



# COLORADO

Water Quality  
Control Commission

Department of Public Health & Environment

## NOTICE OF PUBLIC RULEMAKING HEARING BEFORE THE COLORADO WATER QUALITY CONTROL COMMISSION

### SUBJECT:

For consideration of the adoption of revisions to the following regulations:

- The Basic Standards and Methodologies for Surface Water, Regulation #31 (5 CCR 1002-31);
- The Basic Standards for Ground Water, Regulation #41 (5 CCR 1002-41); and
- Site-Specific Water Quality Classifications and Standards for Ground Water, Regulation #42 (5 CCR 1002-42).

Revisions proposed by the Water Quality Control Division, along with a proposed Statement of Basis, Specific Statutory Authority and Purpose, are attached to this notice.

In these attachments, proposed new language is shown with double-underlining and proposed deletions are shown with ~~strikeouts~~. Any alternative proposals related to the subject of this hearing will also be considered.

### SCHEDULE OF IMPORTANT DATES

Proponent's prehearing statement due	01/22/2020 5:00 pm	Additional information below.
Party Status requests due	02/05/2020 5:00 pm	Additional information below.
Responsive prehearing statements due	02/26/2020 5:00 pm	Additional information below.
Rebuttal statements due	03/25/2020 5:00 pm	Additional information below.
Last date for submittal of motions	03/27/2020 by noon	Additional information below.
Notify commission office if participating in prehearing conference by phone	03/27/2020 by noon	Send email to <a href="mailto:cdphe.wgcc@state.co.us">cdphe.wgcc@state.co.us</a> with participant(s) name(s)
<b>Prehearing Conference</b> (mandatory for parties)	03/30/2020 9:00 am	Carson Conference Room Department of Public Health and Environment 4300 Cherry Creek Drive South Denver, CO 80246 Google Hangout: +1 484-784-9327 PIN: 619 220#
<b>Rulemaking Hearing</b>	04/13/2020 9:00 am	Florence Sabin Conference Room Department of Public Health and Environment

		4300 Cherry Creek Drive South Denver, CO 80246
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HEARING SUBMITTALS:

For this hearing, the commission will receive all submittals electronically. Submittals must be provided as PDF documents, except for raw data exhibits which may be provided as Excel workbooks. Submittals may be emailed to [cdphe.wgcc@state.co.us](mailto:cdphe.wgcc@state.co.us), provided via an FTP site, CD or flash drive, or otherwise conveyed to the commission office to be received no later than the specified date.

PARTY STATUS:

Party status requests must be in writing and must provide:

- the organization's name,
- one contact person,
- a mailing address,
- a phone number, and
- email addresses of all individuals associated with the party who wish to be notified when new submittals are available on the commission's website for review.

In accordance with section 25-8-104(2)(d), C.R.S., any person who believes that the actions proposed in this notice have the potential to cause material injury to his or her water rights is requested to so indicate, along with an explanation of the alleged harm, in their party status request.

PREHEARING AND REBUTTAL STATEMENTS:

Each party must submit a prehearing statement: parties that have proposed revisions attached as exhibits to the notice must submit a proponent's prehearing statement. All other parties must submit a responsive prehearing statement. Proponents may also submit responsive prehearing statements when there are multiple proposals attached to the notice.

Each prehearing and rebuttal statement must be provided as a separate PDF document from any accompanying written testimony or exhibits.

Following the rebuttal statement due date, no other written materials will be accepted from parties except for good cause shown.

Oral testimony at the hearing should primarily summarize written material previously submitted. The hearing will emphasize commission questioning of parties and other interested persons about their written prehearing submittals. Introduction of written material at the hearing by those with party status will not be permitted unless authorized by the commission.

PREHEARING CONFERENCE:

**Attendance at the prehearing conference is mandatory for all persons requesting party status.** Parties needing to participate by telephone are encouraged to notify the commission

office prior to the prehearing conference. Remote participants can call 1-484-784-9327 and enter the PIN 619 220# to access the Google Hangout.

Following the cut-off date for motions, no motions will be accepted, except for good cause shown.

PUBLIC PARTICIPATION ENCOURAGED:

The commission encourages input from non-parties, either orally at the hearing or in writing prior to the hearing. Written submissions should be emailed to [cdphe.wqcc@state.co.us](mailto:cdphe.wqcc@state.co.us) by April 1, 2020.

SPECIFIC STATUTORY AUTHORITY:

The provisions of sections 25-8-202(1)(a), (b), and (2); 25-8-203; 25-8-204; and 25-8-402, C.R.S., provide the specific statutory authority for consideration of the regulatory amendments proposed by this notice. Should the commission adopt the regulatory language as proposed in this notice or alternative amendments, it will also adopt, in compliance with section 24-4-103(4) C.R.S., an appropriate Statement of Basis, Specific Statutory Authority, and Purpose.

Dated this 9<sup>th</sup> day of December 2019 at Denver, Colorado.

WATER QUALITY CONTROL COMMISSION

A handwritten signature in black ink, appearing to read 'Trisha Oeth', is written over a horizontal line.

Trisha Oeth, Administrator

**COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**

**Water Quality Control Commission**

**REGULATION NO. 31 - THE BASIC STANDARDS AND METHODOLOGIES FOR SURFACE WATER**

**5 CCR 1002-31**

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**31.5 DEFINITIONS**

See the Colorado Water Quality Control Act, section 25-8-101 et seq., C.R.S., and the codified water quality regulations additional definitions.

- (1) "ACT" means the Colorado Water Quality Control Act, section 25-8-101 et seq., C.R.S..
- (2) "ACUTE STANDARD" means the level not to be exceeded by the concentration for either a single sample or calculated as an average of all samples collected during a one-day period, except for temperature, which shall be based on the DM (see DM definition). As used in tables II and III, acute represents one-half of the LC-50 that protects 95 percent of the genera in a waterbody from lethal effects. The acute standard is implemented in combination with a selected duration and frequency of recurrence (section 31.9(1)). In determining attainment of the applicable acute standard, the representative nature of the data must be considered.
- (3) "ANTIDegradation Rule" means the rule established in section 31.8.
- (4) "BASIC STANDARDS" means those standards as established in section 31.11.
- (5) "BENEFICIAL USES" means those uses of state surface waters to be protected such as those identified in the classification system.
- (6) "BMP" (Best Management Practices) means a practice or a combination of practices that is determined by a governmental agency after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective, practicable (including technological, economic; and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with quality goals.
- (7) "CHRONIC STANDARD" means the level not to be exceeded by the concentration for either a single representative sample or calculated as an average of all samples collected during a thirty-day period, except for temperature, which shall be based on the WAT (see WAT definition). As used in tables II and III, chronic represents the level that protects 95 percent of the genera from chronic toxic effects. Chronic toxic effects include, but are not limited to, demonstrable abnormalities and adverse effects on survival, growth, or reproduction. The chronic standard is implemented in combination with a selected duration and frequency of recurrence (section 31.9(1)). In determining attainment of the applicable chronic standard, the representative nature of the data must be considered.
- (8) "COLD WATER BIOTA" means aquatic life, including trout, normally found in waters where the summer weekly average temperature does not frequently exceed 20 °C.
- (9) "COMMISSION" means the Colorado Water Quality Control Commission.

- (10) "COMPENSATORY WETLANDS" means wetlands developed for mitigation of adverse impacts to other wetlands (e.g. wetlands developed pursuant to section 404 of the federal Act).
- (11) "CONSTRUCTED WETLANDS" means those wetlands intentionally designed, constructed and operated for the primary purpose of wastewater or stormwater treatment or environmental remediation provided under CERCLA, RCRA, or section 319 of the federal Act, if (a) such wetlands are constructed on non wetland sites that do not contain surface waters of the state, or (b) such wetlands are constructed on previously existing wetland sites, to the extent that approval or authorization under section 404 of the federal Act has been granted for such construction or it is demonstrated that such approval or authorization is not, or was not, required. This term includes, but is not limited to, constructed swales, ditches, culverts, infiltration devices, catch basins, and sedimentation basins that are part of a wastewater or stormwater treatment system or a system for environmental remediation mandated under CERCLA or RCRA. Compensatory wetlands shall not be considered constructed wetlands. Constructed wetlands are not state waters.
- (12) "CREATED WETLANDS" means those wetlands other than compensatory wetlands created in areas which would not be wetlands in the absence of human modifications to the environment. Created wetlands include, but are not limited to wetlands created inadvertently by human activities such as mining, channelization of highway runoff, irrigation, and leakage from man-made water conveyance or storage facilities. Wetlands resulting from hydrologic modifications such as on-channel reservoirs or on-channel diversion structures that expand or extend the reach of adjacent classified state waters are not considered created wetlands.
- (13) "DAILY MAXIMUM TEMPERATURE (DM)" means the highest two-hour average water temperature recorded during a given 24-hour period.
- (14) "DISSOLVED METALS" means that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 um (Micron) membrane filter. Determinations of "Dissolved" constituents are made using the filtrate. This may include some very small (Colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.
- (15) "DIVISION" means the Division of Administration of the Colorado Department of Public Health and Environment of which the Water Quality Control Division is a part.
- (16) "*E.coli*" means *Escherichia coli*.
- (17) "EFFLUENT-DEPENDENT STREAM" means a stream that would be ephemeral without the presence of wastewater effluent, but has continuous or periodic flows for all or a portion of its reach as the result of the discharge of treated wastewater.
- (18) "EFFLUENT-DOMINATED STREAM" means a stream that would be intermittent or perennial without the presence of wastewater effluent whose flow for the majority of the time is primarily attributable to the discharge of treated water (i.e. greater than 50 percent of the flow consists of treated wastewater for at least 183 days annually, for eight out of the last ten years).
- (19) "EPHEMERAL STREAM" means a stream channel or reach of a stream channel that carries flow during, and for a short duration as the result of, precipitation events or snowmelt. The channel bottom is always above the groundwater table.

- (20) "EXISTING QUALITY" means the numeric value that represents the quality of a water body and is generally used for comparison with the water quality standard. Existing quality shall be calculated as:
- Total ammonia, nitrate, and the dissolved metals: 85th percentile
  - Total recoverable metals: 50th percentile
  - Dissolved oxygen: 15<sup>th</sup> percentile
  - *E. coli*: geometric mean
  - pH: the range between the 15th and 85th percentiles
  - Temperature: for the purposes of implementing the acute and chronic standard, "existing quality" is the seasonal maximum DM and WAT and which allows one warming event with a 3-year average exceedance frequency. For data records less than or equal to 3 years, existing quality is equal to the maximum WAT and DM. For data records with 4-6 years, one warming event above the standard is permitted.
- (21) "FEDERAL ACT" means the Clean Water Act, U.S.C. Section 1251 et seq., as amended.
- (22) "FIRST (1st) ORDER STREAM" means a stream that has no tributaries, based on USGS mapping at 1:100,000 scale.
- (23) "FLOODPLAIN" means any flat or nearly flat lowland that borders a stream, a lake, or an on-channel reservoir and that may be covered by its waters at flood or high stage as described by the parameter of the probable maximum flood or probable maximum high stage.
- (24) "HIGHEST ATTAINABLE USE" means the modified use that is both closest to the uses specified in section 31.13 and attainable based on the evaluation of the factors in 31.6(2)(b) that preclude attainment of the use and any other information or analyses that were used to evaluate attainability.
- (25) "LC-50" means the concentration of a parameter that is lethal to 50% of the test organisms within a defined time period.
- (26) "MAXIMUM WEEKLY AVERAGE TEMPERATURE (MWAT)" means the largest WAT in the period of interest. For lakes and reservoirs, the summertime MWAT is assumed to be equivalent to the maximum WAT from at least three profiles distributed throughout the growing season (generally July-September).
- (27) "MIXED LAYER" means that part of a lake that is well-mixed by wind action and can be expected to have relatively homogeneous physical and chemical conditions. In a thermally stratified lake, the mixed layer corresponds to the *epilimnion*; in an unstratified lake, the mixed layer extends to the bottom. The vertical extent of the mixed layer usually is determined by inspection of a vertical profile of temperature.
- (28) "MIXING ZONE" means that area of a water body designated on a case-by-case basis by the Division which is contiguous to a point source and in which certain standards may not apply.
- (29) "NUMERIC VALUE" means the measured concentration of a parameter.

- (30) "PARAMETER" means the chemical constituents or other characteristics of the water such as algae, *E. coli*, total dissolved solids, dissolved oxygen, or the magnitude of radioactivity levels, temperature, pH, and turbidity, or other relevant characteristics.
- (31) "PERMIT" means a National Pollutant Discharge Elimination System (NPDES) permit, a Colorado Discharge Permit System (CDPS) permit, or other state water quality permit.
- (32) "POTENTIALLY DISSOLVED METALS" means that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of less than 2.0 and let stand for 8 to 96 hours prior to sample filtration using a 0.4 or 0.45  $\mu\text{m}$  membrane filter. Note the "Potentially Dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.
- (33) "PRIMARY CONTACT RECREATION" means recreational activities where the ingestion of small quantities of water is likely to occur. Such activities include but are not limited to swimming, rafting, kayaking, tubing, windsurfing, water-skiing, and frequent water play by children.
- (34) "REGIONAL WASTEWATER MANAGEMENT PLAN" means a water quality planning document prepared pursuant to section 208 of the federal Act, sometimes referred to as "208 Plans" or "Water Quality Management Plans."
- (35) "REPRODUCTIVE SEASON" means the portion of the year when fish migration, spawning, egg incubation, fry rearing or other reproductive functions occur.
- (36) "SALINITY" means total dissolved solids (TDS).
- (37) "SECOND (2nd) ORDER STREAM" means a stream which begins downstream of the confluence of two first (1st) order streams and ends downstream of the confluence of two second (2nd) order streams, based on USGS mapping at 1:100,000 scale.
- (38) "STANDARD" means a narrative and/or numeric restriction established by the Commission applied to state surface waters to protect one or more beneficial uses of such waters. Whenever only numeric or only narrative standards are intended, the wording shall specifically designate which is intended.
- (39) "STATE WATERS" means any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.
- (40) "TABLES" means tables I, II, and III, appended to this regulation, which set forth accepted levels for various parameters which will generally protect the beneficial uses of state surface waters.
- (41) "THIRD (3rd) ORDER STREAM" means a stream which begins at the confluence of two second (2nd) order streams and ends downstream of the confluence of two third (3rd) order streams, based on USGS mapping at 1:100,000 scale.
- (42) "TOTAL RECOVERABLE METALS" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in "Methods for Chemical Analysis of Water and Wastes," U.S. Environmental Protection Agency, March, 1979, or its equivalent.

