time. It is not DEQ's intention to conclude that a single source is the primary contributor of E. coli in the basin. Rather, the proposed TMDL is intended to convey information about all potential point and nonpoint sources of E. coli, to calculate an allowable E. coli load, to provide information about reduction targets, and to begin a process of adaptive management that will lead to improved water quality. DEQ has revised the draft TMDL documents to clarify the varied sources of E. coli from within the nonpoint sources and background category, and to emphasize that primary sources of fecal bacteria can vary by location and over time.

DEQ has removed use of the terms "irrigation and non-irrigation seasons" and replaced these with specific months. These terms were used to help characterize hydrology in the region that is influenced by water retention in reservoirs in the spring for release through summer months and were not intended to implicate any one E. coli source as dominant throughout the basin.

DEQ also acknowledges that there are many landowners and groups in the Powder River Basin that provide examples of land stewardship and are currently implementing best management practices to protect water quality. TMDL implementation requirements are intended to be complementary to existing natural resource management plans. As noted in the comment, ODA's Agricultural Water Quality Area Plans and Strategic Implementation Area processes play a vital role in protecting water quality in the Powder River Basin. Content in the proposed Water Quality Management Plan includes communication between DEQ and DMAs to facilitate TMDL implementation planning and provides direction about potential gaps in current programs that may need additional measures to achieve goals of the E. coli TMDL.

DEQ appreciates efforts of the 1010 committee and Burnt River Irrigation District in considering water quality standards and taking steps to improve water quality. In 1986, EPA published recommended water quality criteria to protect those engaging in full-body contact recreation, such as swimming and surfing, in both fresh and coastal waters. These criteria were based on epidemiological studies conducted in the Great Lakes and northeastern United States that linked various bacterial indicators with incidences of gastrointestinal illness. Analysis of the studies showed that the bacterial indicators E. coli and enterococcus were the best indicators of illness in freshwater and that enterococcus was the best indicator in coastal waters. The Environmental Quality Commission (EQC) adopted the enterococcus criteria for freshwaters and non-shellfish growing estuarine waters to replace the fecal coliform criteria as of July 1, 1995. Then, in 1996, the EQC replaced the enterococci criteria with E. coli criteria for "freshwaters and non-shellfish harvesting estuaries".

(<https://www.oregon.gov/deq/FilterDocs/BacterialIssuePaper.pdf.pdf>)

Oregon's Bacteria Standards can be found in OAR 340-041-0009
(<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=68695>)

Changes were made based on this comment.

MEA#2: Suggested Change ID #88

Description: TMDL documents - Bias against agriculture in technical documents

Comment: I want to mention that the document itself, the technical document, is very oriented towards inducing consensus, that livestock - like cattle in particular and irrigated agriculture - are the main contributors on the nonpoint source pollution. It kind of rules out wildlife - and there's some argumentation about it - and it rules out some of the other nonpoint source pollution there. The emphasis is on cattle. In today's meeting, I didn't hear that. It was more about the nonpoint source solution integrated as a whole. But in the document itself, it kind of talks about cattle, in particular. So I invite DEQ to kind of revise the document and consider those things. If there is proof of that - that cattle is causing that - there is no causal relationship that you can derive from the report.

Response: DEQ appreciates this feedback. As noted in the comment, the combined category of background and nonpoint sources includes contributions of E. coli from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands that may have livestock populations for a portion of the year. DEQ recognizes that contributions of E. coli from individual sources will vary by location and over time. DEQ has revised Section 7.1 of the proposed TMDL and Section 5.2 of the Technical Support document clarify that the intention of the source assessment is to identify potential sources of E. coli throughout the basin, not to assign a primary contributor basin wide. The draft TMDL documents convey information about all potential point and non-point sources of E. coli, calculate an allowable E. coli load, provide information about reduction targets, and begin a process of adaptive management, as outlined in the Water Quality Management Plan, that will lead to improved water quality. DEQ has revised the draft TMDL documents to clarify the varied sources of E. coli within the non-point and background categories and emphasize that primary sources of E. coli will vary by location and time.

Changes were made based on this comment.

102. Comments from: McGinn Ranch

MGR#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

MGR#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public

access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

MGR#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

MGR#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and

feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

MGR#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

MGR#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

103. Comments from: Marshall McComb

MMC#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

104. Comments from: Mountain View Cattle Company, Inc

MVCCI#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits

to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

MVCCI#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

MVCCI#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

MVCCI#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

MVCCI#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli

is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

MVCCI#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

105. Comments from: Michael Meyer

McM#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

106. Comments from: Mackenzie Ranch

McR#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

McR#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

McR#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft

TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

McR#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local,

state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

107. Comments from: Margaret Durner

MrD#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Powder River Basin TMDL.

108. Comments from: Marcella Neske

MrcN#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

MrcN#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public

access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

MrcN#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

MrcN#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and

feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

MrcN#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

MrcN#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

109. Comments from: Mark Scantlebury

MrkSc#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

110. Comments from: Mark Stromme

MrkSt#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

111. Comments from: Martin Neske

MrtN#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

MrtN#2: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20

sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

112. Comments from: Myron Miles

MyM#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

MyM#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

MyM#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

MyM#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other

persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

MyM#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

MyM#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

113. Comments from: Nancy & Andrew Rorick

N&AR#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

114. Comments from: Neal Hadley

NH#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human

activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

115. Comments from: OSU Extension Service

OES#1: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and

the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

OES#2: Suggested Change ID #17

Description: Data - Older data should not be used in the TMDL

Comment: Comments dispute usage of very old sample data at all sites on the Burnt River. Outdated sampling won't take into consideration the improvements made by landowners for the last 10 years. Bacteria water quality improvements from ODA and SWCD is not shown in the data because it was collected between 2007 and 2013.

Response: DEQ agrees that water quality improvements resulting from recent watershed restoration and improvement projects conducted since 2013 are mostly not represented in the E. coli sample data in the Powder River Basin Bacteria TMDL. As part of regular water quality assessments, DEQ conducts analysis of trends in water quality data collected at long-term monitoring sites in the basin. Information about the data and trend analyses can be found in Section 5.1 of the Technical Support Document. Data from the past 24 years (2000-2024) of E. coli samples collected at three long-term monitoring stations: 1) Powder River at Highway 7 (11490-ORDEQ), 2) Powder River at Hwy 86 (10724-ORDEQ), and 3) Burnt River at Snake River Road (11494-ORDEQ), indicate that exceedances of the E. coli standard are still occurring at these locations. DEQ has updated the Technical Support Document to add the most recent samples to the trend analyses. DEQ is encouraged by the improvements to land management practices in the Powder River Basin and recognizes the immense efforts made by landowners, ODA, the SWCD, and others. DEQ understands that these projects are beneficial for water quality and that it can take time to see overall water quality improvement resulting from changed management practices on individual properties. DEQ recommends these improvements be documented and promoted within the region and included in TMDL reporting. As part of the TMDL process, monitoring results and on the ground actions will be reviewed every five years to record progress, update actions, and to address barriers to success. These five-year reviews provide opportunities to promote the successes of individual projects and where appropriate document progress in the form of official success stories.

Changes were made based on this comment.

OES#3: Suggested Change ID #24

Description: Data - Data referenced in the TSD should be made available

Comment: I would like to see the data, know who collected it and when - which I can't determine from the technical support document.

Response: DEQ is glad to provide the methods for sample collection and the data used in analyses. DEQ made the Quality Assurance Project Plans for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also provided the full datasets used in the proposed TMDL analyses to Rule Advisory Committee members and those who requested the data at the public hearing. Data used for analyses and ongoing assessments is also made publicly available through DEQ's Ambient Water Quality Monitoring System data portal, or upon request.

OES#4: Suggested Change ID #75

Description: Data - E. coli exceedances at long-term monitoring sites

Comment: In this case I have looked through the technical report and the water quality management plan and I'm looking at the monitoring data. And what I'm seeing is that since November 2013, if I am seeing all the data, then you really only have 3 sites that have data beyond that time up until recently, and the 3 sites are the Powder River at Highway 7 in Baker City, the Powder River at Highway 86 east of Baker City and Burnt River at Snake River Road Huntington. All 3 of these sites, if you look at the number of measurements taken, range from 27 to 29 measurements, and having one to 3 samples out of those being bad. And actually most of those, almost all of them are just slightly above the sample criteria. And so the reason I'm bringing this up is that the locations - it's very, very difficult to say that the bacteria concentration at those stations relate directly to livestock, for example, or for any other land use, for that matter.

Response: DEQ appreciates the opportunity to discuss trends in long-term ambient monitoring data collected in the Powder River Basin. DEQ has updated the data analysis presented in Section 5.1 of the Technical Support Document in response to your comments.

DEQ has determined that separating data collected as part of the focused TMDL project from 2007-13 (DEQ 2013) from data collected as part of the DEQ ambient monitoring program (DEQ 2016). DEQ considers this separation important because the objectives for the two monitoring efforts differ substantially. The TMDL project from 2007-2013 focused on assessing if or when both geometric mean and single sample criteria for E. coli had been met over the course of a year across multiple locations. Data collected at the three ambient monitoring locations in the basin at multiple sites where selected to be at publicly accessible locations and cross seasons Data collected at the three ambient monitoring locations in the basin (11490-ORDEQ, 10724-ORDEQ, and 11494-ORDEQ) approximately every two months are used to examine status and trends of water quality. For E. coli data, the objective in ambient monitoring is to examine status and trends in relation to the single sample criterion, although the single sample criterion is directly related to the geometric mean criterion (DEQ, 2023). In response to your comment, DEQ updated the analysis of status and trends in E. coli at the three ambient monitoring locations to include only DEQ ambient samples collected from 2000-2024. The analysis also incorporates a seasonal Mann-Kendall test (Meals et al., 2011) to examine trends over the period of record using November-April and May-October as the two seasons, (Section 5.1 of the Technical Support Document). Overall, 25% (11490-ORDEQ), 33% (11857-ORDEQ), and 100% (10724-ORDEQ) of samples collected at the ambient sites have exceeded the single sample criterion within the past year (2023). Moreover, seasonal Mann-Kendall tests suggest that E. coli concentrations have increased over the period at all three locations (Section 5.1 of

the Technical Support Document). Although these results suggest continued exceedances of the single sample criterion for E. coli in the basin, DEQ agrees that attributing individual exceedances, either from the DEQ ambient dataset or the TMDL project dataset, to a specific source is difficult given the inherent landscape/land use variability in upstream catchment areas contributing. To address this difficulty, DEQ has reevaluated TMDL document (Section 7.1) and Technical Support Document (Section 5.2) to describe nonpoint source categories potentially contributing to excess E. coli loading and removed the ranking of relative importance. The reevaluation of the approach does not affect the allocation approach, which groups background and other nonpoint sources together into a load allocation and NPDES permitted point sources into a waste load allocation. The Water Quality Management Plan goes over approaches to better identify, and manage, specific sources of E. coli loading to different areas of the basin. Implementation Plans developed by Designated Management Agencies will also address source identification, monitoring, and management. DEQ would also like to recognize that working with OSU Extension will be critical for moving forward the water quality management in the Powder River Basin other areas in eastern Oregon.

References: DEQ. 2013. Quality Assurance Project Plan – Powder/Burnt Basins 2012 TMDL Bacteria Study (original 2007 and amendments 2010, 2011, 2012 and 2013). Available at: <https://www.oregon.gov/deq/wq/tmdls/Pages/powderTMDL.aspx>. DEQ. 2016.

Sampling and Analysis Plan – Ambient WQ Network – ODA Sites. DEQ11-LAB-0035-SAP. April 8, 2015. DEQ. 2023. Technical Support Document: Upper Yaquina Watershed TMDLs – Mid Coast Basin. Oregon Department of Environmental Quality. Portland, OR. <https://www.oregon.gov/deq/wq/Documents/UpperYaquinaBacDOw-appendices.pdf>.

Meals, D.W., J. Spooner, S.A. Dressing, and J.B. Harcum. 2011. Statistical analysis for monotonic trends, Tech Notes 6, November 2011. Developed for U.S. Environmental Protection Agency by Tetra Tech, Inc., Fairfax, VA, 23 p. Available online at <https://www.epa.gov/polluted-runoff-nonpoint-source-pollution/nonpoint-source-monitoringtechnical-notes>.

Changes were made based on this comment.

116. Comments from: OSU

OS#1: Suggested Change ID #79

Description: Data - Analyses and trends unclear from data presented

Comment: Dr. Ochoa found serious deficiencies after reviewing the technical documents and proposed management plan to which he encourages DEQ to provide examples. For example, table 5.1 in the technical document alludes to data from 2007-2013, which is used to recommend a 90-95% reduction in bacteria. Some other graphs talks about data from 2019, but this data is not available to review in the document. He would like to see the data and perform analysis on it in order to provide comments to DEQ and feedback to the community.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL

website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ has also provided the full datasets used in TMDL analyses to Rule Advisory Committee members and those who requested the data at the public hearing, including Dr. Ochoa. Data used for TMDL analyses and ongoing assessments is also made publicly available through DEQ's Ambient Water Quality Monitoring System data portal (<https://www.oregon.gov/deq/wq/pages/wqdata.aspx>), or upon request.

OS#2: Suggested Change ID #88

Description: TMDL documents - Bias against agriculture in technical documents

Comment: I want to mention that the document itself, the technical document, is very oriented towards inducing consensus, that livestock - like cattle in particular and irrigated agriculture - are the main contributors on the nonpoint source pollution. It kind of rules out wildlife - and there's some argumentation about it - and it rules out some of the other nonpoint source pollution there. The emphasis is on cattle. In today's meeting, I didn't hear that. It was more about the nonpoint source solution integrated as a whole. But in the document itself, it kind of talks about cattle, in particular. So I invite DEQ to kind of revise the document and consider those things. If there is proof of that - that cattle is causing that - there is no causal relationship that you can derive from the report.

Response: DEQ appreciates this feedback. As noted in the comment, the combined category of background and nonpoint sources includes contributions of E. coli from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands that may have livestock populations for a portion of the year. DEQ recognizes that contributions of E. coli from individual sources will vary by location and over time. DEQ has revised Section 7.1 of the proposed TMDL and Section 5.2 of the Technical Support document clarify that the intention of the source assessment is to identify potential sources of E. coli throughout the basin, not to assign a primary contributor basin wide. The draft TMDL documents convey information about all potential point and non-point sources of E. coli, calculate an allowable E. coli load, provide information about reduction targets, and begin a process of adaptive management, as outlined in the Water Quality Management Plan, that will lead to improved water quality. DEQ has revised the draft TMDL documents to clarify the varied sources of E. coli within the non-point and background categories and emphasize that primary sources of E. coli will vary by location and time.

Changes were made based on this comment.

117. Comments from: Oregon State Legislature

OSL#1: Suggested Change ID #66

Description: Process - Reopen the rule for allocation revisions, if needed

Comment: In 5 – 7 years after adoption of the Powder River Bacteria TMDL, if additional data collection and analyses support a significantly different bacteria allocation distribution, then DEQ would draft and propose a revised TMDL for EQC consideration/adoption. Is there a way we could link it to the desire for the local community and DEQ to work together on further data collection in the first 5 or so years to give the community ownership in some of the data collection?

Response: DEQ will engage with DMAs, responsible persons, and local partners to encourage coordination of monitoring activities in the Powder River Basin and participation in development of a Monitoring Strategy for the TMDLs. With input from these parties, DEQ will develop overarching water column sampling and analysis plans to finalize the first iteration of the Powder River Basin Monitoring Strategy, after the issuance of the TMDLs and WQMP. DEQ will continue to work with partners to implement the sampling and analysis plan(s), review the results, and iteratively refine the strategy. DEQ edited Section 6 of the draft Water Quality Management Plan (WQMP) to emphasize opportunities for engagement, including conducting additional monitoring. A statement has also been added to the WQMP describing a process for TMDL revision if future data analyses show that *E. coli* allocations assigned to point and nonpoint sources should be differently distributed.

Changes were made based on this comment.

118. Comments from: Oregon Water Resources Congress

OWRC#1: Suggested Change ID #12

Description: TMDL documents - Water conveyance districts (adjust summary)

Comment: Water conveyance districts should not be designated in the TMDL/WQMP rules as responsible persons (or Designated Management Agencies)

Remove Burnt River Irrigation District as a responsible person

Response: DEQ recognizes that implementation of best management practices and other management alternatives to reduce effects of nonpoint source pollution on waterbodies can take extended periods of time. In Section 4 of the Water Quality Management Plan, DEQ includes information based on experiences in nearby basins that sufficient reductions in *E. coli* could be attained within 20-30 years with implementation of best management practices. DEQ looks forward to working with Designated Management Agencies and other persons responsible for developing TMDL Implementation plans about the expected timelines for management implementation and expected water quality responses for different areas of the Powder Basin.

Sections of the TMDL and Technical Support Document include irrigation districts, drainage districts, and other water delivery and conveyance systems that influence the quantity and timing of water delivery to downstream river reaches within the basin. Return flows can enter waters of the state through ditches, pipes, and overland flows after contacting manure in fields. Owners and operators of these systems are included as responsible persons in the Water

Quality Management Plan because maintenance and management of these systems could impact bacteria loads. To date, none of the identified water conveyance districts (including the Burnt River Irrigation District) confirmed that maintenance and management of their system(s) do not impact bacteria load contributions to Powder Basin waterways. The Water Quality Management Plan will continue to identify water conveyance districts (including BRID) as persons responsible for TMDL implementation. The major irrigation districts in the Powder Basin have responsibility to develop approvable implementation plans within 18 months of TMDL issuance. DEQ expects these plans to be limited for certain aspects such as operations and maintenance, systems, or components that could impact delivery of bacteria to waters of the state. These implementation plans may be district-specific, or the irrigation entities may find efficiencies in collaboration of multi-district plans or a unified plan. During plan development, it will be necessary to describe the geography and function of each system such that assessment can be completed to determine where management strategies are needed and what strategies will be feasible and effective.

119. Comments from: Pat and Anna Sullivan

P-AS#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department

of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

P-AS#2: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using

microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

P-AS#3: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

P-AS#4: Suggested Change ID #13

Description: Data - flow gage near Clarks Creek

Comment: DEQ's analyses used flawed flow data. At the Clarks Creek measuring and collection area, the flow data used from Idaho Power was proven to be inaccurate for many years. The site has never been a good control point for flow data.

Response: DEQ appreciates the concern over the accuracy and quality of data used from the Idaho Power flow gage at Clarks Creek (Station 13274020 - Burnt River near Bridgeport, Oregon). DEQ was not aware of the information provided by the commenters. DEQ recommends that concerns or revisions to flow data be included in the TMDL implementation plan developed by DMAs responsible for the reach of the Burnt River below Clarks Creek.

P-AS#5: Suggested Change ID #19

Description: TMDL documents - Bias against agriculture

Comment: It is offensive that DEQ grouped non-point sources into one category but blamed cattle for 90% of E. coli. I have spoken to several of the DEQ representatives in length and have read the literature they have available and have never seen or heard anything that says they estimate that 90% of the contaminates are from agriculture.

Response: DEQ appreciates the comment and opportunity to provide clarification about the draft TMDL load allocations. Changes were made to the proposed TMDL.

Section 9 of the draft TMDL summarizes the percent E. coli load allocations for point and non-point sources in each of the river reaches analyzed and reflects the amount of E. coli that can be present in surface waters while still meeting water quality criteria. As the commenter noted, the combined category of background and non-point sources of E. coli includes contributions from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands with annual or seasonal livestock populations. Together, these non-point and background sources are allocated 89 percent of the total maximum daily load for E. coli in most reaches analyzed, and from 42.9 to 88 percent in two reaches that also contain E. coli sourced from wastewater treatment plants. Please note that the draft TMDL documents have not assigned a specific allocation to cattle, as this has not been quantified. DEQ has also revised language in the draft TMDL documents to clarify the contributing sources of E. coli included in the non-point source category, and to highlight the importance of additional assessments to verify primary E. coli sources during TMDL implementation.

Changes were made based on this comment.

120. Comments from: Peter Barry

PB#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

PB#2: Suggested Change ID #45

Description: Water Quality Rules - Enforcement needed

Comment: The State of Oregon through the Department of Agriculture and Department of Environmental Quality have been historically negligent in enforcing water quality rules. This allows a minority of negligent landowners to continue polluting Powder Basin waters, which may erode the willingness of other landowners to comply with state regulations. Without sufficient enforcement there is ongoing pollution to surface waters caused by fecal bacteria, animal waste, sediment, and reduced riparian condition due to overgrazing to degrade water quality. Pollution of public waters by the agricultural sector hurts all water users. Now is the time for DEQ to do it's job by developing a plan to end degradation of water quality and enforce on non-compliance, protecting water quality for all users.