- (43) "TRIBUTARY WETLANDS" means wetlands that are the head waters of surface waters or wetlands within the floodplain that are hydrologically connected to surface waters via either surface or ~~ground-water~~groundwater flows. The hydrologic connection may be intermittent or seasonal, but must be of sufficient extent and duration to normally reoccur annually. Tributary wetlands do not include constructed or created wetlands.
- (44) "USE ATTAINABILITY ANALYSIS" means an assessment of the factors affecting the attainment of aquatic life uses or other beneficial uses, which may include physical, chemical, biological, and economic factors.
- (45) "USES" see Beneficial Uses.
- (46) "WARM WATER BIOTA" means aquatic life normally found in waters where the summer weekly average temperature frequently exceeds 20 ° C.
- (47) "WATER QUALITY-BASED DESIGNATION" means a designation adopted by the Commission for specific state surface waters pursuant to section 31.8(2), to identify which level of water quality protection such waters will receive under the Antidegradation Rule in section 31.8(1). Such designations are adopted pursuant to the Commission's authority to classify state waters, as set forth in section 25-8-203, C.R.S., and the procedural requirements for classifying state waters shall be applied in adopting such designations.
- (48) "WATER EFFECT RATIO" means a ratio that is computed as a specific pollutant's acute or chronic toxicity value measured in water from the site covered by a standard, divided by the respective acute or chronic toxicity value in laboratory dilution water, as more specifically defined in 40 C.F.R. subsection 131.36(c) (1993).
- (49) "WATER QUALITY STANDARD" see Standard.
- (50) "WEEKLY AVERAGE TEMPERATURE (WAT)" means the average of daily average temperatures over a seven-day consecutive period, with a minimum of three data points spaced equally through each day. For lakes and reservoirs, the WAT is assumed to be equivalent to the average temperature of the mixed layer. The average temperature of the mixed layer is determined from a vertical profile of equally-spaced temperature measurements, separated by not more than one meter.
- (51) "WETLANDS" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

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### **31.11 BASIC STANDARDS APPLICABLE TO SURFACE WATERS OF THE STATE**

All surface waters of the state are subject to the following basic standards; however, discharge of substances regulated by permits which are within those permit limitations shall not be a basis for enforcement proceedings under these basic standards:

- (1) Except where authorized by permits, BMPs, 401 certifications, or plans of operation approved by the Division or other applicable agencies, state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which:
- (a) for all surface waters except wetlands;

- (i) can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud; or
  - (ii) form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or
  - (iii) produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or
  - (iv) are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or
  - (v) produce a predominance of undesirable aquatic life; or
  - (vi) cause a film on the surface or produce a deposit on shorelines; and
- (b) for surface waters in wetlands;
- (i) produce color, odor, changes in pH, or other conditions in such a degree as to create a nuisance or harm water quality dependent functions or impart any undesirable taste to significant edible aquatic species of the wetland; or
  - (ii) are toxic to humans, animals, plants, or aquatic life of the wetland.

(2) The radioactive materials in surface waters shall be maintained at the lowest practical level. In no case shall radioactive materials in surface waters be increased by any cause attributable to municipal, industrial, or agricultural practices or discharges to as to exceed the following levels, unless alternative site-specific standards have been adopted pursuant to subsection (4) below:

<u>Radionuclide Standards</u>	
<u>Parameter</u>	<u>Picocuries per Liter</u>
Americium 241*	0.15
Cesium 134	80
Plutonium 239, and 240*	0.15
Radium 226 and 228*	5
Strontium 90*	8
Thorium 230 and 232*	60
Tritium	20,000

\*Radionuclide samples for these materials should be analyzed using unfiltered (total) samples. These Human Health based standards are 30-day average values for both plutonium and americium.

(3) The interim organic pollutant standards contained in the following Basic Standards for Organic Chemicals Table are applicable to all surface waters of the state for which the corresponding use classifications have been adopted, unless alternative site-specific standards have been adopted pursuant to sub-section (4) below.

Note that all standards in the Basic Standards for Organic Chemicals Table are being adopted as "interim standards." These interim standards will remain in effect until alternative permanent standards are adopted by the Commission in revisions to this regulation or site-specific standards determinations. Although fully effective with respect to current regulatory applications, these

interim standards shall not be considered final or permanent standards subject to antibacksliding or downgrading restrictions.

BASIC STANDARDS FOR ORGANIC CHEMICALS  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Acenaphthene	83-32-9	420	420	--- <sup>10</sup>	1,700	520
Acetochlor	34256-82-1	140	---	---	---	---
Acetone	67-64-1	6300	---	---	---	---
Acrolein	107-02-8	3.5	3.5	9.3	68	21
Acrylamide <sup>C, 13</sup>	79-06-1	0.022	---	---	---	---
Acrylonitrile <sup>C</sup>	107-13-1	0.065	0.051	0.25	7,500	2,600
Alachlor	15972-60-8	2 <sup>M</sup>	2	140	---	---
Aldicarb	116-06-3	7 <sup>M</sup>	---	---	---	---
Aldicarb Sulfone	1646-88-4	7 <sup>M</sup>	---	---	---	---
Aldicarb Sulfoxide	1646-87-3	7 <sup>M</sup>	---	---	---	---
Aldrin <sup>C</sup>	309-00-2	0.0021	4.9X10 <sup>-5</sup>	5.0X10 <sup>-5</sup>	1.5	---
Aniline <sup>C</sup>	62-53-3	6.1	---	---	---	---
Anthracene (PAH)	120-12-7	2,100	2,100	40,000	---	---
Aramite <sup>C</sup>	140-57-8	1.4	---	---	---	---
Atrazine	1912-24-9	3 <sup>M</sup>	---	---	---	---
Azobenzene <sup>C</sup>	103-33-3	0.32	---	---	---	---
Benzene <sup>C, 12</sup>	71-43-2	2.3 to 5 <sup>M</sup>	2.2	51	5,300	---
Benzidine <sup>C</sup>	92-87-5	0.00015	8.6X10 <sup>-5</sup>	0.00020	2,500	---

BASIC STANDARDS FOR ORGANIC CHEMICALS  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Benzo(a)anthracene (PAH) <sup>C, 13</sup>	56-55-3	<del>0.0048</del> <u>0.13</u>	<del>0.00380</del> <u>0.0016</u>	<del>0.0180</del> <u>0.0016</u>	---	---
Benzo(a)pyrene (PAH) <sup>C, 12, 13</sup>	50-32-8	<del>0.0048 to</del> <del>0.2<sup>M</sup></del> <u>0.013</u>	<del>0.00380</del> <u>0.00016</u>	<del>0.0180</del> <u>0.00016</u>	---	---
Benzo(b)fluoranthene (PAH) <sup>C, 13</sup>	205-99-2	<del>0.0048</del> <u>0.13</u>	<del>0.00380</del> <u>0.0016</u>	<del>0.0180</del> <u>0.0016</u>	---	---
Benzo(k)fluoranthene (PAH) <sup>C, 13</sup>	207-08-9	<del>0.0048</del> <u>1.3</u>	<del>0.00380</del> <u>0.016</u>	<del>0.0180</del> <u>0.016</u>	---	---
Benzo(g,h,i)perylene (PAH)	191-24-2	---	0.0038	0.018	---	---
Benzotrichloride <sup>C</sup>	98-07-7	0.0027	---	---	---	---
Benzyl chloride <sup>C</sup>	100-44-7	0.21	---	---	---	---
Biphenyl <sup>C</sup>	92-52-4	4.4	---	---	---	---
Bis(chloromethyl)ether (BCME) <sup>C</sup>	542-88-1	0.00016	0.0001	0.0003	---	---
Bromate <sup>C</sup>	15541-45-4	0.050	---	---	---	---
Bromobenzene	108-86-1	56	---	---	---	---
Bromodichloromethane (HM) <sup>C</sup>	75-27-4	---	0.55	17	11,000	---
Bromoform (HM) <sup>C</sup>	75-25-2	---	4.3	140	---	---
Butyl benzyl phthalate	85-68-7	1,400	1,400	1,900	---	---
Carbofuran <sup>C, 12</sup>	1563-66-2	35 to 40 <sup>M</sup>	---	---	---	---
Carbon tetrachloride <sup>C, 12</sup>	56-23-5	0.5 to 5 <sup>M</sup>	0.43	3.0	35,200	---
Chlordane <sup>C, 12</sup>	57-74-9	0.10 to 2 <sup>M</sup>	0.00080	0.00081	1.2	0.0043

BASIC STANDARDS FOR ORGANIC CHEMICALS  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Chlordecone <sup>C</sup>	143-50-0	0.0035	---	---	---	---
Chlorethyl ether (BIS-2) <sup>C</sup>	111-44-4	0.032	0.030	0.53	---	---
Chlorobenzene <sup>11</sup>	108-90-7	100 <sup>M</sup>	100	1,600	---	---
Chlorodibromomethane ( <u>dibromochloromethane</u> ) (HM) <sup>11</sup>	124-48-1	---	54.0	1,700	---	---
Chloroform (HM) <sup>C</sup>	67-66-3	---	3.4	110	28,900	1,240
Chloroisopropyl ether(BIS-2)	108-60-1	280	280	65,000	---	---
4-Chloro-3-methylphenol	59-50-7	210	---	---	30	---
Chloronaphthalene	91-58-7	560	560	--- <sup>10</sup>	2,300	620
Chlorophenol,2-	95-57-8	35	35	150	4,380	2,000
<u>Chlorpyrifos</u> <u>Chlorphrifos</u>	2921-88-2	21	---	---	0.083	0.041
Chrysene (PAH) <sup>C-13</sup>	218-01-9	<u>0.004813</u>	<u>0.00380.16</u>	<u>0.0180.16</u>	---	---
<u>Dalapon</u>	<u>75-99-0</u>	<u>200<sup>M</sup></u>	---	---	---	---
DDD <sup>C</sup>	72-54-8	0.15	0.00031	0.00031	0.6	---
DDE <sup>C</sup>	72-55-9	0.1	0.00022	0.00022	1,050	---
DDT <sup>C</sup>	50-29-3	0.1	0.00022	0.00022	0.55	0.001
<u>Dalapon</u>	<u>75-99-0</u>	<u>200<sup>M</sup></u>	---	---	---	---
Demeton	8065-48-3	---	---	---	---	0.1
<u>Di(2-ethylhexyl)adipate</u>	<u>103-23-1</u>	<u>400<sup>M</sup></u>	---	---	---	---

**BASIC STANDARDS FOR ORGANIC CHEMICALS**  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Diazinon	333-41-5	---	---	---	0.17	0.17
Dibenzo(a,h)anthracene (PAH) <sup>C,13</sup>	53-70-3	<del>0.00480.013</del>	<del>0.00380.00016</del>	<del>0.0180.00016</del>	---	---
1,2 Dibromo-3-Chloropropane (DBCP) <sup>C</sup>	96-12-8	0.2 <sup>M</sup>	---	---	---	---
Dibromoethane 1,2 <sup>C,13</sup>	106-93-4	0.018	---	---	---	---
Dicamba	1918-00-9	210	170	860	---	---
Dichloroacetic acid <sup>C</sup>	79-43-6	0.7	---	---	---	---
Dichlorobenzene 1,2 <sup>11</sup>	95-50-1	600 <sup>M</sup>	420	1,300	---	---
Dichlorobenzene 1,3	541-73-1	94	94	960	---	---
Dichlorobenzene 1,4 <sup>11</sup>	106-46-7	75 <sup>M</sup>	63	190	---	---
Dichlorobenzidine <sup>C</sup>	91-94-1	0.078	0.021	0.028	---	---
Dichloroethane 1,2 <sup>C,12</sup>	107-06-2	0.38 to 5 <sup>M</sup>	0.38	37	118,000	20,000
Dichloroethylene 1,1	75-35-4	7 <sup>M</sup>	7	3,600	---	---
Dichloroethylene 1,2-cis <sup>12</sup>	156-59-2	14 to 70 <sup>M</sup>	---	---	---	---
Dichloroethylene 1,2-trans <sup>11</sup>	156-60-5	100 <sup>M</sup>	100	10,000	---	---
Dichloromethane (methylene chloride) <sup>C,13</sup>	75-09-2	5 <sup>M</sup>	4.6	590	---	---
Dichlorophenol 2,4	120-83-2	21	21	290	2,020	365
Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70 <sup>M</sup>	---	---	---	---
Dichloropropane 1,2 <sup>C,12</sup>	78-87-5	0.52 to 5 <sup>M</sup>	0.50	14	23,000	5,700

**BASIC STANDARDS FOR ORGANIC CHEMICALS**  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Dichloropropylene 1,3 <sup>C</sup>	542-75-6	0.35	0.34	21	6,060	244
Dichlorvos <sup>C</sup>	62-73-7	0.12	---	---	---	---
Dieldrin <sup>C</sup>	60-57-1	0.002	5.2X10 <sup>-5</sup>	5.4X10 <sup>-5</sup>	0.24	0.056
Diethyl phthalate	84-66-2	5,600	5,600	44,000	---	---
Diisopropylmethylphosphonate (DIMP)	1445-75-6	8	---	---	---	---
Dimethylphenol 2,4	105-67-9	140	140	850	2,120	---
Dimethyl phthalate	131-11-3	70,000	70,000	1,100,000	---	---
Di-n-butyl phthalate	84-74-2	700	700	4,500	---	---
<u>Dinitro-o-cresol 4,6</u>	<u>534-52-1</u>	<u>0.27</u>	<u>1.3</u>	<u>28</u>	<u>---</u>	<u>---</u>
Dinitrophenol 2,4	51-28-5	14	14	5,300	---	---
<u>Dinitro-o-cresol 4,6</u>	<u>534-52-1</u>	<u>0.27</u>	<u>1.3</u>	<u>28</u>	<u>---</u>	<u>---</u>
Dinitrotoluene 2,4 <sup>C</sup>	121-14-2	0.11	0.11	3.4	---	---
Dinitrotoluene 2,6 <sup>C</sup>	606-20-2	---	---	---	330	230
Dinoseb	88-85-7	7 <sup>M</sup>	---	---	---	---
Dioxane 1,4- <sup>C</sup>	123-91-1	0.35	---	---	---	---
Dioxin (2,3,7,8 TCDD) <sup>C, 12</sup>	1746-01-6	2.2x10 <sup>-7</sup> to 3.0x10 <sup>-5, M</sup>	5.0X10 <sup>-9</sup>	5.1X10 <sup>-9</sup>	0.01	0.00001
Diphenylhydrazine 1,2 <sup>C</sup>	122-66-7	0.044	0.036	0.20	270	---
<u>Di(2-ethylhexyl)adipate</u>	<u>103-23-1</u>	<u>400<sup>M</sup></u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>