Response: DEQ appreciates the concerns expressed by commenters regarding protection of water quality in the Powder River Basin. While outside the scope of TMDL development, enforcement by the state of existing laws and regulations has a role in implementation of TMDLs and Agricultural Water Quality program rules and plans. In 2023, DEQ and Oregon Department of Agriculture updated our Memorandum of Agreement for Collaboration on Achieving Water Quality Goals Related to Agricultural Nonpoint Source Pollution. The MOA describes the different authorities and responsibilities of both agencies and how we will work together to protect and improve water quality in Oregon's streams flowing through agricultural lands or impacted by discharges from agricultural activities. The MOA specifies collaborative principles, including around TMDL development, implementation, monitoring and adaptive management; agricultural management area rules and plans reviews; and also includes a section on compliance and enforcement. The agencies are committed to improving all aspects of coordination to bring the relevant authorities and voluntary strategies to bear in improving and maintaining water quality related to agricultural lands and activities throughout the state.

121. Comments from: Pamela Conley

PC#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

122. Comments from: Pat Ormsbee

PO#1: Suggested Change ID #80

Description: Beneficial Uses - Support for protection of all uses - TMDL for prevention of ongoing risks to water quality

Comment: Thank you for addressing the management and protection of The Powder River. While roughly 11 of its 150+ miles is protected as wild and scenic, historically and currently the Powder River has continuously been exploited and transformed from its natural conditions and flows to primarily serve human demands for mining, grazing, and agriculture. The exploitation of The Powder River has negatively impacted fish, wildlife, riparian habitat, including native plant species, human recreation, and basic water quality. Historical, large-scale mining has subsided, while the impacts of which have been eclipsed by large scale agriculture and grazing. Particularly, the very real threat of potentially toxic chemical and bacterial levels from agriculture and grazing practices that have been documented in the river for decades. It is time to shift the exploitation-based paradigm that benefits a few to one of greater water resource and riparian habitat protection for the many and for the future of Powder River. I advocate for the improved management of the Powder River that is critical to sustainable protection and improvement for fish, wildlife, human recreation, and water and riparian quality. Begin shifting emphasis to water quality and riparian protection and from domination of farming and ranching operations at the cost of water quality. Establish and enforce a Total Maximum Daily Load (TMDL) for the Powder River per the Oregon DEQ rulemaking process. The Powder River TMDL must be set at a level that protects and prevents risk from pollutants to native fish and wildlife species and safely allows for human recreational use. The Oregon DEQ must take the lead to meet these requirements by ensuring development, implementation, and completion of a cleanup plan, including monitoring and tracking the cleanup progress. All of these steps will only be successful if public input and participation occurs including simultaneous State and Federal education, assistance, and possibly funding for Ranchers and Farmers to identify and address impacts to them and enlist their input and participation. Thank you again for your attention and dedication to cleaning up the Powder River.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses provided in OAR 340-041-0260 in the Powder/Burnt Basin are public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality.

PO#2: Suggested Change ID #89

Description: Beneficial Uses - Support for protection of all uses - support TMDL

Comment: Thank you for addressing the management and protection of The Powder River. While roughly 11 of its 150+ miles is protected as wild and scenic, historically and currently the Powder River has continuously been exploited and transformed from its natural conditions and flows to primarily serve human demands for mining, grazing, and agriculture. The exploitation of The Powder River has negatively impacted fish, wildlife, riparian habitat, including native plant species, human recreation, and basic water quality. Historical, large-scale mining has subsided, while the impacts of which have been eclipsed by large scale agriculture and grazing. Particularly, the very real threat of potentially toxic chemical and bacterial levels from agriculture and grazing practices that have been documented in the river for decades. It is time to shift the exploitation-based paradigm that benefits a few to one of greater water resource and riparian habitat protection for the many and for the future of Powder River. I advocate for the improved management of the Powder River that is critical to sustainable protection and improvement for fish, wildlife, human recreation, and water and riparian quality. Begin shifting emphasis to water quality and riparian protection and from domination of farming and ranching operations at the cost of water quality. Establish and enforce a Total Maximum Daily Load (TMDL) for the Powder River per the Oregon DEQ rulemaking process. The Powder River TMDL must be set at a level that protects and prevents risk from pollutants to native fish and wildlife species and safely allows for human recreational use. The Oregon DEQ must take the lead to meet these requirements by ensuring development, implementation, and completion of a cleanup plan, including monitoring and tracking the cleanup progress. All of these steps will only be successful if public input and participation occurs including simultaneous State and Federal education, assistance, and possibly funding for Ranchers and Farmers to identify and address impacts to them and enlist their input and participation. Thank you again for your attention and dedication to cleaning up the Powder River.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses provided in OAR 340-041-0260 in the Powder/Burnt Basin are public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality. These beneficial uses are considered in the development and analyses for E. coli in the Power River Basin TMDL.

123. Comments from: Pacific Rivers

PR#1: Suggested Change ID #63

Description: TMDL documents - Wild and Scenic designated waters; support for the TMDL

Comment: ODEQ has the responsibility and the authority under the federal Clean Water Act and Oregon statutes to bring pollution within fishable/swimmable limits. It must establish beneficial uses of all waters and water quality criteria to protect the most sensitive of those uses. When those criteria are not met, it must develop an overall limit for the pollutants responsible and a clear plan to bring them under control.

We believe that with the issuance of the Powder River TMDL as currently drafted, ODEQ will have done that. The pollution problems in the Powder River Basin have been quantified. Their multiple sources have been identified and quantified. Water quality goals have been established. A long-term plan to achieve them has been developed. Timelines have been established and responsibilities assigned. The water quality management plan builds on strategies successfully employed in other areas, including Oregon's Malheur River Basin. We believe that the plan is clear enough to bring progress soon and flexible enough to allow all concerned to find the best ways to achieve the necessary results over the longer term. This is the proper way to solve long-term water quality problems in any basin. It is doubly important to apply it in the Powder River Basin because doing so may help address serious water quality problems that exist downstream in Brownlee Reservoir, in the two other Snake River reservoirs below it, and in the Snake River far downstream of Hells Canyon Dam. Pacific Rivers has a particular and well-established interest in seeing those problems solved, in order to make fish from the Snake River in and below the Hells Canyon reservoirs safe to eat. Indeed, we have a formal agreement with ODEQ to work toward that end.

Response: Thank you for this additional information. DEQ has updated both the TMDL and TSD documents to include descriptions of the two river reaches in the basin that were designated in 1988 as Scenic under the federal Wild and Scenic Rivers Act of 1968. The reaches include a 6.4-mile reach of the North Powder River from its headwaters in the Elkhorn Mountains to the Wallowa-Whitman National Forest boundary and an 11.7-mile reach of the Powder River from Thief Valley Dam to the Highway 203 bridge (National Wild and Scenic River System, 2024). Multiple agencies and organizations have been working locally within the basin to implement programs and provide monitoring to help coordinate projects within the area. Some of the agencies include: Oregon Department of Agriculture, Oregon State University, Malheur Soil and Water Conservation District, USDA-National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin and these efforts will take time to implement. This Powder River Basin TMDL covers all freshwater perennial and intermittent streams in the Powder River Basin (and a small portion of the Malheur Basin - Moore's Hollow assessment unit) and will help to guide restoration actions protect and enhance water quality. To make sure that the basin is moving the right direction monitoring results and the implementation of actions will be reviewed every five years as part of adaptive management to track progress, highlight successes, and to address any barriers to implementing on the ground water quality projects.

Changes were made based on this comment.

PR#2: Suggested Change ID #82

Description: Beneficial Uses - Support for protection - TMDL can achieve water quality

Comment: ODEQ has the responsibility and the authority under the federal Clean Water Act and Oregon statutes to bring pollution within fishable/swimmable limits. It must establish beneficial uses of all waters and water quality criteria to protect the most sensitive of those uses. When those criteria are not met, it must develop an overall limit for the pollutants responsible and a clear plan to bring them under control. We believe that with the issuance of the Powder River TMDL as currently drafted, ODEQ will have done that. The pollution problems in the Powder River Basin have been quantified. Their multiple sources have been identified and quantified. Water quality goals have been established. A long-term plan to achieve them has been developed. Timelines have been established and responsibilities assigned. The water quality management plan builds on strategies successfully employed in other areas, including Oregon's Malheur River Basin. We believe that the plan is clear enough to bring progress soon and flexible enough to allow all concerned to find the best ways to achieve the necessary results over the longer term.

Response: Thank you for your comments in support of the TMDL.

124. Comments from: Roger and Linda Smith

R-LS#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

R-LS#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

R-LS#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

R-LS#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

R-LS#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-

0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

R-LS#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

125. Comments from: Rick and Susan Meis/Bogliano

R-SM#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

126. Comments from: Roy Anderson

RA#1: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

127. Comments from: Rob Cordtz

RC#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Powder River Basin TMDL.

128. Comments from: Robert McKim

RMK#1: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

RMK#2: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

129. Comments from: Robert McKim

RMK.1#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

RMK.1#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

RMK.1#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to

uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

RMK.1#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S.

Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

RMK.1#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

RMK.1#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

130. Comments from: Robert Borst

RbB#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

131. Comments from: Rachel Bender

RcB#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

132. Comments from: Ralph Morgan

RIM#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

RIM#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL

website: <https://www.oregon.gov/deq/wg/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

RIM#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

RIM#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide

excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

133. Comments from: SWCD and local landowner

S-II#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about

DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

S-II#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

S-II#3: Suggested Change ID #16

Description: Data - High variation in data suggests sampling error

Comment: The E. coli data presented by DEQ in the TMDL varies widely at each sample site, even within very short timeframes (days). These large discrepancies are surprising and suggest sampling errors.

Response: DEQ appreciates the opportunity to clarify the importance of variation in E. coli concentrations over time at different locations. Variation, sometime large, in measured E. coli concentrations over time is a common observation in many areas, including in other Oregon basins with mixed land uses such as the Rogue, Willamette, and Malheur. Variation in E. coli numbers at the same site over multiple days suggests changes in inputs from upstream sources and differences in flow across days (documented in the variation of flow across days in the provided data). DEQ developed Quality Assurance Project Plans for this project and has made them available on the Powder TMDL website, <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. Additional details about sampling and laboratory methods can be found in the plans.

S-II#4: Suggested Change ID #29

Description: Data - Percent reductions of bacteria span a broad range and don't make sense

Comment: The commenters are concerned about the targets for bacteria percent reductions stated in the TMDL in part because it is unclear where they came from. The percent reductions required across stream reaches analyzed also span a wide range (40 - 95%), which also causes confusion and could indicate a moving goal post. Baker County also asks DEQ to explain this statement from the TMDL, "Because differing sources contribute differing magnitudes of bacteria during differing flow conditions, DEQ chose to use the maximum observed concentration to calculate reductions needed across all flow categories and then chose the maximum reduction across all areas."

Response: The range of bacteria reduction percentages needed (40% to 95%), cited by the commenter, is a summary of excess E. coli loads across all nonpoint and background sources and was presented in the draft Water Quality Management Plan, Table 2.0a. This is a summary of all stream reaches analyzed based on the flow category with the highest observed exceedance of the water quality criteria, and can be found in more detail in the TMDL and Technical Support Document tables. Excess E. coli loads are expressed as a percent reduction that is needed, based on currently calculated loads. DEQ presented the range to summarize information in the TMDL document, and these numbers do not represent a moving goal. Please note that these location-specific excess loads are not regulated requirements, like permit limits. Instead, these targets are a collective goal across sources by implementing proven management strategies, which DEQ acknowledges to have varying applicability and potential effectiveness depending on location and current conditions. The Adaptive Management Process used in TMDL implementation relies on regular reporting and updated monitoring data to assess progress toward meeting water quality targets and allows for adjustment of activities to meet these targets.

The quoted statement referenced by Baker County was taken from Section 9.3 of the draft TMDL, which describes how a margin of safety was derived and included in the TMDL

calculations. The statement highlights that E. coli levels are variable over time, based on changes in bacteria sources and seasonal river flows. The referenced statement provides a description of methods used to establish the necessary bacteria reduction target that will ensure attainment of water quality standards at all flow categories in each of the reaches analyzed, regardless of seasonal variation. For each river reach analyzed, DEQ determined the maximum percent reduction needed to achieve the E. coli concentration criteria under all flow conditions (low, medium-low, medium, medium-high, and high flows) and applied it as the target across all flows. This approach ensures that E. coli standard will be met under all flow conditions and seasons for specific areas draining to identified reaches. This approach is consistent with other EPA approved TMDLs in Oregon. The percent reduction of E. coli is necessary to attain water quality standards regardless of source.

S-II#5: Suggested Change ID #73

Description: Process - Clarify why bacteria is a water quality problem

Comment: It is not clear why bacteria is a problem. There are billions of species of bacteria. Why is E. coli selected as a primary concern for water quality?

Response: The TMDL addresses Escherichia coli, commonly called E. coli. EPA's E. coli fact sheet explains "E. coli is considered an indicator organism, used to identify fecal contamination in freshwater and indicate the possible presence of disease-causing bacteria and viruses (pathogens). Individuals who swim or come in contact with water with elevated levels of E. coli and other fecal indicator organisms are at an increased risk of getting sick because of potential exposure to fecal pathogens." (https://www.epa.gov/system/files/documents/2021-07/parameter-factsheet_e.-coli.pdf)

In 1986, EPA published recommended water quality criteria to protect those engaging in full-body contact recreation, such as swimming and surfing, in both fresh and coastal waters. These criteria were based on epidemiological studies that linked various bacterial indicators with incidences of gastrointestinal illness. Analysis of the studies showed that the bacterial indicators E. coli and enterococcus were the best indicators of illness in freshwater and that enterococcus was the best indicator in coastal waters. The Environmental Quality Commission (EQC) adopted the enterococcus criteria for freshwaters and non-shellfish growing estuarine waters to replace the fecal coliform criteria as of July 1, 1995. Then, in 1996, the EQC replaced the enterococci criteria with E. coli criteria for "freshwaters and non-shellfish harvesting estuaries". (<https://www.oregon.gov/deq/FilterDocs/BacterialIssuePaper.pdf.pdf>)

Oregon's Bacteria Standards can be found in OAR 340-041-0009 (<https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=68695>)

134. Comments from: Suzanne Fouty

SF#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

135. Comments from: Suzanne Fouty

SF.1#1: Suggested Change ID #47

Description: TMDL documents - Recommendations to improve data presentation

Comment: 1. For Future TMDLs:

- a) Avoid comments about possible causes of inputs. Simply state location and timing of values that exceed standards. Referring to “irrigation and non-irrigation seasons” assumes cause that may or may/not be correct and puts folks on the defensive.
- b) Use months when describing times of high concentrations as this is something the public understands (Table 1). Flow levels of high, medium-high etc could be attached to the months since they often coincide with the stream hydrographs and flow levels.
- c) Let the deeper dive done by the DMAs do the identification of causes and narrow down the actual places of concern. Keep the DEQ TMDL at the broad-brush level by avoiding language used that assumes cause and effect.

Response: DEQ appreciates the suggestions for data display and communication surrounding the development and implementation of the TMDL. DEQ has removed the speculative language ranking the importance of specific E. coli sources in Section 7.1 of the TMDL document and Section 5.2 of the Technical Support Document. Regarding the use of “irrigation” and “non-irrigation” seasons, the original intent of using these terms was to categorize seasonal differences in hydrology that reflect flow, climatic patterns, and common management practices of the basin. However, based on feedback from this comment and others during the public comment period, DEQ has chosen to change the terminology to November-April and May-October that continue to align with precipitation, climate, and management regimes of the basin (Section 2.2 of the Technical Support Document). DEQ has also inserted plots of flow over time and summaries of monthly flows to accompany the flow durational interval graphs in Section 2.2 of the Technical Support Document to highlight seasonal changes in flow. DEQ agrees that DMAs and responsible persons should take the lead on determining specific sources and practices potentially contributing excess E. coli loading and develop appropriate actions to

reduce loading. The Water Quality Management Plan highlights this process and provides guidance on how to proceed with TMDL implementation.

Changes were made based on this comment.

SF.1#2: Suggested Change ID #49

Description: Rulemaking - Fiscal Impact Statement should reflect importance of tourism

Comment: Maintaining, and in this case restoring, the quality of one of our natural resources is key to maintaining a diverse economy and healthy community. While livestock grazing is important in the community, so too is tourism which brought in \$72.1 million in 2022 and other types of agriculture which are on the rise. Recreation is an enormous asset in this county, both for locals and out-of-towners as are the countless small businesses and services provided.

Response: DEQ appreciates the comment about providing additional information regarding important economic sectors in Baker County. DEQ has added information to the fiscal impact statement regarding income and jobs in Baker County in 2022 derived from farming, ranching, recreation, and tourism.

Changes were made based on this comment.

SF.1#3: Suggested Change ID #83

Description: TMDL documents - Recommendations to improve public meetings

Comment: 2. Public meetings:

Maps: At public meetings bring large maps that can be tacked to the wall with the information below on it so that people can stand around and see the big picture. Helps focus questions and provides a clear, visual context for the process. Allows everyone to see the same landscape and data distributions and better understand the specifics of the questions being asked and the answers given.

Land ownership (pvt, FS, BLM, ODFW, County)

Key roads (i.e. main highways)

Stream gages used with numbers attached

All sample sites with those used in the TMDL coded differently

Known reaches that exceed based on reaches with existing samples and flow data.

Add another color code titled “Reach lacks flow data to make a water quality call.” This will help folks understand that the lack of being designated a reach of concern doesn’t necessarily mean all is well.

The addition of all the sample sites and stream gages will help make clear why some areas aren’t listed but that data is widespread. The land ownership will help make clear why data was collected where (i.e. public access) and limitations of this first step.

Process description: On another large sheet of paper put a description of the process that can be looked at collectively.

Make sure to note that sample locations are limited to places with public access and thus only the first broad analysis. This explains the limitations DEQ has when sampling, why entire reaches are colored even though the entire section may not have an issue, and why additional data collection will not add better resolution. Helps make clear the value of moving onto the next phase in which the DMAs generate plans and do the deeper dive.

Response: Thank you for your comments. DEQ will consider making these changes when we hold public meetings as time and resources allow.

SF.1#4: Suggested Change ID #84

Description: TMDL documents - Recommendations to improve data examples at public meetings

Comment: Data examples a) Include plots of sample data for some of the areas and their matching load duration curves by the large wall map with the location of those plots on the map clear. This allows folks to see that raw data does exist and begin to see how flow and concentrations result in the outcome. It may also help them see patterns in the timing of concentrations. b) Graph a hydrograph for some of the gage sites. This helps ground the discussion and results in a way the public understands and experiences on a yearly basis and provides the link between months and flow levels.

I hope these public meeting recommendations are helpful. The printed material is valuable to leave with but the big maps, process descriptions, and some data examples tied to locations on the map will allow for a much broader understanding and thus more productive outcome. They will help prevent the discussion from becoming abstract and confusing.

Response: DEQ made changes to the Technical Support Document and appreciates the suggestions for presenting data at future public presentations in the Powder River Basin. DEQ has incorporated the suggestion of displaying hydrographs for the three gaging stations into Section 2.2 of the Technical Support Document along with summaries of monthly flow for the period of record. DEQ believes this will improve the description of hydrology in the basin.

SF.1#5: Suggested Change ID #96

Description: Implementation - Add specific management strategies - implementation plan improvements

Comment: I urge you to approve the TMDL and WQMP but with expanded, rather than generic management strategies. Increase the specificity of the management strategies in Table 2.0a of the draft Water quality management plan (see examples below). Place the more detailed WQ management strategies into the body of the TMDL so that they are visible from the start as well as in the WQ Management Plan. In this way, the public and landowners can see from the beginning just how doable water quality improvement is and the process becomes much more concrete. Examples: “Fencing” or “Runoff Management” are too abstract. Recommend creating a matrix or flow chart that landowners can use to determine how far back the fence needs to be from the stream bank to be effective based on ground cover and type, slope and soil type. This information can be generated using a runoff model. Too many of the current fences are at the edge of the stream bank. Thus, while a fence, it is a fence that may not be effective at buffering the streams and slowing runoff into the creek. Livestock may also use the area up to a fence line which can result in manure in close proximity to the creek. Charts/matrixes allow landowners to look at their land with a critical eye and tailor modifications with some assurances that they are actually improving conditions. They would also aid the public in understanding which steps have actual value and which do not.

Response: DEQ appreciates the thoughtful suggestions regarding TMDL implementation. The Oregon Administrative Rules, Chapter 340-042-0040 provides a complete list of required elements for TMDLs and WQMPs that comply with the Clean Water Act and provides the framework of management strategies to attain and maintain water quality standards. The Water Quality Management Plan framework is designed to work in conjunction with detailed plans and analyses provided in sector-specific or source-specific implementation plans. One intent of the WQMP is to provide guidance on applicable management strategies or practices while allowing flexibility for DMAs to propose specific implementation activities that will work best in unique locations and circumstances. DEQ strives for clear and effective strategies that are inclusive of specific DMA or responsible person expertise and considerations.

136. Comments from: SullivanZRanch, Inc.

SI#1: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

137. Comments from: Shawn Peterson

SP#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

SP#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

SP#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft

TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

SP#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local,

state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

SP#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

SP#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of

the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

138. Comments from: Snake River Music Garden

SRMG#1: Suggested Change ID #38

Description: Process - Explain why a TMDL is needed at this time

Comment: DEQ needs to explain why a TMDL is needed at this time. There are Agricultural Water Quality Management Plans already in place to protect and improve the ecosystem. Regulating with a TMDL does not seem necessary when there are already partnerships in place to support voluntary watershed restoration efforts. An adequate reason hasn't been presented by DEQ as to what existing problem would be solved by this TMDL.