BASIC STANDARDS FOR ORGANIC CHEMICALS  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Diquat <sup>12</sup>	85-00-7	15 to 20 <sup>M</sup>	---	---	---	---
Endosulfan	115-29-7	42	--- <sup>10</sup>	---	0.11	0.056
Endosulfan, alpha	959-98-8	42	--- <sup>10</sup>	---	0.11	0.056
Endosulfan, beta	33213-65-9	42	--- <sup>10</sup>	---	0.11	0.056
Endosulfan sulfate	1031-07-8	42	--- <sup>10</sup>	---	0.11	0.056
Endothall	145-73-3	100 <sup>M</sup>	---	---	---	---
Endrin	72-20-8	2 <sup>M</sup>	---- <sup>10</sup>	---	0.086	0.036
Endrin aldehyde	7421-93-4	2.1	0.29	0.30	---	---
Epichlorohydrin <sup>C</sup>	106-89-8	3.5	---	---	---	---
Ethylbenzene <sup>11</sup>	100-41-4	700 <sup>M</sup>	530	2,100	32,000	---
Ethylene dibromide <sup>C, 12</sup> (1,2 – dibromoethane)	106-93-4	0.02 to 0.05 <sup>M</sup>	---	---	---	---
Ethylene glycol monobutyl ether (EGBE) (2-Butoxyethanol)	111-76-2	700	---	---	---	---
Ethylhexyl phthalate (BIS-2) <sup>C, 12</sup> (DEHP)	117-81-7	2.5 to 6 <sup>M</sup>	1.2	2.2	---	---
Fluoranthene (PAH)	206-44-0	280	130	140	3,980	---
Fluorene (PAH)	86-73-7	280	280	5,300	---	---
Folpet <sup>C</sup>	133-07-3	10	---	---	---	---
Furmecyclo <sup>C</sup>	60568-05-0	1.2	---	---	---	---
Glyphosate	1071-83-6	700 <sup>M</sup>	---	---	---	---

**BASIC STANDARDS FOR ORGANIC CHEMICALS**  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Guthion	86-50-0	---	---	---	---	0.01
Heptachlor <sup>C, 12</sup>	76-44-8	0.008 to 0.4 <sup>M</sup>	7.8X10 <sup>-5</sup>	7.9X10 <sup>-5</sup>	0.52	0.0038
Heptachlor epoxide <sup>C, 12</sup>	1024-57-3	0.004 to 0.2 <sup>M</sup>	3.9X10 <sup>-5</sup>	3.9X10 <sup>-5</sup>	0.52	0.0038
Hexachlorobenzene <sup>C, 12</sup>	118-74-1	0.022 to 1.0 <sup>M</sup>	0.00028	0.00029	---	---
Hexachlorobutadiene	87-68-3	0.45	0.44	--- <sup>10</sup>	90	9.3
Hexachlorocyclohexane, Alpha <sup>C</sup>	319-84-6	0.0056	0.0026	0.0049	---	---
Hexachlorocyclohexane, Beta	319-85-7	0.019	0.0091	0.017	---	---
Hexachlorocyclohexane, Gamma (Lindane)	58-89-9	0.2 <sup>M</sup>	0.2	--- <sup>10</sup>	0.95	0.08
Hexachlorocyclohexane, Technical <sup>C</sup>	608-73-1	---	0.012	0.041	100	---
Hexachlorocyclopentadiene <sup>11, 12</sup> (HCCPD)	77-47-4	42 to 50 <sup>M</sup>	40	--- <sup>10</sup>	7	5
Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-hcdd) <sup>C</sup>	19408-74-3	5.60E-06	---	---	---	---
Hexachloroethane <sup>C</sup>	67-72-1	0.88	0.5	1.2	980	540
<u>Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)</u>	<u>121-82-4</u>	<u>2.8</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
Hexanone 2-	591-78-6	35	---	---	---	---
Hydrazine/Hydrazine sulfate <sup>C</sup>	302-01-2	0.012	---	---	---	---
Indeno(1,2,3-cd)_pyrene (PAH) <sup>C, 13</sup>	193-39-5	<u>0.00480.13</u>	<u>0.00380.0016</u>	<u>0.0480.0016</u>	---	---
Isophorone <sup>11</sup>	78-59-1	140	130	3,600	---	---

**BASIC STANDARDS FOR ORGANIC CHEMICALS**  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Malathion	121-75-5	140	---	---	---	0.1
Methanol	67-56-1	14,000	---	---	---	---
Methoxychlor <sup>12</sup>	72-43-5	35 to 40 <sup>M</sup>	--- <sup>10</sup>	---	---	0.03
Methyl bromide (HM)	74-83-9	---	9.8	1,500	---	---
Methyl chloride (HM) <sup>C</sup>	74-87-3	---	5.6	180	---	---
<del>4,4</del> -Methylene bis-(N,N'-dimethyl)aniline 4,4- <sup>C</sup>	101-61-1	0.76	---	---	---	---
Metribuzin	21087-64-9	180	160	1,700	---	---
Mirex	2385-85-5	1.4	---	---	---	0.001
Naphthalene (PAH)	91-20-3	140	140	--- <sup>10</sup>	2,300	620
Nitrobenzene	98-95-3	14	14	2,800	27,000	---
Nitrophenol 4	100-02-7	56	56	9,700	---	---
Nitrosodibutylamine N <sup>C</sup>	924-16-3	0.0065	0.0043	0.012	---	---
Nitrosodiethylamine N <sup>C</sup>	55-18-5	0.00023	0.00023	0.0083	---	---
Nitrosodimethylamine N <sup>C</sup> (NDMA)	62-75-9	0.00069	0.00069	3.0	---	---
N-Nitrosodiethanolamine <sup>C</sup>	1116-54-7	0.013	---	---	---	---
Nitrosodiphenylamine N <sup>C</sup>	86-30-6	7.1	3.3	6.0	---	---
N-Nitroso-N-methylethylamine <sup>C</sup>	10595-95-6	0.0016	---	---	---	---
<u>N-Nitrosodi-n-propylamine<sup>C</sup></u>	<u>621-64-7</u>	<u>0.005</u>	<u>0.005</u>	<u>0.50</u>	<u>---</u>	<u>---</u>

**BASIC STANDARDS FOR ORGANIC CHEMICALS**  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Nitrosopyrrolidine N <sup>C</sup>	930-55-2	0.017	0.016	36	---	---
<del>N-Nitrosodi-n-propylamine<sup>C</sup></del>	<del>621-64-7</del>	<del>0.005</del>	<del>0.005</del>	<del>0.50</del>	<del>---</del>	<del>---</del>
Nonylphenol	84852-15-3 and 25154-52-3	---	---	---	28 (effective 1/1/2011)	6.6 (effective 1/1/2011)
Oxamyl (vydate) <sup>12</sup>	23135-22-0	175 to 200 <sup>M</sup>	---	---	---	---
PCBs <sup>C, 9, 12</sup>	1336-36-3	0.0175 to 0.5 <sup>M</sup>	6.4X10 <sup>-5</sup>	6.4X10 <sup>-5</sup>	2.0	0.014
Parathion	56-38-2	---	---	---	0.065	0.013
Pentachlorobenzene	608-93-5	5.6	1.4	1.5	---	---
Pentachlorophenol <sup>C, 12</sup>	87-86-5	0.088 to 1.0 <sup>M</sup>	0.080	0.91	19 <sup>6</sup>	15 <sup>6</sup>
Perchlorate	7790-98-9	4.9	---	---	---	---
Phenol	108-95-2	2,100	2,100	--- <sup>10</sup>	10,200	2,560
Picloram	1918-02-1	490	---	---	---	---
Prometon	1610-18-0	100	---	---	---	---
Propylene oxide <sup>C</sup>	75-56-9	0.15	---	---	---	---
Pyrene (PAH)	129-00-0	210	210	4,000	---	---
Quinoline <sup>C</sup>	91-22-5	0.012	---	---	---	---
Simazine	122-34-9	4 <sup>M</sup>	---	---	---	---
Styrene	100-42-5	100 <sup>M</sup>	---	---	---	---

**BASIC STANDARDS FOR ORGANIC CHEMICALS**  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
Tetrachlorobenzene 1,2,4,5-	95-94-3	2.1	0.97	1.07	---	---
Tetrachloroethane 1,1,2,2 <sup>C</sup>	79-34-5	0.18	0.17	4	---	2,400
Tetrachloroethylene (PCE) <sup>C</sup>	127-18-4	5 <sup>M</sup>	5	62	5,280	840
Tetrahydrofuran	109-99-9	6,300	---	---	---	---
Toluene <sup>11, 12</sup>	108-88-3	560 to 1,000 <sup>M</sup>	510	5,900	17,500	---
Toxaphene <sup>C, 12</sup>	8001-35-2	0.032 to 3 <sup>M</sup>	0.00028	--- <sup>10</sup>	0.73	0.0002
Tributyltin (TBT)	56573-85-4	---	---	---	0.46	0.072
<del>Trichloroacetic</del> Trichloroacetic acid	76-03-9	0.52	---	---	---	---
Trichlorobenzene 1,2,4- <sup>11</sup>	120-82-1	70 <sup>M</sup>	35	--- <sup>10</sup>	250	50
Trichloroethane 1,1,1 (1,1,1-TCA)	71-55-6	200 <sup>M</sup>	---	---	---	---
Trichloroethane 1,1,2 (1,1,2-TCA) <sup>11, 12</sup>	79-00-5	2.8 to 5 <sup>M</sup>	2.7	71	9,400	---
Trichloroethylene (TCE) <sup>C</sup>	79-01-6	5 <sup>M</sup>	2.5	30	45,000	21,900
Trichloropropane 1,2,3- <sup>C, 13</sup>	96-18-4	3.7E-4	---	---	---	---
Trichlorophenol 2,4,5	95-95-4	700	700	3,600	---	---
Trichlorophenol 2,4,6 <sup>C</sup>	88-06-2	3.2	1.4	2.4	---	970
Trichlorophenoxypropionic acid (2,4,5-tp) (Silvex)	93-72-1	50 <sup>M</sup>	---	---	---	---

BASIC STANDARDS FOR ORGANIC CHEMICALS  
(in micrograms per liter)

Parameter	CAS No.	Human Health Based <sup>1</sup>			Aquatic Life Based <sup>4</sup>	
		Water Supply <sup>2</sup>	Water+Fish <sup>3</sup>	Fish Ingestion <sup>8</sup>	Acute	Chronic
<u>Total Trihalomethanes (HMs)</u>	(total) <sup>7</sup>	80 <sup>M</sup>	80	---	---	---
<u>Trimethylbenzene 1,2,3</u>	<u>526-73-8</u>	<u>7.0</u>	---	---	---	---
<u>Trimethylbenzene 1,2,4</u>	<u>95-63-6</u>	<u>7.0</u>	---	---	---	---
<u>Trimethylbenzene 1,3,5</u>	<u>108-67-8</u>	<u>7.0</u>	---	---	---	---
Vinyl Chloride <sup>C, 12</sup>	75-01-4	0.023 to 2 <sup>M</sup>	0.023	2.3	---	---
Xylenes (total) <sup>12</sup>	1330-20-7	1,400 to 10,000 <sup>M</sup>	---	---	---	---

- 1 All standards are chronic or 30-day standards. They are based on information contained in EPA's Integrated Risk Information System (IRIS) and/or EPA lifetime health advisories for drinking water using a  $10^{-6}$  incremental risk factor unless otherwise noted.
- 2 Only applicable to segments classified for water supply.
- 3 Applicable to all Class 1 aquatic life segments which also have a water supply classification or Class 2 aquatic life segments which also have a water supply classification designated by the Commission after rulemaking hearing. These class 2 segments will generally be those where fish of a catchable size and which are normally consumed are present, and where there is evidence that fishing takes place on a recurring basis. The Commission may also consider additional evidence that may be relevant to a determination whether the conditions applicable to a particular segment are similar enough to the assumptions underlying the water plus fish ingestion criteria to warrant the adoption of water plus fish ingestion standards for the segment in question.
- 4 Applicable to all aquatic life segments.
- 5 Deleted.
- 6 Standards are pH dependent. Those listed are calculated for pH = 7.8.

$$\text{Acute} = e^{[1.005(\text{pH})-4.869]}; \text{Chronic} = e^{[1.005(\text{pH})-5.134]}$$

- 7 Total trihalomethanes are considered the sum of the concentrations of bromodichloromethane (CAS No. 75-27-4), dibromochloromethane (Chlorodibromomethane(HM), CAS No. 124-48-1), tribromomethane (bromoform, CAS No. 75-25-2) and trichloromethane (chloroform, CAS No. 67-66-3).
- 8 Applicable to the following segments which do not have a water supply classification: all Class 1 aquatic life segments or Class 2 aquatic life segments designated by the Commission after rulemaking hearing. These class 2 segments will generally be those where fish of a catchable size and which are normally consumed are present, and where there is evidence that fishing takes place on a recurring basis. The Commission may also consider additional evidence that may be relevant to a determination whether the conditions applicable to a particular segment are similar enough to the assumptions underlying the fish ingestion criteria to warrant the adoption of fish ingestion standards for the segment in question.
- 9 PCBs are a class of chemicals which include aroclors, 1242, 1254, 1221, 1232, 1248, 1260 and 1016, CAS numbers 53469-21-9, 11097-69-1, 11104-28-2, 11141-16-5, 12672-29-6, 11096-82-5, and 12674-11-2 respectively. The aquatic life criteria apply to this set of PCBs. The human health criteria apply to total PCBs, i.e. the sum of all congener or all isomer analyses.
- 10 The chronic aquatic life standard is more stringent than the associated Water+Fish or Fish Ingestion standard, and therefore no Water+Fish or Fish Ingestion standard has been adopted.
- 11 The Water+Fish and Fish Ingestions standards for these compounds have been calculated using a relative source contribution (RSC).
- 12 Whenever a range of standards is listed and referenced to this footnote, the first number in the range is a strictly health-based value, based on the Commission's established methodology for human health-based standards. The second number in the range is a maximum contaminant level, established under the federal Safe Drinking Water Act that has been determined to be an acceptable level of this chemical in public water supplies, taking treatability and laboratory detection limits into account. Control requirements, such as discharge permit effluent limitations, shall be established using the first number in the range as the ambient water quality target, provided that no effluent limitation shall require an "end-of-pipe" discharge level more restrictive than the second number in the range. Water bodies will be considered in attainment of this standard, and not included on the Section 303(d) List, so long as the existing ambient quality does not exceed the second number in the range.
- 13 Mutagenic compound, age dependent factors were used in calculating standard.
- C Carcinogens classified by the EPA as A, B1, or B2.
- M Drinking water MCL.

CAS No. - Chemical Abstracts Service Registry Number.

(HM) – Halomethanes

(PAH) - Polynuclear Aromatic Hydrocarbons.

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(4) Site-Specific Radioactive Materials and Organic Pollutants Standards.

- (a) In determining whether to adopt site-specific standards to apply in lieu of the statewide standards established in sections (2) and (3) above, the Commission shall first determine the appropriate use classifications, in accordance with section 31.13. If such a determination would result in removing an existing classification, the downgrading factors in section 31.6 (2)(B) shall apply.