Response: The need for Total Maximum Daily Loads (TMDLs) under the Clean Water Act (CWA) is driven by the Act's requirement for states to identify impaired waterways and develop plans for restoring water quality. The CWA further requires each state to develop Total Maximum Daily Loads for each impaired waterway segment and submit the draft TMDL to EPA for approval. DEQ's 2022 Integrated Report lists multiple reaches within each of the Powder River Basin subbasins including, Powder, Burnt, and Brownlee, as impaired for E. coli bacteria. Some of these reaches have been categorized as impaired for E. coli bacteria since 1998 with additional listings added in 2010 and 2018. All E. coli listings were reassessed in 2018, with newer data confirming these impairments. As such, DEQ must develop and implement a bacteria TMDL that is approved by EPA or implement a TMDL developed by EPA. Additionally, reaches of the Powder River Basin are also listed as impaired for dissolved oxygen, temperature, pH and sedimentation, and DEQ is required to develop TMDLs for those parameters by 2030. TMDLs developed through Oregon's process allows for communication and collaboration with federal agencies, other state agencies, and local governments.

SRMG#2: Suggested Change ID #71

Description: Analyses - DEQ needs more data to distinguish between elk and livestock bacteria

Comment: More sampling points are needed to study elk movement and distinguish between elk and livestock bacteria impacts in stretches of the Powder River and eastern watersheds.

Response: DEQ agrees that wildlife is a potential source of E. coli pollution to surface waters in the Powder River Basin, particularly in areas where wildlife congregate at artificial feeding

areas. To help ensure that the congregating elk are not contributing to excess loads of bacteria to nearby river reaches, DEQ has named ODFW as a Designated Management Agency in the TMDL. ODFW is required to develop an E. coli TMDL Implementation Plan for the feeding areas. DEQ also acknowledges that additional data may be useful to distinguish between elk and livestock contributions in some areas of the Powder River Basin. TMDL implementation plans should include identification and prioritization of locations for further monitoring or assessment. Monitoring or assessment methods may include additional water quality data collection or bacteriological source tracking (BST). These methods may be useful to determine which management strategies will be most effective in certain locations. DEQ does not expect management of wildlife sources of fecal contamination outside of those areas where wildlife congregate at the artificial feeding stations. Please also see other responses within this document for further discussion about appropriate uses for DNA analysis/BST methods.

139. Comments from: Scott Wilde

SW#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

SW#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

SW#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

SW#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners

to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

SW#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses,

according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

SW#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

140. Comments from: Tom Fauria

TF#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

141. Comments from: Tyler Hufford

TH#1: Suggested Change ID #17

Description: Data - Older data should not be used in the TMDL

Comment: Comments dispute usage of very old sample data at all sites on the Burnt River. Outdated sampling won't take into consideration the improvements made by landowners for the last 10 years. Bacteria water quality improvements from ODA and SWCD is not shown in the data because it was collected between 2007 and 2013.

Response: DEQ agrees that water quality improvements resulting from recent watershed restoration and improvement projects conducted since 2013 are mostly not represented in the E. coli sample data in the Powder River Basin Bacteria TMDL. As part of regular water quality assessments, DEQ conducts analysis of trends in water quality data collected at long-term monitoring sites in the basin. Information about the data and trend analyses can be found in Section 5.1 of the Technical Support Document. Data from the past 24 years (2000-2024) of E. coli samples collected at three long-term monitoring stations: 1) Powder River at Highway 7 (11490-ORDEQ), 2) Powder River at Hwy 86 (10724-ORDEQ), and 3) Burnt River at Snake River Road (11494-ORDEQ), indicate that exceedances of the E. coli standard are still occurring at these locations. DEQ has updated the Technical Support Document to add the most recent samples to the trend analyses. DEQ is encouraged by the improvements to land management practices in the Powder River Basin and recognizes the immense efforts made by landowners, ODA, the SWCD, and others. DEQ understands that these projects are beneficial for water quality and that it can take time to see overall water quality improvement resulting from changed management practices on individual properties. DEQ recommends these improvements be documented and promoted within the region and included in TMDL reporting. As part of the TMDL process, monitoring results and on the ground actions will be reviewed every five years to record progress, update actions, and to address barriers to success. These five-year reviews provide opportunities to promote the successes of individual projects and where appropriate document progress in the form of official success stories.

Changes were made based on this comment.

TH#2: Suggested Change ID #23

Description: Data - Inconsistent sample collection

Comment: I take issue with the lack of consistent methodology in the collection of sample sites used, particularly site 36192 at the confluence of the North Powder and Anthony Creek. This site, although having easy access, is positioned too close to the confluence to provide reliable Data. If the sample is taken from the river's south bank, the data would likely be skewed higher due to a return flow ditch converging directly at the testing site. Suppose the sample is taken from the north bank of the river. In that case, it is likely entirely water from Anthony Creek, which, as highlighted in the Wildlife Section (5.2.4) of the technical document, has a higher bacteria runoff at a maximum of 348 MPN per 100 ML compared to 300 MPN per 100 ML at the North Powder Pond 1 Site, 3.6 River Miles Downstream. Moreover, this stretch of the river is highly sensitive to adjustments made in the early mornings at the points of diversions above. Depending on when the monthly sample is taken, without coordination with the local ditch

companies, this sample could represent slack between these changes and not a representation of the bacteria load for that month.

Response: The Quality Assurance Project Plan is developed prior to writing the TMDL and is available online, <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx> on the project web page. The plan contains details about DEQ's sites and methods used to collect samples for the draft E. coli TMDL, and are intended to ensure consistent collection, handling, and processing of samples. DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which can require that multiple samples be collected on different days to assess a range of water quality conditions that occur at each site.

DEQ's collection sites are commonly limited to locations with public access. DEQ appreciates the additional insights about E. coli sources and flows at the confluence of the North Powder River and Anthony Creek provided by the commenter. This information will be particularly useful to help guide implementation monitoring to further refine E. coli source assessments along the North Powder River.

142. Comments from: Teresa Keller

TK#1: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

143. Comments from: True Sims

TS#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

144. Comments from: Tana Wood

TW#1: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

TW#2: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

TW#3: Suggested Change ID #19

Description: TMDL documents - Bias against agriculture

Comment: It is offensive that DEQ grouped non-point sources into one category but blamed cattle for 90% of E. coli. I have spoken to several of the DEQ representatives in length and have read the literature they have available and have never seen or heard anything that says they estimate that 90% of the contaminates are from agriculture.

Response: DEQ appreciates the comment and opportunity to provide clarification about the draft TMDL load allocations. Changes were made to the proposed TMDL.

Section 9 of the draft TMDL summarizes the percent E. coli load allocations for point and non-point sources in each of the river reaches analyzed and reflects the amount of E. coli that can be present in surface waters while still meeting water quality criteria. As the commenter noted, the combined category of background and non-point sources of E. coli includes contributions from wildlife, leaching from failing septic systems, stormwater runoff from roads not managed by the Oregon Department of Transportation, and runoff (including stormwater and irrigation water) from agricultural and forest lands with annual or seasonal livestock populations. Together, these non-point and background sources are allocated 89 percent of the total maximum daily load for E. coli in most reaches analyzed, and from 42.9 to 88 percent in two reaches that also contain E. coli sourced from wastewater treatment plants. Please note that the draft TMDL documents have not assigned a specific allocation to cattle, as this has not been quantified. DEQ has also revised language in the draft TMDL documents to clarify the contributing sources of E. coli included in the non-point source category, and to highlight the importance of additional assessments to verify primary E. coli sources during TMDL implementation.

Changes were made based on this comment.

TW#4: Suggested Change ID #91

Description: TMDL - question about criteria used to identify harm

Comment: What are the criteria used to identify the harm? Was peer reviewed scientific literature used to identify the harm? Were comparable ecosystems utilized to compare and contrast the harm? (Systems that exist elsewhere in the western US with similar climate, ecology, geology, and rainfall?) Does the harm exist in equal amounts throughout the Powder River Basin or are there particular places where the harm is objectively more dangerous?

Response: The TMDL is structured to attain water quality standards to protect people and water contact recreation, but it will benefit all users of water. Irrigation and livestock watering are recognized as important beneficial uses in the Powder River Basin and will be protected through the implementation of this TMDL. Waters with high levels of fecal contamination pose a disease risk to people, livestock, and wildlife. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River Basin. The TMDL program is a required element of the federal Clean Water Act. The Federal Government requires states to set water quality standards for pollutants and designate beneficial uses for waters of the state to ensure that waters can be safely used by humans, livestock, wildlife, and will support all other designated uses. When water quality impairments are identified, the federal

Clean Water Act requires that states develop and implement TMDLs to restore water quality to meet established standards. Each state's TMDL, water quality standards, and beneficial uses must be reviewed and approved or disapproved by EPA. EPA's oversight provides a national perspective, national standardization, and a level of scientific peer review to ensure consistency across the West and the nation.

145. Comments from: Thomas Price

ThP#1: Suggested Change ID #2

Description: Process - Extension request for this TMDL to adequately and inclusively develop the TMDL

Comment: This TMDL rulemaking should be extended to allow five more years of data collection. The comment period for this TMDL should be extended until the end of the year. The public hearing should be held in person. Many people showed up to the in-person public meeting demonstrating interest in this TMDL and the time allotted for this process is rushed and unacceptable. There needs to be more time for a more detailed and objective study of the proposed TMDL.

Response: DEQ appreciates the interest and the request for an extension of this project expressed by the commenters. In response to multiple requests received during public notice for the draft TMDL, DEQ extended the initial public comment period and held a public hearing in-person in Baker City to provide increased accessibility to DEQ for the community. DEQ also recognized the request for additional time by the local community to review and understand the materials and so provided a second public comment period and a community forum in Baker City to answer questions about the draft TMDL.

The water quality status in the Powder River Basin has been listed as impaired for bacteria for many years, making this a priority TMDL for development and issuance. In response to the Clean Water Act 303(d) listings, DEQ began working on the Powder River Basin bacteria TMDL, including data collection for bacteria and other water quality parameters in 2007. Additional basin bacteria listings were added in 2010, and bacteria data was again collected in 2010 through 2013. In 2018, the basin continued to be listed for E. coli using newer data that confirmed the impairments. DEQ and EPA conducted TMDL analyses intermittently between 2008 and 2021, and DEQ periodically discussed the results of these analyses with local landowners through Local Advisory Committee meetings organized through Oregon Department of Agriculture's Agricultural Water Quality Management programs. DEQ consulted with Designated Management Agencies and other persons responsible for TMDL implementation while developing the draft TMDL that was presented to a Rule Advisory Committee in 2022. Establishing this proposed TMDL is an effort to reduce bacteria in the waterways to achieve the water quality standard for all beneficial uses. DEQ is also committed to continued discussions with DMAs, responsible persons, and other interested parties during implementation. Water quality monitoring and assessment will be an ongoing process. Involvement from local groups and interested community members will be critical for successful TMDL implementation and improved water quality.

ThP#2: Suggested Change ID #18

Description: Data - Data inadequate to support TMDL conclusions

Comment: More data and research are necessary to determine bacteria levels including DNA and flow data collection. Not enough or accurate data was collected or used in the development of this TMDL.

Response: DEQ agrees that additional data collection, including bacteria source tracking methods using DNA testing, are useful for TMDL implementation. DEQ used an EPA-approved approach for establishing TMDLs that has been used in other Oregon basins. DEQ's E. coli TMDL monitoring project included collection of over 600 bacteria samples from more than 20 sample sites across the basin. DEQ agrees with the commenter that flow data is also vital for establishing a TMDL. DEQ accessed daily stream flow values measured at gages maintained by the U.S. Bureau of Reclamation, Oregon Water Resources Department, and Idaho Power Company. At least 10 years of daily flow data from each gage was used to calculate E. coli load capacities, and E. coli samples that were collected within each of the reaches were paired with flow data to determine a daily load.

146. Comments from: Tommy Price

TmP#1: Suggested Change ID #90

Description: Process - relying on one parameter and political agenda

Comment: I live in Baker City, Baker County, Oregon. The local populace will be adversely affected by DEQ's assessment of E. coli and coliform bacteria in the Powder River Basin. DEQ has chosen one condition to quantify water quality and has wrongly faulted cattlemen. It is likely that this decision is not based upon science, but instead a political agenda. Such impactful decisions must be studied by multiple entities so that legitimate policy can be taken. Such policy has a major impact upon agriculture and the economy of the region.

Response: Thank you for your comments. The TMDL is structured to attain water quality standards to protect water contact recreation, but it will benefit all users of water. The TMDL, WQMP, and associated documents do not single out livestock as the only source of the high E. coli loads. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River basin. Waters with high levels of fecal contamination pose a disease risk to people as well as livestock and wildlife. Irrigation and livestock watering are recognized as important beneficial uses in the Powder River Basin and will be protected as well through the implementation of this TMDL. Multiple agencies and organizations will be working locally to implement programs and provide monitoring to help coordinate programs within the Powder River Basin. Some of those agencies include: Oregon Department of Agriculture, Oregon State University, Malheur Soil and Water Conservation District, USDA-National Resource Conservation Service, Powder Basin Watershed Council, Oregon Department of Fish and Wildlife and others as listed in the WQMP document. Monitoring results and the implementation of actions will be reviewed every five years as part of adaptive management to make sure actions are working and to address any barriers to implementing on the ground projects.

147. Comments from: Verna Kay Markgraf

VKM#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

VKM#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

VKM#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft

TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

VKM#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local,

state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

VKM#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

VKM#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of

the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

148. Comments from: William Fisher

WF#1: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply, irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

149. Comments from: WaterWatch of Oregon

WO#1: Suggested Change ID #1

Description: Analyses - Baker City Waste Water Treatment Facility

Comment: The Baker City wastewater treatment plant is currently discharging to the Powder River but is not included in the draft TMDL documents. The TMDL analyses need to include this point source of bacteria and the TMDL documents updated accordingly.

Response: DEQ was notified that the Baker City Waste Water Treatment Facility will temporarily resume discharge of treated wastewater to the Powder River under a National Discharge Elimination System (NPDES) permit. DEQ included this point source in analyses and has provided an updated bacteria load allocations in the affected stream reach. DEQ has also

assigned a bacteria wasteload allocation to the wastewater treatment facility. The TMDL documents have been updated to reflect these changes.

Changes were made based on this comment.

WO#2: Suggested Change ID #22

Description: TMDL documents - Add livestock source to TMDL table

Comment: While narrative in the TMDL and the water quality management plan describe direct livestock access to waterways as a significant contributor to excess bacteria in the Basin's waterways, the table of load allocations on page 18 of the TMDL (Table 9.1) does not appear to include that contributor in the column headings for sources. Please consider if the table should be revised accordingly.

Response: DEQ appreciates the opportunity to clarify the E.coli allocations as presented in Table 9.1a of the TMDL. Table 9.1a is organized as a summary of point and non-point source allocations in each of the assessed reaches. The summary table shows all nonpoint and background sources grouped together to receive a single allocation that varies by location. In contrast, the WQMP provides additional detail about E. coli sources within the nonpoint and background category. Direct access by livestock and wildlife to streams and reservoirs is included in Table 2.0a of the WQMP. This information is most appropriate in the WQMP because it is specific to plan development and implementation by responsible persons, with further management strategies specific to livestock sources of E. coli described throughout section 5.1 of the WQMP. Therefore, DEQ did not make revisions to Table 9.1 in the TMDL in response to this comment.

WO#3: Suggested Change ID #74

Description: Process - Support for TMDL

Comment: WaterWatch of Oregon supports adoption of a TMDL for bacteria in the Powder Basin. DEQ has determined that rivers and streams in the basin fail to meet water quality standards for bacteria. Thus, DEQ should establish loading limits for bacteria that will ensure compliance with water quality standards and should adopt a plan to bring actual contributions within the loading limits.

Response: Thank you for your support of DEQ's continued efforts to issue TMDLs and implement the Clean Water Act.

150. Comments from: WaterWatch of Oregon

WO.1#1: Suggested Change ID #43

Description: Implementation - Add specific management strategies - implementation plan is too general

Comment: The WQMP is not sufficiently specific as to management strategies that must be included in implementation plans. Management strategies are expressed only as general suggestions for things that could be included. The WQMP should instead require specific strategies to specific degrees in specific places within specific timeframes instead of just hoping that the implementation plans will do that. For example, the WQMP should require irrigation districts to transition customers from flood irrigation to more efficient irrigation in a specific timeframe (through contracts with customers or otherwise) and should require the ODA implementation plan to include specific requirements for riparian buffers and animal exclusions. The WQMP should also require BLM and BOR implementation plans to include requirements for specific management strategies to be included in their leases and water supply contracts. On Page 17: The suggested management strategies and timelines are too general and are merely suggestions. DEQ should use whatever regulatory authority it has to require that these things be in the implementation plans in specific places to specific degrees in specific locations and in specific timeframes.

Response: DEQ appreciates the thoughtful suggestions regarding TMDL implementation. The Oregon Administrative Rules, Chapter 340-042-0040 provides a complete list of required elements for TMDLs and WQMPs that comply with the Clean Water Act and provides the framework of management strategies to attain and maintain water quality standards. The framework is designed to work in conjunction with detailed plans and analyses provided in sector-specific or source-specific implementation plans. Although management strategies listed in the WQMP may seem general, these are intended to provide guidance to DMAs while allowing specifics regarding strategies, locations, timelines and monitoring activities to be provided in implementation plans. DEQ requires annual reporting on implementation plans and 5-year review/ revisions of plans to ensure progress toward attainment of water quality standards for E. coli in the basin.

WO.1#2: Suggested Change ID #44

Description: Beneficial Uses - Support for protection of all uses

Comment: Commenters are in support of the TMDL and protection of beneficial uses. Considerations for support of the proposed rule include, among others: emphasis on recreation, climate change and increased pressure on water resources, protection of downstream human activities, benefits of healthy ecosystems for agriculture and native plants and wildlife, scientifically based TMDLs as critical tool, returning the water to previous or historical health, tourism, and critical potable water resources.

Response: Thank you for your comments in support of the TMDL. Beneficial Uses are defined as public domestic water supply, private domestic water supply, industrial water supply,

irrigation, livestock watering, fish and aquatic life, wildlife and hunting, fishing, boating, water contact recreation, and aesthetic quality, as provided in OAR 340-041-0260 in the Powder/Burnt Basin. These beneficial uses are considered in the development and analyses for E. coli in the draft Power River Basin TMDL.

WO.1#3: Suggested Change ID #56

Description: Analyses - Water storage and withdrawals should be considered during source analyses

Comment: The TMDL and WQMP should better discuss whether water withdrawals and/or water storage contribute through flow reduction, in any parts of the waterways at any times, to the failure of waterways to meet water quality standards. If so, water withdrawals and storage should be listed as additional nonpoint sources. According to the TMDL documents, bacteria water quality is flow dependent. (TMDL, p. 13.) Thus, water withdrawals and water storage have the potential to be nonpoint sources of pollution through flow reduction, in addition to contributing through reservoir refill and return flows as described in the TMDL documents. If flow reductions are not a contributing factor because they do not coincide with periods when bacteria levels exceed water quality standards, that should be better explained in the documents to show that the impact of flow reductions was adequately considered. Also on this point, the TSD (p. 10) says that irrigation diversions were not factored into calculations for the TMDL and WQMP. The TMDL documents should better explain that, including the calculations referenced and why diversions were not factored into them.

Response: DEQ appreciates the opportunity to discuss how water withdrawals, water storage, and flow reductions factor into the development and implementation of the Powder River Basin Bacteria TMDL. For development of the TMDL, DEQ considered point sources and nonpoint sources of E. coli according to OAR 340-045-001(17) and for point sources any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are, or may be discharged. Also considered in TMDL development is OAR 340-41-0002 (42) for nonpoint sources regarding diffuse or unconfined sources of pollution where wastes can either enter, or be conveyed by the movement of water, into waters of the state.

Based on these definitions, DEQ considered ultimate sources of E. coli to surface waters as fecal material originating from humans and other warm-blooded animals. The allocation used for apportioning nonpoint sources of E. coli necessarily grouped sources from agricultural lands, including agricultural water and irrigation return water, non-agricultural lands, and other background sources together. Thus, irrigation diversions are embedded within the nonpoint source load allocation. Management of how these sources enter surface waters is described in the Water Quality Management Plan, including discussions of irrigation practices that influence the amount and timing of flows in the basin. DEQ recommends that Designated Management Agencies identified in the Water Quality Management Plan address the questions surrounding flow, water withdrawal, and storage in their implementation plans, if applicable to their responsibilities.