- (b) The Commission shall then determine whether numerical standards other than some or all of the statewide standards established in sections (2) and (3) above would be more appropriate for protection of the classified uses, taking into account the factors prescribed in section 25-8-204(4), C.R.S. and in section 31.7. The downgrading factors described in section 31.6(2)(B) shall not apply to the establishment of site-specific standards under this section.
  - (c) Site-specific standards to apply in lieu of statewide standards may be based upon consideration of the appropriateness of the assumptions used in the risk assessment based potency factors and reference dose values, including, but not limited to, consideration of the uncertainty factor, exposure assessment, bioaccumulation factor, exposed population factor, assumed consumption factor, risk comparisons, uncertainty analysis, and the availability of the toxics in the water column, considering persistence, hardness, pH, temperature or valence form in the water column.
- (5) Nothing in this regulation shall be interpreted to preclude:
- (a) An agency responsible for implementation of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601 et seq., as amended, from selecting a remedial action that is more or less stringent than would be achieved by compliance with the statewide numerical standards established in this section, or alternative site-specific standards adopted by the commission, where a determination is made that such a variation is authorized pursuant to the applicable provisions of CERCLA.
- (6) Except where the Commission adopts or has adopted a different standard on a site-specific basis, the less restrictive of the following two options shall apply as numerical standards for all surface waters with a “water supply” classification, if water supply is an actual use of the waters in question or of hydrologically connected ~~ground water~~groundwater:
- i. existing quality as of January 1, 2000; or
  - ii. the following table value criteria set forth in Tables II and III:
- |           |                      |
|-----------|----------------------|
| Iron      | 300 ug/l (dissolved) |
| Manganese | 50 ug/l (dissolved)  |
| Sulfate   | 250 mg/l             |

Provided, that if the existing quality of these constituents in such surface waters as of January 1, 2000, is affected by an unauthorized discharge with respect to which the Division has undertaken an enforcement action, the numerical standards shall be the ambient conditions existing prior to the unauthorized discharge or the above table value criteria, whichever is less restrictive.

Data generated subsequent to January 1, 2000 shall be presumed to be representative of existing quality as of January 1, 2000, if the available information indicates that there have been no new or increased sources of these pollutants impacting the segment(s) in question subsequent to that date.

For all surface waters with a “water supply” classification that are not in actual use as a water supply, the water supply table value criteria for sulfate, iron and manganese set forth in Tables II and III may be applied as numerical standards only if the Commission determines as the result of a site-specific rulemaking hearing that such standards are necessary and appropriate in accordance with section 31.7.

- (7) Methylmercury Fish Tissue: Fish tissue concentrations shall not exceed 0.3 milligrams methylmercury per kilogram (0.3 mg/kg) of wet-weight fish tissue. Attainment of the standard will be assessed by comparing the average fish tissue methylmercury concentration for each species and size class to the 0.3 mg/kg standard.

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### 31.13 STATE USE CLASSIFICATIONS

Waters are classified according to the uses for which they are presently suitable or intended to become suitable. In addition to the classifications, one or more of the qualifying designations described in section 31.13(2), may be appended. Classifications may be established for any state surface waters, except that water in ditches and other manmade conveyance structures shall not be classified.

#### (1) Classifications

##### (a) Recreation

###### (i) Class E Existing Primary Contact Use

These surface waters are used for primary contact recreation or have been used for such activities since November 28, 1975.

###### (ii) Class P - Potential Primary Contact Use

These surface waters have the potential to be used for primary contact recreation. This classification shall be assigned to water segments for which no use attainability analysis has been performed demonstrating that a recreation class N classification is appropriate, if a reasonable level of inquiry has failed to identify any existing primary contact uses of the water segment, or where the conclusion of a UAA is that primary contact uses may potentially occur in the segment, but there are no existing primary contact uses.

###### (iii) Class N - Not Primary Contact Use

These surface waters are not suitable or intended to become suitable for primary contact recreation uses. This classification shall be applied only where a use attainability analysis demonstrates that there is not a reasonable likelihood that primary contact uses will occur in the water segment(s) in question within the next 20-year period.

###### (v) Class U - Undetermined Use

These are surface waters whose quality is to be protected at the same level as existing primary contact use waters, but for which there has not been a reasonable level of inquiry about existing recreational uses and no recreation use attainability analysis has been completed. This shall be the default classification until inquiry or analysis demonstrates that another classification is appropriate.

##### (b) Agriculture

These surface waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock.

##### (c) Aquatic Life

These surface waters presently support aquatic life uses as described below, or such uses may reasonably be expected in the future due to the suitability of present conditions, or the waters are intended to become suitable for such uses as a goal:

(i) Class I - Cold Water Aquatic Life

These are waters that (1) currently are capable of sustaining a wide variety of cold water biota, including sensitive species, or (2) could sustain such biota but for correctable water quality conditions. Waters shall be considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species.

(ii) Class 1 - Warm Water Aquatic Life

These are waters that (1) currently are capable of sustaining a wide variety of warm water biota, including sensitive species, or (2) could sustain such biota but for correctable water quality conditions. Waters shall be considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species.

(iii) Class 2- Cold and Warm Water Aquatic Life

These are waters that are not capable of sustaining a wide variety of cold or warm water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.

(d) Domestic Water Supply

These surface waters are suitable or intended to become suitable for potable water supplies. After receiving standard treatment (defined as coagulation, flocculation, sedimentation, filtration, and disinfection with chlorine or its equivalent) these waters will meet Colorado drinking water regulations and any revisions, amendments, or supplements thereto.

(i) Direct Use Water Supply Lakes and Reservoirs Sub-classification

(A) For the purpose of this section, "plant intake" means the works or structures at the head of a conduit through which surface water is diverted from a source (e.g., lake) into the treatment plant.

(B) Direct Use Water Supply Lakes and Reservoirs (DUWS) are those water supply lakes and reservoirs where:

(I) There is a plant intake located in the lake or reservoir or a man-made conveyance from the lake or reservoir that is used regularly to provide raw water directly to a water treatment plant that treats and disinfects raw water, or

(II) The Commission, based on evidence in the record, determines that the reservoir will meet the criteria in 31.13(1)(d)(i)(B)(I) in the future.

(e) Wetlands

(i) The provisions of this section do not apply to constructed wetlands.

- (ii) Compensatory wetlands shall have, as a minimum, the classifications of the segment in which they are located.
- (iii) Created wetlands shall be considered to be initially unclassified, and shall be subject only to the narrative standards set forth in section 31.11, unless and until the Commission adopts the “wetlands” classification described below and appropriate numeric standards for such wetlands.
- (iv) Tributary wetlands shall be considered tributaries of the surface water segment to which they are most directly connected and shall be subject to interim classifications as follows: such wetlands shall be considered to have the same classifications, except for drinking water supply classifications, as the segment of which they are a part, unless the “wetlands” classification and appropriate site-specific standards have been adopted to protect the water quality dependent functions of the wetlands. Interim numeric standards for these wetlands are described in section 31.7(1)(b)(iv).
- (v) The Commission may adopt a “wetlands” classification based on the functions of the wetlands in question. Wetland functions that may warrant site-specific protection include ~~ground-water~~groundwater recharge or discharge, flood flow alteration, sediment stabilization, sediment or other pollutant retention, nutrient removal or transformation, biological diversity or uniqueness, wildlife diversity or abundance, aquatic life diversity or abundance, and recreation. Because some wetland functions may be mutually exclusive (e.g., wildlife abundance, recreation), the functions to be protected or restored will be determined on a wetland-by-wetland basis, considering natural wetland characteristics and overall benefits to the watershed. The initial adoption of a site-specific wetlands classification and related standards to replace the interim classifications and standards described above shall not be considered a downgrading.

## **(2) Qualifiers**

The following qualifiers may be appended to any classification to indicate special considerations. Where a qualifier applies, it will be appended to the use classification; for example, “Class 1, Warm Water Aquatic Life (Goal)”.

### **(a) Goal**

A qualifier which indicates that the waters are presently not fully suitable but are intended to become fully suitable for the classified use. “Goal” will be used to indicate that a temporary modification for one or more of the underlying numeric standards has been granted.

### **(b) Seasonal**

A qualifier which indicates that the water may only be suitable for a classified use during certain periods of the year. During those periods when water is in the stream, the standards as defined in sections 31.7(1)(b) and 31.9(1) shall apply.

### **(c) Interrupted Flow**

A qualifier which indicates that due to natural or human induced conditions the continuity of flow is broken not necessarily according to a seasonal schedule. This qualifier appended to a classification indicates that the flow conditions still permit the classified use during period of flow. The presence of water diversions in a stream does not change the classifications and standards and the standards do not require that flow be maintained in the stream.

### **(3) Areas Requiring Special Protection**

In special cases where protection of beneficial uses requires standards not provided by the classification above, special standards may be assigned after full public notice and hearings. Cases where special protection may be needed include but are not limited to wildlife preserves and waterbodies endangered by eutrophication. In addition, the Commission may adopt site-specific criteria-based standards based on site-specific analyses to protect agriculture, water supply or recreational uses.

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## **31.16 TABLES**

### **(1) INTRODUCTION**

The numeric levels for parameters listed in Tables I, II, III shall be considered and applied as appropriate by the Commission in establishing site-specific numeric standards, in accordance with section 31.7.

For the purposes of integrating these parameters into NPDES discharge permits, the duration of the averaging period for the numeric level is designated in the tables. Chronic levels and 30-day levels are to be averaged as defined in section 31.5(7). Acute levels and 1-day levels are to be averaged as defined in section 31.5(2).

Certain toxic metals for Aquatic Life have different numeric levels for different levels of water hardness. Water hardness is being used here as an indication of differences in the complexing capacity of natural waters and the corresponding variation of metal toxicity. Other factors such as organic and inorganic ligands, pH, and other factors affecting the complexing capacity of the waters may be considered in setting site-specific numeric standards in accordance with section 31.7. Metals listed in Table III for aquatic life uses are stated in the dissolved form unless otherwise indicated.

### **(2) TESTING PROCEDURES**

Various testing procedures to determine that numeric values for water quality parameters may be appropriate to present to the Water Quality Control Commission at stream classification hearings. (See section 31.6(3)). These include:

#### **(a) Standard Test Procedures**

- (i) Code of Federal Regulations, Title 40, Part 136;
- (ii) The latest approved EPA Methods for Chemical Analysis of Water and Wastes;
- (iii) Standard Methods for the Examination of Water and Wastewater (current edition), American Public Health Association;
- (iv) ASTM Standards, Part 31, Water;
- (v) EPA Biological Field and Laboratory Methods.

#### **(b) Toxicity testing and Criteria Development Procedures:**

- (i) The latest EPA Methods for Chemical Analysis of Water and Wastewater; ASTM, Standard Methods for Examination of Water, Wastewater;
- (ii) Interim Guidance on Determination and Use of Water-Effect Ratio for Metals, EPA-823-B-94-001, U.S. Environmental Protection Agency, February, 1994.

(iii) Other approved EPA methods.

(c) Other Procedures:

Other procedures may be deemed appropriate by either the Water Quality Control Commission and/or the Water Quality Control Division.

### (3) REFERENCES

Capital letters following levels in the tables indicate the sources of the level; they are referenced below. In some cases, the source is described in a footnote.

- (A) EPA Quality Criteria for Water, July 1976, U.S. Environmental Protection Agency, U.S. Government Printing Office: 1977 0-222-904, Washington, D.C. 256 p.
- (B) EPA - Water Quality Criteria 1972, Ecological Research Series, National Academy of Sciences, National Academy of Engineering, EPA-R3-73-033, March 1973, Washington, D.C. 594 p.
- (C) Davies, P.H. and Goettl, J.P., Jr., July 1976, Aquatic Life - Water Quality Recommendations for Heavy Metal and Other Inorganics.
- (D) Parametrix Inc., Attachment II, Parametrix Reports - Toxicology Assessments of As, Cu, Fe, Mn, Se, and Zn, May 1976, Bellevue, Washington, 98005. submitted to Water Quality Control Commission by Gulf Oil Corp., Inc., 161 p.
- (E) EPA National Interim Primary Drinking Water Regulations, 40 Code of Federal Regulations, Part 141.
- (F) EPA, March 1977, Proposed National Secondary Drinking Water Regulation, Federal Register, Vol. 42 No. 62, pp 17143-17147.
- (G) Recommendations based on review of all available information by the Committee on Water Quality Standards and Stream Classification.
- (H) American Fishery Society, June 1978, A Review of the EPA Red Book Quality Criteria for Water. (Preliminary Edition).
- (I) Section 307 of the Clean Water Act, regulations promulgated pursuant to Section 307.
- (J) Final Report of the Water Quality Standards and Methodologies Committee to the Colorado Water Quality Control Commission, June 1986.
- (K) Proposed Nitrogenous Water Quality Standards for the State of Colorado, by the Nitrogen Cycle Committee of the Basic Standards Review Task Force, March 12, 1986 (Final Draft).
- (L) Quality Criteria for Water, 1986, and Updates Through 1989, U.S. Environmental Protection Agency, U.S. Government Printing Office, EPA 440/5-86-001, Washington, D.C. 20460.
- (M) m superscript: level modified by Commission
- (N) 1999 Update of Ambient Water Quality Criteria for Ammonia (1999 Ammonia Update), U.S. Environmental Protection Agency, Office of Water, EPA-823-F-99-024, Washington, D.C. 20460.

- (O) Raisbeck, M.F., S. L. Riker, C. M. Tate, R. Jackson, M. A. Smith, K. J. Reddy and J. R. Zygmunt. 2008. Water quality for Wyoming livestock and wildlife. University of Wyoming AES Bulletin B-1183.