WO.1#4: Suggested Change ID #57

Description: Implementation - Oregon Water Resources Department should be included as a Designated Management Agency

Comment: The Oregon Water Resources Department should be a designated management agency. It has legal authority over water storage and diversions that are contributing to the problem through flow reductions and/or through irrigation return flows and reservoir refill over contaminated ground. For example, OWRD has significant authority to drive irrigation efficiency, and thereby reduce contaminated runoff, through its review and approval of water management and conservation plans for irrigation districts. See, e.g., OAR 690-410-0060 and OAR 690 Division 086. In addition, OWRD could adopt “new regulations [to] require the use of best practical technologies or conservation practices,” as water users are advised in permits issued by OWRD.

Response: DEQ agrees with the commenter that OWRD has an important role in supporting water quality improvements in the Powder River Basin through implementation of its existing programs. OWRD programs include, among others, the Water Project Grants and Loans and Irrigation Modernization Funding programs that provides funding to upgrade irrigation water use efficiency while benefiting water quality by reducing agricultural runoff (and return flows) to surface waters. The USDA Natural Resources Conservation Service also offers financial and technical assistance to producers for irrigation improvements with similar goals and environmental benefits. DEQ and OWRD are working together to identify and address issues regarding the relationships between Oregon’s water quantity and quality through the Integrated Water Resources Program and Oregon Administrative Rules Chapter 690, Division 33 water rights review process. However, DEQ concluded that OWRD does not have jurisdiction over an E. coli source area or Nonpoint Source Sector within the Powder River Basin. The timing and delivery of irrigation water is managed by irrigation districts and use of diverted water is under the control of the water rights holders, including agricultural producers. Additionally, it has not been demonstrated or determined that OWRD’s programs or rules are insufficient and thereby result in increased E. coli concentrations in surface waters. For these reasons, DEQ is not identifying OWRD as a designated management agency or responsible person for implementation of the Powder River Basin bacteria TMDL.

WO.1#5: Suggested Change ID #58

Description: Implementation - Require plans from private landowners

Comment: To the extent it has legal authority, ODEQ should require large private landowners to prepare implementation plans with specific measures to protect and restore riparian buffers and improve irrigation efficiency (among other possible measures). Landowners are ultimately the only parties in a position to change the amount of bacteria reaching the rivers and streams. The draft WQMP suggests changes will happen on private land by requiring other regulators with limited authority over private landowners to prepare implementation plans that will someday lead to changes in the practices of private landowners. However, that is an inefficient approach that will take decades to accomplish if it ever works at all.

Response: DEQ acknowledges that the Schedule for Implementation Plan Submittal section of the draft Powder River Basin Water Quality Management Plan lists of Designated Management

Agencies and responsible persons identified “is not an exhaustive list of every individual that bears responsibility for improving water quality in the Powder River Basin” and that “All people that live, work and recreate in the watershed can take steps to reduce pollution and protect or restore water quality to attain standards and designated beneficial uses.” However, OAR 340-042 relies more on the legal authorities of federal, state, and local agencies than sectors of pollutant-contributing sources. In the proposed TMDL and WQMP, DEQ assigned responsibility for developing implementation plans to responsible persons as well as Designated Management Agencies. Although none of these entities are individual private landowners, DEQ may revise the WQMP or issue individual orders to “identify individual sources (landowners/operators) as persons responsible for developing and implementing TMDL implementation plans to address the load allocations relevant for the sector” if an approvable implementation plan is not submitted for the sector.

WO.1#6: Suggested Change ID #59

Description: Implementation - Riparian restoration

Comment: Please also consider the following more specific comments regarding the WQMP. Page 2: Table of management strategies should include (or include more specifically) riparian restoration and enhancement. (E.g., p. 4, second bullet.)

Response: DEQ agrees that information presented in the table of management strategies in the draft proposed WQMP indicates that riparian area restoration or enhancement was omitted. DEQ revised the table to include this.

Changes were made based on this comment.

WO.1#7: Suggested Change ID #60

Description: Implementation - Designated Management Agencies

Comment: In the WQMP Page 4: Table 2.0c doesn't appear to include DMAs for Phillips Reservoir to Baker City even though it shows excess load occurring there.

Response: Table 3 in the WQMP (formerly Table 2.0c) is a list of priority locations for implementation of E. coli reduction strategies and identifies the DMAs responsible for implementation. Baker City and Baker County are not included in Table 3 priority locations. The listing for the Powder River reach that is above Baker City is a legacy fecal coliform listing that will be addressed in the 2024 Integrated Report. Long-term ambient monitoring data suggest that the reach of the Powder River from Baker City to Phillips Reservoir does experience E. coli counts that exceed the standard (Site 11490-ORDEQ, Load Duration Curve in Figure 18 of the TSD) and will need restoration actions. Although not in the WQMP Table 3 high priority list, Baker City and Baker County are DMAs (WQMP - Table 4) with an obligation to develop implementation plans to meet the requirements of the Powder River Basin TMDL

Changes were made based on this comment.

WO.1#8: Suggested Change ID #61

Description: Implementation - ODA authority & responsibilities

Comment: The WQMP (Page 9) should include a better description of ODA authority – what it can require v. just encourage or promote. The WQMP (Page 10) doesn't explain how ODA will ensure that the suggested management strategies in fact take place. WaterWatch appreciates the statement (page 19) that the ODA WQMA rules and plans have not worked, but the WQMP needs to direct ODA to do something more specific than just to come up with another plan that may be equally ineffective.

Response: As noted in Section 5.3 of the WQMP, implementation plans prepared by all Designated Management Agencies and responsible persons, must contain all the required elements to be approved by DEQ. ODA is a Designated Management Agency. DEQ anticipates that the ODA implementation plan will adequately explain authorities and that annual reporting on effectiveness of implementation will offer further opportunities for refinement of the implementation plan, as necessary. DEQ did not conclude that the ODA's existing Powder and Burnt Agricultural Water Quality Management Area Rules and Plans have been ineffectual. Rather, DEQ concluded that the Area Rules and Plans have not been effectively implemented specifically to attain E. coli bacteria water quality standards in the Powder Basin. Through the proposed TMDL and WQMP rules, DEQ is requiring ODA to develop a basin specific bacteria TMDL implementation plan which will build on ODA's existing Water Quality Program to achieve the Agricultural Sector E. coli load allocation by focusing on specific locations and actions for bacteria reduction strategies and best management practices.

WO.1#9: Suggested Change ID #62

Description: Implementation - Public should have opportunity to comment on implementation plans

Comment: WQMP Page 23: The WQMP does not adequately ensure that interested parties will receive notice and an opportunity to comment on draft implementation plans before approval by DEQ. Public notice should be required to DEQ's general notice list for TMDL information and, at a minimum, to all parties who commented in this TMDL process.

Response: OAR 340-042-0040(4)(l)(L) requires a "plan for public involvement in implementing management strategies." This rule section does not equate to requiring an opportunity for public comment on implementation plans prior to DEQ approval. In contrast, OAR 340-042-0050(2) specifically requires DEQ to provide notice and an opportunity for public comment on a proposed TMDL (or revised loading capacity or allocations). Because Designated Management Agencies have legal authority over sector-specific sources and implementation plans, it is more appropriate for those entities' implementation plans to include a plan for involving the public in implementation of management strategies. DEQ will consider the degree of public involvement during the review of implementation plans and, thus, did not revise the WQMP to address this comment.

WO.1#10: Suggested Change ID #77

Description: Beneficial Uses - Support for protection - Federal Law

Comment: WaterWatch strongly opposes the suggestion by some area residents that waterways in the basin should be protected only for agricultural uses. The waterways of the basin belong to everyone and should be protected for all uses, including fish, wildlife and recreation, which we believe is required by federal law in any event.

Response: Thank you for your comments. Removing an existing beneficial use is outside the scope of the proposed Powder River TMDL rulemaking. Any new or revised beneficial uses and subsequent revisions to the applicable water quality standards would need to be first approved by the Environmental Quality Commission and then submitted to the Environmental Protection Agency for review and approval or disapproval in accordance with Section 303(c) of the Clean Water Act. Although the TMDL addresses water quality standards designed to protect water contact recreation, irrigation, and livestock watering are recognized as important beneficial uses in the Powder River Basin and will also be protected through the implementation of this TMDL.

Waters with high levels of fecal contamination pose a disease risk to people as well as livestock and wildlife. All people that live, work, and recreate in the watershed have a role to play to protect and restore water quality within the Powder River basin to attain standards and protect all designated beneficial uses. To ensure that the basin is moving in the right direction and addressing the primary sources of bacteria, monitoring results and the implementation of actions will be reviewed every five years as part of adaptive management to track progress, highlight successes, and to address any barriers to implementing successful on the ground water quality projects.

WO.1#11: Suggested Change ID #78

Description: TMDL - support for proposed rule and potential causes of E. coli

Comment: The TMDL documents adequately demonstrate that the primary cause of excess bacteria is manure from farm animals deposited either directly to the waterways or into areas where it later enters the waterways through irrigation return flow or reservoir refill.

Response: DEQ acknowledges this statement of support for the analysis.

151. Comments from: Wes Price

WP#1: Suggested Change ID #8

Description: Data - flow at time of bacteria sampling

Comment: It is important to understand stream flow at the time of sampling when assessing water quality. Protocols for measuring stream flow are not listed and flow data is not shown in the TMDL documents. This information should be provided.

Response: DEQ agrees that understanding stream flow is important to TMDL development. Flow measurements are required to calculate pollutant loading capacity and daily loads. To develop the draft Powder Basin Bacteria TMDL, DEQ accessed average daily flow data from flow gages operated and maintained by Idaho Power Company, Oregon Water Resources Department, and the U.S. Bureau of Reclamation, as described in Section 4 of the Technical Support Document (TSD). DEQ used at least 10 years of average daily flow data for each of 10 river reaches to develop flow duration curves and load capacity calculations. Using at least 10 years of flow data allowed calculations to include a full range of current flows in each of the river reaches assessed. DEQ did not include all average daily flow data in the TMDL, TSD, or WQMP documents due to the large size of the dataset. The data is available from DEQ upon request. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (Technical Support Document, section 4). Flow duration curves for reaches of the Powder River, Burnt River, and Pine Creek can be found in the draft Technical Support Document, Section 2. DEQ made edits to this section to include hydrographs and mean monthly flow values for these three reaches to help clarify the extent of flow data included in TMDL analyses.

DEQ also recognizes the importance in providing the sampling methods and data analyzed for transparency. The Quality Assurance Project Plans for the proposed TMDL sample collections are available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. The plans contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing.

WP#2: Suggested Change ID #9

Description: Data - Sampling protocols

Comment: No protocols for sampling were provided in the TMDL documents. Samples should be collected using an approved Quality Assurance Project Plan (QAPP), trained personnel, be consistent, and relevant to plan development. Was this level of methodology considered and included in TMDL development? Sample site selection is very important because data might reflect a variety of different bacteria sources. Flow also needs to be recorded at the time of sampling and it is not clear from the TMDL documents that this was done.