TABLE I - PHYSICAL AND BIOLOGICAL PARAMETERS

TABLE I PHYSICAL AND BIOLOGICAL PARAMETERS								
Parameter	Recreational			Aquatic Life			Agriculture	Domestic Water Supply
	CLASS E (Existing Primary Contact) and CLASS U (Undetermined Use)	CLASS P (Potential Primary Contact Use)	CLASS N (Not Primary Contact Use)	CLASS 1 COLD WATER BIOTA	CLASS 1 WARM WATER BIOTA	CLASS 2		
<b>PHYSICAL:</b>								
D.O. (mg/l) <sup>(1)(9)</sup>	3.0(A)	3.0(A)	3.0(A)	6.0 <sup>(2)</sup> (G) 7.0(spawning)	5.0 <sup>(2)</sup> (G)	5.0(A)	3.0(A)	3.0(A)
pH (Std. Units) <sup>(3)</sup>	6.5–9.0 (Bm)	6.5–9.0 (Bm)	6.5–9.0 (Bm)	6.5–9.0(A)	6.5–9.0(A)	6.5–9.0(A)		5.0–9.0(A)
Suspended Solids <sup>(4)</sup>								
Temperature (°C) <sup>(5)</sup>				<b>Rivers &amp; Streams:</b> <b>Tier I<sup>a,g</sup>:</b> June-Sept = 17.0 (ch), 21.7 (ac) Oct–May = 9.0 (ch), 13.0 (ac)  <b>Tier II<sup>b,g</sup>:</b> Apr-Oct = 18.3 (ch), 24.3 (ac) Nov-Mar = 9.0 (ch), 13.0 (ac)  <b>Lakes &amp; Res<sup>h</sup>:</b> Apr-Dec = 17.0 (ch), 21.2 (ac) Jan-Mar = 9.0 (ch), 13.0 (ac)  <b>Large Lakes &amp; Res<sup>c,h</sup>:</b> Apr-Dec = 18.3 (ch), 24.2 (ac) Jan-Mar = 9.0 (ch), 13.0 (ac)	<b>Rivers &amp; Streams:</b> <b>Tier I<sup>d</sup>:</b> Mar-Nov = 24.2 (ch), 29.0 (ac) Dec-Feb = 12.1 (ch), 24.6 (ac)  <b>Tier II<sup>e</sup>:</b> Mar-Nov = 27.5 (ch), 28.6 (ac) Dec-Feb = 13.8 (ch), 25.2 (ac)  <b>Tier III<sup>f</sup>:</b> Mar-Nov = 28.7 (ch), 31.8 (ac) Dec-Feb = 14.3 (ch), 24.9 (ac)  <b>Lakes &amp; Res:</b> Apr-Dec = 26.2 (ch), 29.3 (ac) Jan-Mar = 13.1 (ch), 24.1 (ac)	Same as Class 1		
<b>BIOLOGICAL:</b>								
<i>E. coli</i> per 100 ml	126 <sup>(7)</sup>	205 <sup>(7)</sup>	630 <sup>(7)</sup>					630
Note: Capital letters in parentheses refer to references listed in section 31.16(3); Numbers in parentheses refer to Table 1 footnotes.								
Temperature Definitions <sup>a</sup> Cold Stream Tier I temperature criteria apply where cutthroat trout and brook trout are expected to occur. <sup>b</sup> Cold Stream Tier II temperature criteria apply where cold-water aquatic species, excluding cutthroat trout or brook trout, are expected to occur. <sup>c</sup> Large Cold Lakes temperature criteria apply to lakes and reservoirs with a surface area equal to or greater than 100 acres surface area. <sup>d</sup> Warm Stream Tier I temperature criteria apply where common shiner, johnny darter, or orangethroat darter, or stonecat are expected to occur. <sup>e</sup> Warm Stream Tier II temperature criteria apply where brook stickleback, central stoneroller, creek chub, finescale dace, longnose dace, mountain sucker, northern redbelly dace, razorback sucker, or white sucker are expected occur, and none of the more thermally sensitive species in Tier I are expected to occur. <sup>f</sup> Warm Stream Tier III temperature criteria apply where warm-water aquatic species are expected to occur, and none of the more thermally sensitive species in Tiers I and II are expected to occur. <sup>g</sup> Mountain whitefish-based summer temperature criteria [16.9 (ch), 21.2 (ac)] apply when and where spawning and sensitive early life stages of this species are known to occur. <sup>h</sup> Lake trout-based summer temperature criteria [16.6 (ch), 22.4 (ac)] apply where appropriate and necessary to protect lake trout from thermal impacts.								

**Table I – Footnotes**

- (1) Standards for dissolved oxygen are minima, unless specified otherwise. For the purposes of permitting, dissolved oxygen may be modeled for average conditions of temperature and flow for the worst case time period. Where dissolved oxygen levels less than these levels occur naturally, a discharge shall not cause a further reduction in dissolved oxygen in receiving water. (For lakes, also see footnote 9.)
- (2) A 7.0 mg/liter standard (minimum), during periods of spawning of cold water fish, shall be set on a case by case basis as defined in the NPDES or CDPS permit for those dischargers whose effluent would affect fish spawning.
- (3) The pH standards of 6.5 (or 5.0) and 9.0 are an instantaneous minimum and maximum, respectively to be applied as effluent limits. In determining instream attainment of water quality standards for pH, appropriate averaging periods may be applied, provided that beneficial uses will be fully protected.
- (4) Suspended solid levels will be controlled by Effluent Limitation Regulations, Basic Standards, and Best Management Practices (BMPs).
- (5) Temperature shall maintain a normal pattern of diel and seasonal fluctuations and spatial diversity with no abrupt changes and shall have no increase in temperature of a magnitude, rate, and duration deleterious to the resident aquatic life. These criteria shall not be interpreted or applied in a manner inconsistent with section 25-8-104, C.R.S.
  - a. The MWAT of a waterbody shall not exceed the chronic temperature criterion more frequently than one event in three years on average.
  - b. The DM of a waterbody shall not exceed the acute temperature criterion more frequently than one event in three years on average.
  - c. The following shall not be considered an exceedance of the criteria:
    - i. Air temperature excursion: ambient water temperature may exceed the criteria in Table 1 or the applicable site-specific standard when the daily maximum air temperature exceeds the 90th percentile value of the monthly maximum air temperatures calculated using at least 10 years of air temperature data.
    - ii. Low-flow excursion: ambient water temperature may exceed the criteria in Table 1 or the applicable site-specific standard when the daily stream flow falls below the acute critical low flow or monthly average stream flow falls below the chronic critical low flow, calculated pursuant to Regulation 31.9(1)
    - iii. Winter shoulder-season excursion: For the purposes of assessment, ambient water temperatures in cold streams may exceed the winter criteria in Table 1 or applicable site-specific winter standard for 30-days before the winter/summer transition, and 30-days after the summer/winter transition, provided that the natural seasonal progression of temperature is maintained and that temperature exceedances during these periods are not the result of anthropogenic activities in the watershed.
- (6) Deleted

- (7) *E.coli* criteria and resulting standards for individual water segments, are established as indicators of the potential presence of pathogenic organisms. Standards for *E. coli* are expressed as a two-month geometric mean. Site-specific or seasonal standards are also two-month geometric means unless otherwise specified.
- (8) Deleted
- (9) The dissolved oxygen standard applies to lakes and reservoirs as follows.
- a. Recreation: In the upper portion of a lake or reservoir, dissolved oxygen shall not be less than the criteria in Table 1 or the applicable site-specific standard. In the lower portion of a lake or reservoir, dissolved oxygen may be less than the applicable standard except where a site-specific standard has been adopted. A site-specific dissolved oxygen standard will be established for the lower portion of a lake or reservoir where there is evidence that primary contact occurs within the lower portion.
  - b. Agriculture: In the upper portion of a lake or reservoir, dissolved oxygen shall not be less than the criteria in Table 1 or the applicable site-specific standard. In the lower portion of a lake or reservoir, dissolved oxygen may be less than the applicable standard except where a site-specific standard has been adopted. A site-specific dissolved oxygen standard will be established for the lower portion of a lake or reservoir where there is evidence that livestock watering or irrigation water is pumped from the lower portion.
  - c. Aquatic Life: In the upper portion of a lake or reservoir, dissolved oxygen shall not be less than the criteria in Table I or the applicable site-specific standard. In the lower portion of a lake or reservoir, dissolved oxygen may be less than the applicable standard as long as there is adequate refuge. Adequate refuge means that there is concurrent attainment of the applicable Table I temperature and dissolved oxygen criteria. A site-specific dissolved oxygen standard will be established for the lower portion of a lake or reservoir where the expected aquatic community has habitat requirements within the lower portion.
    - i. Fall turnover exclusion: Dissolved oxygen may drop 1 mg/l below the criteria in Table 1 in the upper portion of a lake or reservoir for up to seven consecutive days during fall turnover provided that profile measurements are taken at a consistent location within the lake or reservoir 7-days before, and 7-days after the profile with low dissolved oxygen. The profile measurements taken before and after the profile with low dissolved oxygen must attain the criteria in Table 1 in the upper portion of the lake or reservoir. The fall turnover exclusion does not apply to lakes or reservoirs with fish species that spawn in the fall unless there are data to show that adequate dissolved oxygen is maintained in all spawning areas, for the entire duration of fall turnover.
  - d. Water Supply: The dissolved oxygen criteria is intended to apply to the epilimnion and metalimnion strata of lakes and reservoirs. Dissolved oxygen in the hypolimnion may, due to the natural conditions, be less than the table criteria. No reductions in dissolved oxygen levels due to controllable sources is allowed.

TABLE II - INORGANIC PARAMETERS

TABLE II INORGANIC PARAMETERS								
PARAMETER	AQUATIC LIFE				AGRICULTURE	DOMESTIC WATER SUPPLY		
	CLASS 1 Cold Water Biota		CLASS 1 Warm Water Biota		CLASS 2			
<b>INORGANICS:</b>								
Ammonia (mg/l as N) Total	chronic = elsp or elsa <sup>(1)</sup> acute = sp <sup>(1)</sup> (N)		chronic = Apr 1-Aug 31=elsp <sup>(1)</sup> Sept 1-Mar 29=elsa <sup>(1)</sup> acute = sa <sup>(1)</sup> (N)		Class 2 Cold/Warm have the same standards as Class 1 Cold/Warm (N)			
Total residual Chlorine (mg/l)	0.019 (L) (1-day)	0.011 (L) (30-day)	0.019 (L) (1-day)	0.011 (L) (30-day)	0.019 (L) (1-day)	0.011 (L) (30-day)		
Cyanide - Free (mg/l)	0.005(H) (1-day)		0.005(H) (1-day)		0.005(H) (1-day)		0.2(G) (1-day)	
Fluoride (mg/l)							2.0 <sup>(3)</sup> (E) (1-day)	
Nitrate (mg/l as N)					100 <sup>(2)</sup> (B)		10 <sup>(4)</sup> (K) (1-day)	
Nitrite (mg/l as N)	TO BE ESTABLISHED ON A CASE BY CASE BASIS <sup>(3)</sup>				A CASE BY CASE BASIS <sup>(3)</sup>		10 <sup>(2)</sup> (B) (1-day)	1.0(2) <sup>(4)</sup> (K) (1-day)
Sulfide as H <sub>2</sub> S (mg/l)	0.002 undissociated(A) (30-day)		0.002 undissociated(A) (30-day)		0.002 undissociated(A) (30-day)		0.05(F) (30-day)	
Boron (mg/l)							0.75(A,B) (30-day)	
Chloride (mg/l)							250(F) (30-day)	
Sulfate (mg/l)							250(F) (30-day)	
Asbestos							7,000,000 fibers/L <sup>(5)</sup>	

NOTE: Capital letters in parentheses refer to references listed 31.16(3); numbers in parentheses refer to table II footnotes.

**Table II – Footnotes**

(1)

Chronic:

For Fish Early Life Stage Present (elsp):

$$chronic\ elsp = \left( \frac{0.0577}{1 + 10^{7.688 - pH}} + \frac{2.487}{1 + 10^{pH - 7.688}} \right) * MIN \left( 2.85, 1.45 * 10^{0.028(25 - T)} \right)$$

For Fish Early Life Stage Absent (elsa):

$$chronic\ elsa = \left( \frac{0.0577}{1 + 10^{7.688 - pH}} + \frac{2.487}{1 + 10^{pH - 7.688}} \right) * 1.45 * 10^{0.028 * (25 - MAX(T, 7))}$$

Acute:

For salmonids present (sp):

$$acute\ sp = \frac{0.275}{1 + 10^{7.204 - pH}} + \frac{39.0}{1 + 10^{pH - 7.204}}$$

For salmonids absent (sa):

$$acute\ sa = \frac{0.411}{1 + 10^{7.204 - pH}} + \frac{58.4}{1 + 10^{pH - 7.204}}$$

(2) In order to provide a reasonable margin of safety to allow for unusual situations such as extremely high water ingestion or nitrite formation in slurries, the NO<sub>3</sub>-N plus NO<sub>2</sub>-N content in drinking waters for livestock and poultry should be limited to 100ppm or less, and the NO<sub>2</sub>-N content alone be limited to 10ppm or less.

(3) Salmonids and other sensitive fish species present:

$$Acute = 0.10 (0.59 * [Cl^-] + 3.90) \text{ mg/l NO}_2\text{-N}$$

$$Chronic = 0.10 (0.29 * [Cl^-] + 0.53) \text{ mg/l NO}_2\text{-N}$$

(upper limit for Cl<sup>-</sup> = 40 mg/l)

Salmonids and other sensitive fish species absent:

$$Acute = 0.20 (2.00 * [Cl^-] + 0.73) \text{ mg/l NO}_2\text{-N}$$

$$Chronic = 0.10 (2.00 * [Cl^-] + 0.73) \text{ mg/l NO}_2\text{-N}$$

[Cl<sup>-</sup>] = Chloride ion concentration

(upper limit for Cl<sup>-</sup> = 22 mg/l)

- (4) The nitrate limit shall be calculated to meet the relevant standard in accordance with the provisions of Section 31.10 of this regulation, unless (this subsection 4 is repealed effective 12/31/2022):
- a. The permittee provides documentation that a reasonable level of inquiry demonstrates that there is no actual domestic water supply use of the waters in question or of hydrologically connected ~~ground water~~groundwater, or
  - b. The combined total of nitrate plus nitrite at the point of intake to the domestic water supply will not exceed 10 mg/l as demonstrated through modeling or other scientifically supportable analysis
- (5) Asbestos standard applies to fibers 10 micrometers or longer.

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**31.57 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE; APRIL 13, 2020 RULEMAKING; FINAL ACTION MAY 11, 2020; EFFECTIVE DATE JUNE 30, 2020**

The provisions of C.R.S. 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402; provide the specific statutory authority for adoption of these regulatory amendments. The commission also adopted, in compliance with 24-4-103(4) C.R.S., the following statement of basis and purpose.

**BASIS AND PURPOSE**

In this rulemaking the commission considered revisions to criteria and revisions to division point of compliance provisions. The commission adopted changes as detailed below.

**I. Statewide Standards - Interim Organic Pollutant Standards**

The commission adopted revised and new organic chemical standards in section 31.11. In an effort to keep surface water and groundwater organic chemical standards consistent, the changes to section 31.11 were also adopted for the statewide groundwater organic chemical standards in Regulation No. 41 (41.5(C)(3)).

In adopting these new and revised organic chemical standards, the commission continued to rely on its past policy decisions and precedence documented in Commission Policy 96-2. Additionally, as per Departmental policy, the commission has relied on the United States Environmental Protection Agency's (EPA) Integrated Risk Information System (IRIS) as its first tier source of toxicological data. Review of the IRIS data that had been updated since the last revisions to 31.11 indicated adoption of standards for four new chemicals (hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), CAS 121-82-4; 1,2,3-trimethylbenzene, CAS 526-73-8; 1,2,4-trimethylbenzene, CAS 95-63-6; and 1,3,5-trimethylbenzene, CAS 108-67-8) were necessary. Additionally, the water quality standard for benzo[a]pyrene (BaP), CAS 50-32-8 and related chemicals [benzo(a) anthracene, CAS 56-55-3; benzo(b) fluoranthene, CAS 205-99-2; benzo(k) fluoranthene, CAS 207-08-9; chrysene, CAS 218-01-9; dibenzo(a,h) anthracene, CAS 53-70-3; and indeno(1,2,3-cd) pyrene, CAS 193-39-5, needed to be revised. Additional details regarding aspects of these standards revisions are provided below.