Response: DEQ recognizes the importance in providing the sampling methods and data analyzed for transparency. DEQ has made the Quality Assurance Project Plans (QAPPs) for the proposed TMDL sample collections available to the public on the Powder River Basin TMDL website: <https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>. DEQ also added a reference to the QAPPs in Section 4.3 of the Technical Support Document. The QAPPs contain details about DEQ's methods and sample locations used to collect data for the draft E. coli TMDL, and are intended to ensure consistent sample collections, handling, and processing. DEQ follows data collection and quality assurance protocols that meet standards of the National Environmental Laboratory Accreditation Conference.

DEQ also understands that flows, E. coli sources, and environmental conditions vary between sites and collection days, which requires that multiple samples be collected over time to assess water quality at each site. DEQ's collection sites are commonly limited to locations with public

access. DEQ agrees that multiple sources may be influencing E. coli levels at a sample site, and to determine whether the primary contributing source is human, livestock, or wildlife. Data provided in the TMDL provides a baseline for understanding where high levels of E. coli are found in rivers, and relies on ongoing assessments to refine source assessment and direct monitoring locations and implementation planning.

The Technical Support Document, Section 4, has information about collection of flow data and how it was used in the analyses. Average daily flow measurements were accessed from flow gages operated and maintained by Idaho Power, Oregon Water Resources Department, and the U.S. Bureau of Reclamation. All flow gages used in TMDL analyses are listed in Section 4 of the Technical Support Document. DEQ used at least 10 years of average daily flow data to understand the range of flows experienced in each of the 10 river reaches assessed. E. coli samples were paired with average daily stream flow data for the date of collection to calculate loads. Pollutant daily loads calculated from sampled E. coli and average daily flows are represented on the load duration curve figures for each reach analyzed (TSD, section 4).

Changes were made based on this comment.

WP#3: Suggested Change ID #10

Description: Analyses - DNA testing to confirm bacteria sources

Comment: DEQ cannot justify the majority of bacterial contamination stems from agriculture without DNA testing. DEQ has not determined which kind of E. coli comes from insects or animals. DEQ should employ appropriate technology (i.e., DNA source tracking) to create an effective, equitable TMDL for the Powder River Basin. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of E. coli. The US EPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.

Response: DEQ acknowledges the inherent uncertainty that exists when identifying contributions from source categories identified in section 7.1 of the proposed TMDL and section 5.2 of the Technical Support Document (TSD). DEQ has modified the sections to reflect the identification of sources that are grouped under the nonpoint source load allocation in the proposed TMDL. Although E. coli may originate from several sources, DEQ used measured concentrations to provide an additional margin of safety measure in the calculation of draft TMDL allocations (sections 9.3 of the TMDL and section 6.4 of the TSD). DEQ has added references suggested by the comment letters to support this approach.

DEQ acknowledges that the use of bacterial and DNA source tracking (BST) can be useful for identifying potential sources of fecal contamination to surface waters in specific watersheds. However, DEQ relies on the position of the EPA (2011) that while source tracking can be useful in identifying sources, it should not be used for development of TMDL load allocations due to uncertainty in source apportionment and the inability to detect all fecal sources of bacteria. Moreover, the lack of BST information does not influence the calculation of percent reductions needed to meet loading capacities or the allocation of sources between point and nonpoint source categories.

DEQ has added language in Section 5.2 of the Technical Support Document acknowledging the lack of BST information and clarifies the role BST information could play in TMDL implementation. DEQ has incorporated some of the suggested references referring to the use of BST from the commenter into the proposed TMDL and TSD documents. DEQ appreciates how these comments and suggestions improve the proposed TMDL and TSD documents.

References: IDEQ. 2020. South Fork Clearwater River Subbasin Escherichia coli Total Maximum Daily Loads and Review. Idaho Department of Environmental Quality. Lewiston, ID. <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/14918>. USEPA. 2011. Using microbial source tracking to support TMDL development and implementation. US Environmental Protection Agency, Region 10, Watersheds Unit. Seattle, WA. Prepared by Tetra Tech, Inc. and Herrera Environmental Consultants. https://www.epa.gov/sites/default/files/2015-07/documents/mst_for_tmdls_guide_04_22_11.pdf.

Changes were made based on this comment.

WP#4: Suggested Change ID #11

Description: TMDL implementation - Financial impact on local agricultural producers

Comment: TMDL implementation will have a significant financial impact on local landowners and agricultural producers. No financial assistance has been offered to fully cover these costs. Loans and cost share on grants is a large expense. This cost burden is too large for landowners to bear. The TMDL appears to be regulations on top of already existing regulations and is expensive, obtrusive, and disrespectful. The TMDL recommended management strategies are questionably scientific.

Response: DEQ appreciates the commenters concern and acknowledges that there are costs associated with TMDL implementation. DEQ recognizes that some implementation projects may not be possible until sufficient funding is secured. Implementation costs can vary widely depending on E. coli sources, location, and other unique circumstances. DMAs and other persons responsible for TMDL implementation plan development have the opportunity to clarify further assessments that may be needed, locations where implementation is needed or already complete, costs associated with projects, and reasonable timelines for completion. Where significant costs are likely to be incurred for implementation, DEQ also understands that funding must be available before a project can be completed. DEQ is committed to help secure financial assistance when possible, starting with providing the list at Table 5.3.6 in the WQMP for local, state, and federal funds available for implementation of pollutant management strategies and control practices. DEQ has also noted that many landowners in the Powder River Basin provide excellent examples of land stewardship and are already practicing best management strategies to protect water quality.

The strategies and practices for bacteria reduction listed in the WQMP (Tables 2.0 a and b) are adapted from other entities with expertise in conservation and restoration, such as the U.S. Department of Agriculture Natural Resources Conservation Service. These strategies for non-point sources of E. coli are intended to align with measures and recommendations in ODA's Water Quality Management Area Plans in Eastern Oregon and have been included in other TMDLs in Oregon and the U.S. DEQ understands that projects and practices selected for implementation will vary from one location to the next, based on what is appropriate and

feasible, and values expertise from local technical advisors, SWCDs, and others in choosing appropriate implementation measures in the Powder River Basin.

WP#5: Suggested Change ID #14

Description: Beneficial Uses - Freshwater contact recreation is an inappropriate designation

Comment: Powder River Basin is an agricultural waterway. Standards should not be adopted as rules based solely on recreation, and should reflect all of the different and priority uses in the watershed. The conditions in the basin demonstrate that the river was used primarily for agriculture, not recreation. Burnt River subbasin should not be held to bacteria standard for water contact recreation because impaired reaches do not have public access.

Response: Removing an existing beneficial use for the Powder River Basin or subbasins is outside the scope of the proposed TMDL rulemaking. The Powder River Basin TMDL for E. coli is proposed to attain the existing water quality standards for bacteria to protect all of the existing, designated beneficial uses of the Powder River Basin. As provided in OAR 340-041-0260, beneficial uses include: Public Domestic Water Supply; Private Domestic Water Supply; Industrial Water Supply; Irrigation; Livestock Watering; Fish and Aquatic Life; Wildlife and Hunting; Fishing; Boating; Water Contact Recreation; Aesthetic Quality. The uses are not dependent on public access availability. The TMDL is designed to be protective of all the uses, according to rule, and would still require E. coli reduction even if the most sensitive beneficial uses were removed.

WP#6: Suggested Change ID #21

Description: Process - TMDL five year extension for more data collection

Comment: Commenters suggested that Baker County lead a collaborative effort with interested parties to collect data and DNA analysis over a five-year period that complies with DEQ and EPA regulations for all standards, not just bacteria.

Response: DEQ appreciates requests to partner across various community interests in the basin for monitoring and assessment of bacteria and other pollutant impairments. Reaches of the Powder Basin have been categorized as impaired for E. coli bacteria since 1998, with additional listings added in 2010 and 2018. E. coli listings were reassessed in 2018, with newer data confirming these impairments. Currently, there is adequate data and information to issue a proposed TMDL to begin implementation to reduce impairments. DEQ looks forward to collaborative efforts for implementation. The process to develop the TMDL over time has included local and regional representatives, as well as federal, state, and local governments.

152. Comments from: Wade Simpson

WS#1: Suggested Change ID #25

Description: Analyses - Elk herds and feeding stations need to be considered in TMDL analyses

Comment: There are sources of fecal bacteria other than cattle that DEQ should have considered when developing the TMDL. Herds of elk move through the basin and graze on private landowner's fields. There are also multiple feeding stations that attract large herds of elk throughout the winter, which contribute excessive amounts of manure to the Powder River watershed. This causes fecal pollution of surface waters that impacts downstream users and may mistakenly be attributed to cattle sources. DEQ incorrectly concludes that all E. coli bacteria comes from cattle.

Response: DEQ appreciates the opportunity to clarify the source assessment provided in the TMDL. Section 5.2 of the Technical Support Document provides details about the potential sources of E. coli that were considered, analyzed, and included in the TMDL allocations or allowable E. coli loads from point and non-point sources. Point sources of bacteria, including wastewater treatment plants and state stormwater runoff from roadways, were included in TMDL analyses and received bacteria wasteload allocations. Nonpoint sources, including wildlife (elk, other ungulates, beaver, and waterfowl), livestock (including CAFOs), and residential septic systems, also received an E. coli load allocation. Cattle were not placed in a separate category or given a separate allocation. Together, the non-point source category received the largest allowable E. coli load allocation because point sources are relatively few and affect a smaller number of stream reaches.

DEQ's TMDL evaluations also included E. coli and flow data, seasonal considerations, land use/land cover, permit monitoring data, and wildlife presence and behavior patterns. From this evaluation, DEQ concluded the highest concentrations of bacteria generally occurred during irrigation season (May-October) and at locations downstream of areas with irrigated pastures and other agricultural land uses.

DEQ is also aware that there are large herds of elk in the Powder River Basin and considered bacteria inputs from the elk feeding stations. DEQ's assessment included consideration of data collected upstream and downstream of elk feeding stations, results of which showed that the wildlife area elk feeding stations were not likely significant sources of bacteria to surface waterbodies during the winter season, but may be contributing to criteria exceedances during the spring and summer period (May through October). To ensure that the elk feeding stations do not become an increased source of bacteria, Oregon Department of Fish and Wildlife is named as a Designated Management Agency in the TMDL Water Quality Management Plan and is required to develop and implement an approvable TMDL implementation plan that builds on their existing Elkhorn Wildlife Area Management Plan. Section 7.1 of the TMDL and Section 5.2.4 of the TSD has been updated to describe the potential significance of elk and other wildlife in the basin, with specific discussion on the Elkhorn Wildlife Area feeding station.

Changes were made based on this comment.

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