**A. Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), CAS 121-82-4**

RDX is characterized in IRIS with the cancer descriptor "Suggestive evidence of carcinogenic potential" per EPA 2005 guidelines. This designation is comparable to the cancer group designation of "C – Possible human carcinogen" from the 1986 EPA

guidelines. As such, in accordance with previous commission precedence, the commission adopted a water supply standard for RDX based on the non-cancer toxicity value and using the non-cancer equations and default exposure assumptions from Policy 96-2 in combination with the reference dose (RfD) of 0.004 mg/kg-day from IRIS, and applying an additional uncertainty factor of 10 to account for the additional uncertainty. The resulting standard (2.8 µg/L) is considered to be appropriately protective because, even if applying a cancer-based approach, this standard would result in an incremental lifetime cancer risk factor of  $6 \times 10^{-6}$ , which is of the same order of magnitude as the risk factor, which has been considered to be the appropriate level risk by the commission in past determinations ( $1 \times 10^{-6}$ ). There are no EPA human health ambient water quality criteria (HHAWQC) available for RDX, which would help inform development of Water +Fish and Fish Ingestion standards for RDX. Furthermore, based on available physical and chemical data available for RDX, this chemical is not likely to bioaccumulate. Therefore, the commission did not adopt Water+Fish or Fish Ingestion standards for RDX at this time.

### **B. Trimethylbenzenes**

The commission adopted new water supply standards for 1,2,3-trimethylbenzene, CAS 526-73-8; 1,2,4-trimethylbenzene, CAS 95-63-6; and 1,3,5-trimethylbenzene, CAS 108-67-8, calculated using the non-cancer equations and default exposure assumptions from Policy 96-2 in combination with the RfD of 0.01 mg/kg-day from IRIS. The commission did not adopt Water+Fish or Fish Ingestion standards for these trimethylbenzenes because there are no EPA HHAWQC available for these chemicals. Furthermore, as documented in the 2016 IRIS assessment for these chemicals, the estimated bioconcentration factors (133–439) and high volatility of trimethylbenzenes suggest that bioaccumulation of these chemicals will not be significant.

### **C. Benzo[a]pyrene (BaP), CAS 50-32-8 and related chemicals**

The commission adopted revised Water Supply, Water + Fish, and Fish Ingestion standards for BaP based on updates to the EPA IRIS assessment. In addition to an updated cancer slope factor, the updated assessment, identified BaP as a mutagen. Therefore, the standards adopted by the commission were calculated using age dependent factors, following EPA 2005 guidance on calculating water quality standards for mutagenic compounds in combinations with default exposure assumptions from Policy 96-2, the oral cancer slope factor of 1 per mg/kg-day from IRIS, and a bioaccumulation factor of 3900 L/kg from EPA's human health ambient water quality criteria. Previously, water quality standards of several related polyaromatic hydrocarbons (PAHs) [benzo(a) anthracene, benzo(b) fluoranthene, benzo(k) fluoranthene, chrysene, dibenzo(a,h) anthracene, and indeno(1,2,3-cd) pyrene] were set equal to those for BaP; therefore, the Water Supply, Water + Fish, and Fish Ingestion standards for these PAHs were also revised. The commission adopted revised standards for these PAHs by applying the estimated order of potential potency (EOPP) factor, for each chemical relative to BaP, presented in EPA's 1993 Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. In this approach, the potencies of other PAHs relative to benzo(a)pyrene are determined. These EOPP factors were applied using the revised cancer slope factor for BaP from IRIS and using age dependent factors appropriate for use with mutagenic chemicals. Treatment of the related PAHs as mutagens, based on that determination for BaP, is consistent with the approach described in EPA's 1993 guidance. Footnote 13 was added to indicate that BaP and related PAH standards were calculated as mutagens. In 2010 EPA provided a draft of updated guidance, which applied new relative potency factors (RPFs). However, since the guidance was never finalized, the new RPFs are widely not used throughout EPA risk assessment framework, and are thus not used for the derivation of the revised water quality standards.

Previous to revision, the Water Supply standard for BaP was adopted by the commission as a hybrid standard that ranged from the concentration protective of human-health to the drinking water maximum contaminant level (MCL). The hybrid standard approach was adopted in the 2004 rulemaking in response to ongoing debate dating back to 1989 about whether standards for parameters with MCLs should be based on the MCLs or purely health-based numbers. The arguments for MCLs focused on whether it is reasonable to require surface water remediation to a level below that required for drinking water. The arguments for health-based standards focused on maximizing human-health protection, putting the clean-up burden on pollution sources, and protection of surface water as a resource. In response, the commission adopted a hybrid proposal (maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur (MCLG)/MCL) that provides much of the benefits advocated for each of the above options. This hybrid approach had the intention to allow for existing contamination to be addressed at levels that are deemed safe for drinking water sources, but allows for the protection of surface water as a resource by implementing a more protective human-health health based standard for future contamination.

In practice, hybrid standards have largely resulted in discharge permits with effluent limits based solely on the MCL. Additionally, there are more appropriate alternative regulatory pathways, such as variances, through which dischargers can seek regulatory relief. Furthermore, recent litigation in Idaho has resulted from adopting water quality standards that are not fully protective of the beneficial uses. In May 2016, EPA entered into a consent decree with Northwest Environmental Advocates to reconsider EPA's 2010 approval of Idaho's human health criteria for arsenic, which were based on the MCL in drinking water. In September 2016, EPA disapproved Idaho's MCL-based criteria, citing that the criteria "are not protective of Idaho's designated uses, including primary and secondary contact recreation and domestic water supply". EPA also noted that there are significant differences between the allowable factors for developing MCLs and water quality criteria to protect designated uses under CWA section 303(c). EPA points out that MCLs are in some cases based on feasibility considerations, including the availability of technology to achieve the regulatory level and the cost of such treatment. In other cases MCLs are based on concentrations that can be measured reliably - in good laboratories - rather than concentrations expected to be protective of human health. In contrast, water quality criteria in water quality standards must be based on a sound scientific rationale and protect the designated use, and not on available treatment technology, costs, or other feasibility considerations. In addition, water quality standards regulations at 40 CFR 131.11 (a)(1) are explicit that States must adopt water quality criteria that protect designated uses."

For BaP, the Colorado Hazardous Materials and Waste Management Division currently uses the risk-based water quality standard to derive the groundwater protection level for BaP. Furthermore, the MCL for BaP is 0.2 µg/L; the incremental lifetime cancer risk factor resulting from this concentration would be  $1.5 \times 10^{-5}$ , which is more than an order of magnitude greater than the risk factor that has been considered to be the appropriate level risk by the commission in past determinations ( $1 \times 10^{-6}$ ). Therefore, the commission adopted a risk-based water supply standard for BaP that is protective of human-health.

## II. Change of Ground Water to Groundwater

The commission adopted a change from we "ground water" to "groundwater". This change is consistent with common technical usage and usage in the Water Quality Control Act. This change is part of a broad initiative to change the spelling program-wide, and to increase consistency.

## III. House Keeping

The commission added clarification to a number of items and corrected minor typographical errors:

- Alignment of footnote assignments for the following organic chemical standards between Regulations 31 and 41: biphenyl; carbofuran; 1,2 dibromo-3-chloropropane (DBCP); dibromoethane 1,2; dichloromethane (methylene chloride); dioxane 1,4; hexachloroethane; tetrachloroethane 1,1,2,2; tetrachloroethylene (PCE); and trihalomethanes.
- Corrected the spelling of chlorpyrifos
- Corrected the spelling of trichloroacetic acid
- Corrected the spelling of chloronaphthalene
- Changed the order of appearance for a number of organic chemicals in the organic table, to better align with Regulation 41 and display the correct alphabetical order: dalapon; di(2-ethylhexyl)adipate; dinitro-o-cresol 4,6; and N-Nitrosodi-n-propylamine
- Added a synonym reference for chlorodibromomethane and dibromochloromethane to better align in Regulations 31 and 41.

## DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

### Water Quality Control Commission

## REGULATION NO. 41 - THE BASIC STANDARDS FOR ~~GROUND-WATER~~GROUNDWATER

### 5 CCR 1002-41

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#### 41.1 AUTHORITY

These regulations are promulgated pursuant to the Colorado Water Quality Control Act, sections 25-8-101 through 25-8-703 C.R.S., (1982 and 1985 Supp.). In particular, they are promulgated under the following sections 25-8-202, 25-8-203, and 25-8-204.

#### 41.2 PURPOSE

The purpose of these regulations is to establish statewide standards and a system for classifying ~~ground water~~groundwater and adopting water quality standards for such classifications to protect existing and potential beneficial uses of ~~ground-water~~groundwaters.

#### 41.3 DEFINITIONS

The following definitions are applicable to these regulations.

1. "Activity" is any operation that may discharge or cause a discharge of pollutants to ~~ground water~~groundwaters including but not limited to, point source discharges, pits, ponds, and lagoons used for storage, treatment and/or disposal of pollutants, land application of wastewater, and non-point source discharges. Activity shall not include related operations, no matter how closely integrated physically or legally.
2. "Agricultural Uses" are the existing or potential future uses of ~~ground-water~~groundwater for the cultivation of soil, the production of crops, and/or the raising of livestock.
3. "Background Level" is the level of any parameter in the ~~ground-water~~groundwater within a specified area as determined by representative measurements of the ~~ground-water~~groundwater quality unaffected by the activity.
4. "Contamination" is that condition where the concentration level of a pollutant exceeds naturally occurring background levels.
5. "Domestic Uses" are those existing or potential future uses of ~~ground-water~~groundwater for household or family use, including, but not limited to: drinking, gardening, municipal, and/or farmstead uses.
6. "Existing Activity" means any activity whose plans and specifications have been approved by the Division, or which has commenced or completed construction, prior to the effective date of the 1990 amendments to this regulation.
7. "Ground~~w~~-Water" are subsurface waters in a zone of saturation which are or can be brought to the surface of the ground or to surface waters through wells, springs, seeps or other discharge areas.

8. "New Activity" means any activity that does not qualify as an existing activity.
9. "Parameter" is the physical, chemical, biological, or radiological constituent or characteristic of the ~~ground-water~~groundwater such as; temperature, pH, and ~~ground-water~~groundwater level.
10. "Point Of Compliance" means a vertical surface that is located at some specified distance hydrologically downgradient of the activity being monitored for compliance; provided that the Commission may establish a point of compliance other than a vertical surface on a site-specific basis pursuant to section 41.6 (E).
11. "Site Boundary" means the outermost perimeter of the property or lease boundary of a facility for which the owner and/or operator has control.
12. "Specified Area" is that area within which the ~~ground-water~~groundwater is classified.
13. "Standard" is a narrative and/or numeric restriction established by these regulations and applied to ~~ground-water~~groundwaters to protect one or more existing or potential future uses.
14. "TDS" is the total dissolved solids in water.

#### 41.4 CLASSIFICATION OF ~~GROUND-WATER~~GROUNDWATERS

##### A. ~~Groundw~~-Water Classifications

The Commission hereby establishes the following classifications for ~~ground-water~~groundwater:

1. Domestic Use - Quality
2. Agricultural Use - Quality
3. Surface Water Quality Protection
4. Potentially Usable Quality
5. Limited Use and Quality

##### B. Criteria Used to Identify Classifications for ~~Groundw~~-Water

The ~~ground-water~~groundwater classifications shall be implemented and applied to ~~ground water~~groundwaters within a specified area (as determined in accordance with section 41.4(c) based upon use, quality and other information demonstrating the following:

1. ~~Ground-water~~Groundwater within a specified area shall be classified "Domestic Use - Quality" when:
  - a. ~~Ground-water~~Groundwater is used for domestic use within the specified area; or
  - b. If ~~ground-water~~groundwater is not currently used for domestic use within the specified area, the available information, including information regarding background levels, demonstrates that future domestic use of water within the specified area is reasonably probable; or
  - c. The most recent State Engineer's well records or applicable water court decrees reveal that ~~ground-water~~groundwater is permitted or decreed for domestic use within the

specified area, unless other information demonstrates that domestic use is not being made of the ~~ground water~~groundwater and is not likely to be made; or

- d. The background levels are generally adequate to assure compliance with the Human Health Standards listed in Table 1 and TDS levels are less than 10,000 mg/l.

The determination of whether or not background levels are generally adequate shall be made considering the number of parameters that meet or exceed table Values, the extent of any exceedances of table Values, the risk to the public health associated with any such exceedance, and the adequacy of the database available for such determinations.

- 2. ~~Ground water~~Groundwater within a specified area shall be classified "Agricultural Use - Quality" when:

- a. ~~Ground water~~Groundwater is used for agricultural use within the specified area; or

- b. If ~~ground water~~groundwater is not used for agricultural use within the specified area, the available information, including information regarding background levels, demonstrates that future agricultural use of water within the specified area is reasonably probable; or

- c. The most recent State Engineer's well records or applicable water court decrees reveal that ~~ground water~~groundwater is permitted or decreed for agricultural use within the specified area, unless other information demonstrates that agricultural use is not being made of the ~~ground water~~groundwater and is not likely to be made; or

- d. The background levels are generally adequate to assure compliance with the Agricultural Standards listed in Table 3 and TDS levels are less than 10,000 mg/l.

The determination of whether or not background levels are generally adequate shall be made considering the number of parameters that meet or exceed table values, the extent of any exceedances of table values, the risk to crops and/or livestock associated with any such exceedance, and the adequacy of the database available for such determinations.

- 3. ~~Ground water~~Groundwater within a specified area shall be classified "Surface Water Quality Protection" when:

A proposed or existing activity does or will impact ~~ground water~~groundwaters such that water quality standards of classified surface water bodies within the specified area will be exceeded.

- 4. ~~Ground water~~Groundwater within a specified area shall be classified "Potentially Usable Quality" when:

- a. TDS levels are less than 10,000 mg/l; and

- b. ~~Ground water~~Groundwater is not used for domestic or agricultural uses within the specified area; and

- c. Background levels are generally not adequate to assure compliance with the Human Health and Agricultural Standards listed in Tables 1 and 3, or the information is insufficient to make such a determination; and

- d. Domestic or agricultural use of the ~~ground water~~groundwater can be reasonably expected in the future, considering background levels of water quality; geologic and hydrologic conditions; the degree to which any particular types of pollutants present are subject to treatment; the economic reasonableness of such treatment; the impact of

treatment requirements on water quantity; whether or not pollution arises from natural sources; and other relevant factors.

5. ~~Ground water~~Groundwater within a specified area shall be classified “Limited Use and Quality” when:
  - a. TDS levels are equal to or in excess of 10,000 mg/l; or
  - b. The ~~ground water~~groundwater has been exempted under Rule 324(B) of the “Rules and Regulations, Rules of Practice and Procedure” (2 CCR 404-1) of the Oil and Gas Conservation Commission, pursuant to the Colorado Oil and Gas Conservation Act, Title 60, Article 34, C.R.S. (1982); or
  - c. The criteria specified in sections 41.4(B)1, 2, 3, or 4 are not met.

### C. Specified Area

1. When an activity exists or is proposed, the shape, depth, boundaries, and extent of a specified area shall be determined by considering:
  - a. the presence, extent, and nature of existing uses of ~~ground water~~groundwater that may be affected by the activity, and the nature of reasonably expected future uses of ~~ground water~~groundwater that may be affected by the activity; and
  - b. the nature and location of the activity and of its discharge; and
  - c. existing ~~ground water~~groundwater quality that may be affected by the activity; and
  - d. relevant geologic and hydrogeologic conditions, including but not limited to the presence of ~~ground water~~groundwater hydrologically connected to surface waters and recharge areas.
2. In the absence of an existing or proposed activity, the shape, depth, boundaries, and extent of a specified area may be determined by considering:
  - a. the presence, extent, and nature of existing uses of ~~ground water~~groundwater and the nature of reasonably expected future uses of ~~ground water~~groundwater; and
  - b. existing ~~ground water~~groundwater quality; and
  - c. relevant geologic and hydrogeologic conditions, including but not limited to the presence of ~~ground water~~groundwater hydrologically connected to surface waters and recharge areas.

### 41.5 ~~GROUND WATER~~GROUNDWATER QUALITY STANDARDS

The water quality standards specified in subsection B below are deemed necessary and appropriate to protect ~~ground water~~groundwater uses as specified in section 41.4, and shall be adopted to protect such classified uses. The standards specified in subsections A and C apply to all State ~~ground water~~groundwaters, unless alternative site-specific standards have been adopted for a specified area pursuant to subsection D below.

#### A. Narrative Standards

1. ~~Ground Water~~Groundwater shall be free from pollutants not listed in the tables referred to in section 41.5(B), which alone or in combination with other substances, are in concentrations shown to be:
  - a. Carcinogenic, mutagenic, teratogenic, or toxic to human beings, and/or,
  - b. A danger to the public health, safety, or welfare.
2. Determinations made pursuant to section 41.7 of specific numerical limitations under this subsection shall be based upon the best scientific information currently available.

**B. Numeric Standards**

1. The numeric standards shall be measured as total concentrations unless otherwise specified in Tables 1 through 4.
2. When a ~~ground-water~~groundwater has a multi-use classification, the most restrictive standard for a parameter shall apply.
3. The following numeric standards shall apply:
  - a. "Domestic Use-Quality" - The Human Health and Secondary Drinking Water Standards listed in Tables 1 and 2, respectively, except as specified in section 41.5(B)5 or 41.5(B)(6).
  - b. "Agricultural Use - Quality" - The Agricultural Standards listed in Table 3, except as specified in section 41.5(B)5.
  - c. "Surface Water Quality Protection" - The standards necessary to prevent the exceedance of surface waters standards.
  - d. "Potentially Usable Quality" - appropriate standards considering those factors listed in section 41.4(B)(4)(d).
4. The TDS limitation listed in Table 4 shall apply to the following classes:

"Agricultural Use - Quality"

"Surface Water Quality Protection"

"Potentially Usable Quality"
5. For ~~ground-water~~groundwater classified "Domestic Use - Quality" or "Agricultural Use - Quality," where a table value is exceeded by the background level, the applicable standard for that parameter shall be either 1) the table value or 2) the background level for that parameter. This determination shall be made considering the increased risk to public health, crops, or livestock associated with the background levels, the extent of the exceedance above the table value, the degree to which the pollution is deemed correctable and subject to treatment; and the economic reasonableness of such treatment requirements.
6. The Commission may adopt site-specific standards in lieu of those listed in Tables 1, 2, 3 and 4 taking into account the factors prescribed in Section 25-8-204(4), C.R.S. and section 41.4. The downgrading factors described in Regulation No. 31, section 6(2)(B) of the Basic Standards and

Methodology for Surface Water shall not apply to the establishment of site-specific standards under this subsection.

**C. Statewide Standards**

1. Radioactive materials and Organic pollutants in ~~ground water~~groundwaters shall not exceed the following levels, unless alternative, site-specific standards for these substances have been adopted by the Commission:
  - a. For radioactive materials and organic pollutants listed in subsections 2 and 3 below, levels shall not exceed those specified in those subsections.
  - b. For all other radioactive materials and organic pollutants, they shall be maintained at the lowest practical level.
  - c. Where site-specific standards have been adopted, they shall apply in lieu of the standards set forth in this subsection.
2. Radioactive Materials Standards:

**Radioactive Materials Standards<sup>1</sup>**

<b>Parameter</b>	<b>Standard</b>
Americium <sup>2</sup>	0.15
Cesium 134	80
Plutonium 239 <sup>2</sup> , and 240 <sup>2</sup>	0.15
Radium 226 <sup>2</sup> and 228 <sup>2</sup>	5
Strontium 90 <sup>2</sup>	8
Thorium 230 <sup>2</sup> and 232 <sup>2</sup>	60
Tritium	20,000

pCi/l = Picocuries Per Liter

<sup>1</sup> In site-specific cases, when it has been demonstrated that there are negligible differences between the results of dissolved (filtered) samples and total (unfiltered) samples, then dissolved results may be utilized for implementing the radioactive material standards.

<sup>2</sup> Radionuclide samples for these materials should be analyzed using unfiltered (total) samples.

3. Interim Organic Pollutant Standards:

Note that all standards in table A are being adopted as “interim standards.” These interim standards will remain in effect until alternative permanent standards are adopted by the Commission in revisions to this regulation or site-specific standards determinations. Although fully effective with respect to current regulatory applications, these interim standards shall not be considered final or permanent standards subject to restrictions such as antibacksliding or downgrading.

TABLE A

~~GROUND WATER~~GROUNDWATER ORGANIC CHEMICAL STANDARDS

(in micrograms per liter)

Parameter	CAS No.	STANDARD <sup>1</sup>
Acenaphthene	83-32-9	420
Acetochlor	34256-82-1	140
Acetone	67-64-1	6300
Acrolein	107-02-8	3.5
Acrylamide <sup>C,8</sup>	79-06-1	0.022
Acrylonitrile <sup>C</sup>	107-13-1	0.065
Alachlor	15972-60-8	2.0 <sup>M</sup>
Aldicarb	116-06-3	7.0 <sup>M</sup>
Aldicarb Sulfone	1646-88-4	7.0 <sup>M</sup>
Aldicarb Sulfoxide	1646-87-3	7.0 <sup>M</sup>
Aldrin <sup>C</sup>	309-00-2	0.0021
Aniline <sup>C</sup>	62-53-3	6.1
Anthracene (PAH)	120-12-7	2100
Aramite <sup>C</sup>	140-57-8	1.4
Atrazine	1912-24-9	3.0 <sup>M</sup>
Azobenzene <sup>C</sup>	103-33-3	0.32
Benzene <sup>C,2</sup>	71-43-2	5.0 <sup>M</sup>
Benzidine <sup>C</sup>	92-87-5	0.00015
Benzo(a)anthracene (PAH) <sup>C,8</sup>	56-55-3	<del>0.130-0048</del>
Benzo(a)pyrene (PAH) <sup>C,6,8</sup>	50-32-8	<del>0.0130-0048 to 0.2<sup>M</sup></del>
Benzo(b)fluoranthene (PAH) <sup>C,8</sup>	205-99-2	<del>0.130-0048</del>

TABLE A

~~GROUND WATER~~GROUNDWATER ORGANIC CHEMICAL STANDARDS

(in micrograms per liter)

Parameter	CAS No.	STANDARD <sup>1</sup>
Benzo(k)fluoranthene (PAH) <sup>C, 8</sup>	207-08-9	<del>1.30-0048</del>
Benzotrichloride <sup>C</sup>	98-07-7	0.0027
Benzyl chloride <sup>C</sup>	100-44-7	0.21
Bis(chloromethyl)ether (BCME) <sup>C</sup>	542-88-1	0.00016
Biphenyl <sup>C</sup>	92-52-4	4.4
Bromate <sup>C</sup>	15541-45-4	0.05
Bromobenzene	108-86-1	56
Bromodichloromethane (THM) <sup>C, 7</sup>	75-27-4	0.56
Bromoform (THM) <sup>C, 7</sup>	75-25-2	4
Butyl benzyl phthalate	85-68-7	1,400
Carbofuran <sup>6</sup>	1563-66-2	35 to 40 <sup>M</sup>
Carbon tetrachloride <sup>C, 6</sup>	56-23-5	0.5 to 5 <sup>M</sup>
Chlordane <sup>C, 6</sup>	57-74-9	0.10 to 2 <sup>M</sup>
Chlordecone <sup>C</sup>	143-50-0	.0035
Chlorethyl ether (BIS-2) <sup>C</sup>	111-44-4	0.032
<del>4-Chloro-3-methylphenol</del>	<del>59-50-7</del>	<del>210</del>
Chlorobenzene	108-90-7	100 <sup>M</sup>
Chloroform (THM) <sup>C, 7</sup>	67-66-3	3.5
Chloroisopropyl ether (BIS-2)	108-60-1	280
<del>4-Chloro-3-methylphenol</del>	<del>59-50-7</del>	<del>210</del>
Chloronap <del>h</del> thalene	91-58-7	560
Chlorophenol, 2-	95-57-8	35

TABLE A

~~GROUND WATER~~GROUNDWATER ORGANIC CHEMICAL STANDARDS

(in micrograms per liter)

Parameter	CAS No.	STANDARD <sup>1</sup>
<del>Chlorpyrifos</del> <u>Chlorphrifos</u>	2921-88-2	21
Chrysene (PAH) <sup>C,8</sup>	218-01-9	<del>130.0048</del>
Dalapon	75-99-0	200 <sup>M</sup>
DDD <sup>C</sup>	72-54-8	0.15
DDE <sup>C</sup>	72-55-9	0.1
DDT <sup>C</sup>	50-29-3	0.1
Di(2-ethylhexyl)adipate	103-23-1	400 <sup>M</sup>
Dibenzo(a,h)anthracene (PAH) <sup>C,8</sup>	53-70-3	<del>0.0130.0048</del>
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 <sup>M</sup>
Dibromochloromethane ( <del>chlorodibromomethane</del> ) (THM) <sup>3,7</sup>	124-48-1	14
Dibromoethane 1,2 <sup>C</sup>	106-93-4	0.018
Dicamba	1918-00-9	210
Dichloroacetic acid <sup>C</sup>	79-43-6	0.7
Dichlorobenzene 1,2	95-50-1	600 <sup>M</sup>
Dichlorobenzene 1,3	541-73-1	94
Dichlorobenzene 1,4	106-46-7	75 <sup>M</sup>
<del>Dichlorobenzidine</del> <sup>C</sup>	<del>91-94-1</del>	<del>0.078</del>
Dichloroethane 1,2 <sup>C,6</sup>	107-06-2	0.38 to 5 <sup>M</sup>
Dichloroethylene 1,1	75-35-4	7 <sup>M</sup>
Dichloroethylene 1,2-cis <sup>6</sup>	156-59-2	14 to 70 <sup>M</sup>
Dichloroethylene 1,2-trans <sup>6</sup>	156-60-5	140 or 100 <sup>M</sup>
Dichloromethane (methylene chloride) <sup>C,6,8</sup>	75-09-2	5.6 or 5 <sup>M</sup>

TABLE A

~~GROUND WATER~~GROUNDWATER ORGANIC CHEMICAL STANDARDS

(in micrograms per liter)

Parameter	CAS No.	STANDARD <sup>1</sup>
Dichlorophenol 2,4	120-83-2	21
Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70 <sup>M</sup>
Dichloropropane 1,2 <sup>C, 6</sup>	78-87-5	0.52 to 5 <sup>M</sup>
Dichlorvos <sup>C</sup>	62-73-7	0.12
<del>Diclorobenzidine<sup>C</sup></del>	<del>91-94-1</del>	<del>0.078</del>
Dieldrin <sup>C</sup>	60-57-1	0.002
Diethyl phthalate	84-66-2	5,600
Diisopropylmethylphosphonate (DIMP) <sup>4</sup>	1445-75-6	8
Dimethylphenol 2,4	105-67-9	140
Di-n-butyl phthalate	84-74-2	700
Dinitro-o-cresol 4,6	534-52-1	0.27
Dinitrophenol 2,4	51-28-5	14
Dinitrotoluene 2,4 <sup>C</sup>	121-14-2	0.11
Dinoseb	88-85-7	7 <sup>M</sup>
Dioxane 1,4- <sup>C</sup>	123-91-1	0.35
Dioxin (2,3,7,8 TCDD) <sup>C, 6</sup>	1746-01-6	2.2x10 <sup>-7</sup> to 3.0x10 <sup>-5, M</sup>
Diphenylhydrazine 1,2 <sup>C</sup>	122-66-7	0.044
Diquat <sup>6</sup>	85-00-7	15 to 20 <sup>M</sup>
Endosulfan	115-29-7	42
<del>Endosulfan sulfate</del>	<del>1031-07-8</del>	<del>42</del>
Endosulfan, alpha	959-98-8	42
Endosulfan, beta	33213-65-9	42

TABLE A

~~GROUND WATER~~GROUNDWATER ORGANIC CHEMICAL STANDARDS

(in micrograms per liter)

Parameter	CAS No.	STANDARD <sup>1</sup>
<u>Endosulfan sulfate</u>	<u>1031-07-8</u>	<u>42</u>
Endothall	145-73-3	100 <sup>M</sup>
Endrin	72-20-8	2 <sup>M</sup>
Endrin aldehyde	7421-93-4	2.1
Epichlorohydrin <sup>C</sup>	106-89-8	3.5
Ethylbenzene	100-41-4	700 <sup>M</sup>
Ethylene Dibromide <sup>C, 6</sup> (1,2-dibromoethane)	106-93-4	0.02 to 0.05 <sup>M</sup>
Ethylene glycol monobutyl ether (EGBE) (2-Butoxyethanol)	111-76-2	700
Ethylhexyl phthalate (BIS-2) <sup>C, 6</sup> (DEHP)	117-81-7	2.5 to 6 <sup>M</sup>
Fluoranthene (PAH)	206-44-0	280
Fluorene (PAH)	86-73-7	280
Folpet <sup>C</sup>	133-07-3	10
Furmecyclo <sup>C</sup>	60568-05-0	1.2
Glyphosate	1071-83-6	700 <sup>M</sup>
Heptachlor <sup>C, 6</sup>	76-44-8	0.008 to 0.4 <sup>M</sup>
Heptachlor epoxide <sup>C, 6</sup>	1024-57-3	0.004 to 0.2 <sup>M</sup>
Hexachlorobenzene <sup>C, 6</sup>	118-74-1	0.022 to 1.0 <sup>M</sup>
Hexachlorobutadiene	87-68-3	0.45
Hexachlorocyclohexane, Alpha <sup>C</sup>	319-84-6	0.0056
Hexachlorocyclohexane, Gamma (Lindane)	58-89-9	0.2 <sup>M</sup>
Hexachlorocyclopentadiene <sup>6</sup> <u>50<sup>M</sup>(HCCPD)</u>	77-47-4	42 to 50 <sup>M</sup>

TABLE A

~~GROUND WATER~~GROUNDWATER ORGANIC CHEMICAL STANDARDS

(in micrograms per liter)

Parameter	CAS No.	STANDARD <sup>1</sup>
Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-hcdd) <sup>C</sup>	19408-74-3	5.60E-06
Hexachloroethane <sup>C</sup>	67-72-1	0.88
<del>Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)<sup>3</sup></del>	<del>121-82-4</del>	<del>2.8</del>
Hexanone 2	591-78-6	35
Hydrazine/Hydrazine sulfate <sup>C</sup>	302-01-2	0.012
Indeno (1,2,3-cd) pyrene (PAH) <sup>C,8</sup>	193-39-5	<del>0.130-0048</del>
Isophorone <sup>3</sup>	78-59-1	140
Malathion	121-75-5	140
Methanol	67-56-1	14,000
Methoxychlor <sup>6</sup>	72-43-5	35 to 40 <sup>M</sup>
Methylene bis(N,N'-dimethyl)aniline 4,4' <sup>C</sup>	101-61-1	0.76
Metribuzin	21087-64-9	180
Mirex	2385-85-5	1.4
Naphthalene (PAH)	91-20-3	140
Nitrobenzene	98-95-3	14
Nitrophenol 4	100-02-7	56
Nitrosodimethylamine N <sup>C</sup> (NDMA)	62-75-9	0.00069
<del>Nitrosodiphenylamine N<sup>G</sup></del>	<del>86-30-6</del>	<del>7.1</del>
N-Nitrosodiethanolamine <sup>C</sup>	1116-54-7	0.013
<del>Nitrosodiphenylamine N<sup>C</sup></del>	<del>86-30-6</del>	<del>7.1</del>
N-Nitrosodi-n-propylamine <sup>C</sup>	621-64-7	0.005

TABLE A

**GROUND WATER/GROUNDWATER ORGANIC CHEMICAL STANDARDS****(in micrograms per liter)**

Parameter	CAS No.	STANDARD <sup>1</sup>
N-Nitroso-N-Methylethylamine <sup>C</sup>	10595-95-6	0.0016
Oxamyl (vydate) <sup>6</sup>	23135-22-0	175 to 200 <sup>M</sup>
PCBs <sup>C, 5, 6</sup>	1336-36-3	0.0175 to 0.5 <sup>M</sup>
Pentachlorobenzene	608-93-5	5.6
Pentachlorophenol <sup>C, 6</sup>	87-86-5	0.088 to 1.0 <sup>M</sup>
Perchlorate	7790-98-9	4.9
Phenol	108-95-2	2,100
Picloram	1918-02-1	490
Prometon	1610-18-0	100
Propylene oxide <sup>C</sup>	75-56-9	0.15
Pyrene (PAH)	129-00-0	210
Quinoline <sup>C</sup>	91-22-5	0.012
Simazine	122-34-9	4 <sup>M</sup>
Styrene	100-42-5	100 <sup>M</sup>
Tetrachlorobenzene 1,2,4,5	95-94-3	2.1
Tetrachloroethane 1,1,2,2 <sup>C</sup>	79-34-5	0.18
Tetrachloroethylene (PCE) <sup>C, 6</sup>	127-18-4	17 or 5 <sup>M</sup>
Tetrahydrofuran	109-99-9	6,300
Toluene <sup>6</sup>	108-88-3	560 to 1,000 <sup>M</sup>
Total Trihalomethanes (TTHMs) <sup>7</sup>	N/A	80 <sup>M</sup>
Toxaphene <sup>C, 6</sup>	8001-35-2	0.032 to 3 <sup>M</sup>
<u>Trichloroacetic acid<sup>C</sup></u>	<u>76-03-9</u>	<u>0.52</u>

<p style="text-align: center;"><b>TABLE A</b></p> <p style="text-align: center;"><b><del>GROUND WATER</del>GROUNDWATER ORGANIC CHEMICAL STANDARDS</b></p> <p style="text-align: center;"><b>(in micrograms per liter)</b></p>		
<b>Parameter</b>	<b>CAS No.</b>	<b>STANDARD<sup>1</sup></b>
Trichlorobenzene 1,2,4	120-82-1	70 <sup>M</sup>
<del>Trichloroacetic acid<sup>C</sup></del>	<del>76-03-9</del>	<del>0.52</del>
Trichloroethane 1,1,1 (1,1,1-TCA) <sup>6</sup>	71-55-6	14,000 or 200 <sup>M</sup>
Trichloroethane 1,1,2 <sup>3, 6</sup> (1,1,2-TCA)	79-00-5	2.8 to 5 <sup>M</sup>
Trichloroethylene (TCE)	79-01-6	5 <sup>M</sup>
Trichloropropane 1,2,3 <sup>C,8</sup>	96-18-4	3.7E-4
Trichlorophenol 2,4,5	95-95-4	700
Trichlorophenol 2,4,6 <sup>C</sup>	88-06-2	3.2
Trichlorophenoxypropionic acid (2,4,5-tp) (Silvex)	93-72-1	50 <sup>M</sup>
<del>Trimethylbenzene 1,2,3</del>	<del>526-73-8</del>	<del>7.0</del>
<del>Trimethylbenzene 1,2,4</del>	<del>95-63-6</del>	<del>7.0</del>
<del>Trimethylbenzene 1,3,5</del>	<del>108-67-8</del>	<del>7.0</del>
Vinyl Chloride <sup>C, 6</sup>	75-01-4	0.023 to 2 <sup>M</sup>
Xylenes (total) <sup>6</sup>	1330-20-7	1,400 to 10,000 <sup>M</sup>

**Notes and Abbreviations:**

<sup>1</sup> All standards are chronic or 30-day standards. They are based on information contained in EPA's Integrated Risk Information System (IRIS) and/or EPA lifetime health advisories for drinking water using a 10<sup>-6</sup> incremental risk factor unless otherwise noted.

<sup>2</sup> The standard for Benzene has been established at the MCL (q.v. 41.17)

<sup>3</sup> Standards for Group C compounds that have both published toxicity and carcinogenic risk data are calculated based on toxicity data and then adjusted downward using an uncertainty factor of 10.

<sup>4</sup> The Diisopropylmethylphosphonate (DIMP) standard was adopted in 1993 (q.v. 41.16)

<sup>5</sup> PCBs are a class of chemicals that include aroclors, 1242, 1254, 1221, 1232, 1248, 1260, and 1016, CAS numbers 53469-21-9, 11097-69-1, 11104-28-2, 11141-16-5, 12672-29-6, 11096-82-5, and 12674-11-2 respectively. The human-health criteria apply to total PCBs, i.e. the sum of all congener or all isomer analyses.

<sup>6</sup> Whenever a range of standards is listed and referenced to this footnote, the first number in the range is a strictly health-based value, based on the Commission's established methodology for human health-based standards. The second number in the range is a maximum contaminant level, established under the federal Safe Drinking Water Act has been determined to be an

acceptable level of this chemical in public water supplies, taking treatability and laboratory detection limits into account. The Commission intends that control requirements for this chemical be implemented to attain a level of ambient water quality that is at least equal to the first number in the range except as follows:

- Wherever the Commission has adopted alternative, site-specific standards for the chemical, the site-specific standards shall apply instead of these statewide standards.
- The implementing agency has determined that setting the protection level to the second number in the range is consistent with the current and reasonably anticipated future uses of the groundwater, factoring in site-specific information, such as: existing prohibitions on groundwater use; whether the location is within the boundaries of an existing or reasonably anticipated public water supply; the proximity of the site to existing and reasonably anticipated water wells; whether or not the aquifer can produce water at a rate capable of supporting the anticipated use; or it can be demonstrated that access to groundwater is prohibited, unavailable or present at insufficient quantities for reliable use.

The Commission does not intend the adoption of this range of standards to result in changes to clean-up requirements previously established by an implementing agency, unless such change is mandated by the implementing agency pursuant to its independent statutory authority.

<sup>7</sup> For aquifer storage and recovery facilities, if the source of this chemical in ~~ground-water~~groundwater is potable water provided by a drinking water system with a Colorado PWSID that meets all applicable federal Safe Drinking Water Act and corresponding State requirements at the time that it is utilized for aquifer storage and recovery or artificial recharge, then the separate total trihalomethane standard will apply to the ~~ground-water~~groundwater in question, rather than the individual standards for bromodichloromethane, bromoform, chloroform, and/or dibromochloromethane. For any parameter for which there is a Maximum Containment Level (MCL) established by the Safe Drinking Water Act, as identified in Table A with Footnote "M", the MCL shall apply as the standard for groundwater when potable water is used for ASR or artificial recharge.

<sup>8</sup> Mutagenic compound, age dependent factors were used in calculating standard.

N/A – not applicable

<sup>c</sup> Carcinogens classified by the EPA as A, B1, or B2.

<sup>M</sup> Drinking water MCL.

CAS No. - Chemical Abstracts Service Registry Number

THM - Halomethanes

4. Whenever the practical quantitation limit, or PQL, for a pollutant is higher (less stringent) than a standard listed in subsection 2 or 3 above, the PQL shall be used in regulating specific activities. PQL's may be established by the applicable implementing agency or in consultation with the Water Quality Control Division.
5. Nothing in this regulation shall be interpreted to preclude:
  - a. An agency responsible for implementation of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601, et seq., as amended, from selecting a remedial action and a point of compliance that are more or less stringent than would be achieved by compliance with the statewide numerical standards established in this subsection, or alternative site-specific standards adopted by the Commission, where a determination is made that such a variation is authorized pursuant to the applicable provisions of CERCLA; or
  - b. An agency responsible for implementation of Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901, et seq., as amended, or the Colorado Hazardous Waste Act, C.R.S. 25-15-101, et seq., as amended, from applying background levels or establishing "alternate concentration limits" and a point of compliance that differ from the statewide numerical standards established in this subsection, or alternative site-specific standards adopted by the Commission, for purposes of establishing hazardous waste management or corrective action requirements, where a determination is made that such background levels or alternate concentration limits are authorized by the regulations adopted pursuant to these statutory authorities; or
  - c. An agency responsible for implementation of a storage tank (ST) program, pursuant to C.R.S. 25-18-101 et seq., as amended, from issuing a regulatory determination, including

a point of compliance, that is more or less stringent than would be achieved by compliance with the statewide numerical standards established in this subsection, or alternative site-specific standards adopted by the Commission, where a determination is made that the ~~ground-water~~groundwater quality protection criteria identified in applicable ST regulations are satisfied.

6. Interim Narrative Standard

- a. The "Interim Narrative Standard" in 41.5(C)(6)(b)(i) below is applicable to all ~~ground water~~groundwater, to which standards have not already been assigned in the state, with the exception of those areas where the total dissolved solids (TDS) are equal to or exceed 10,000 mg/l. This standard is applicable independent of and in addition to the statewide standards for radioactive materials and organic pollutants established in this section 41.5.C.
- b.
  - i. Until such time as use classifications and numerical standards are adopted for the ~~ground water~~groundwater on a site-specific basis throughout the state, and subject to the provisions of subsection (ii) below, ground-water quality shall be maintained for each parameter at whichever of the following levels is less restrictive:
    - (A) existing ambient quality as of January 31, 1994, or
    - (B) that quality which meets the most stringent criteria set forth in Tables 1 through 4 of "The Basic Standards for ~~Ground Water~~Groundwater."
  - ii. The interim standard shall not be interpreted or applied as defining or limiting the potential need for remediation of contaminated ~~ground water~~groundwater where remedial requirements are established under state or federal law. It is the Commission's intent that, to the maximum degree technically feasible and economically reasonable, remedial efforts should be directed at cleaning up ~~ground water~~groundwater contaminated by human activities to a degree such that it is usable for all existing and potential beneficial uses; this interim narrative standard is not intended to define when such remediation is or is not feasible. Where contamination already exists, this interim standard is merely intended to assure that conditions are not allowed to deteriorate further pending remedial action. The appropriate level of clean-up to be achieved may be addressed by this Commission in a future classification and standard-setting proceeding, or by other agencies with jurisdiction over remedial actions.
  - iii. In applying this interim narrative standard, the Commission intends that agencies with authority to implement this standard will exercise their best professional judgment as to what constitutes adequate information to determine or estimate existing ambient quality, taking into account the location, sampling date, and quality of all available data. Data generated subsequent to January 31, 1994, shall be presumed to be representative of existing quality as of January 31, 1994, if the available information indicates that there have been no new or increased sources of ~~ground water~~groundwater contamination initiated in the area in question subsequent to that date. If available information is not adequate to otherwise determine or estimate existing ambient quality as of January 31, 1994, such ~~ground water~~groundwater quality for each parameter shall be assumed to be no worse than the most stringent levels provided for in Tables 1 through 4 of "The Basic Standards for ~~Ground Water~~Groundwater," unless the Commission has adopted alternative numerical standards for a given specified area.

**D. Site-specific radioactive materials and organic pollutant standards**

1. In determining whether to adopt site-specific standards to apply in lieu of the statewide standards established in subsection C above, the Commission shall first determine the appropriate ~~ground~~  
~~water~~groundwater classifications within a specified area, in accordance with section 41.4.
2. The Commission shall then determine whether numerical standards other than some or all of the statewide standards established in subsection C above would be more appropriate for protection of the classified uses, taking into account the factors prescribed in section 25-8-204(4), C.R.S. and section 41.4. The downgrading factors described in Regulation No. 31, section 6(2)(B) of the Basic Standards and Methodologies for Surface Water shall not apply to the establishment of site-specific standards under this subsection.

#### 41.6 POINT OF COMPLIANCE

- A. In order to effect compliance with ~~ground-water~~groundwater standards, one or more points of compliance shall be established. The term “point of compliance” shall be assumed to cover situations with one or several points of compliance. An activity shall comply with ~~ground~~  
~~water~~groundwater quality standards established under section 41.5 at the point of compliance. The establishment of a point of compliance shall not be required at the time of classification of any ~~ground-water~~groundwater pursuant to section 41.4. The point of compliance for those activities regulated by an implementing agency is discussed in subsection B of this section. Unless modified by the applicable implementing agency or the Commission, the criteria for establishing a point of compliance for the statewide standards established in section 41.5(C)(2) and (3) are set forth in subsection (C) of this section. For those activities regulated by the Water Quality Control Division through permit or control regulations, the point of compliance shall be established under the provisions of subsection (D) of this section. Nothing in this regulation shall lessen the Division's existing authority to consider these ~~ground-water~~groundwater standards when setting limits for surface water discharges which impact ~~ground-water~~groundwater. The Commission may establish points of compliance in lieu of those established by the Division or this rule, on a case-by-case basis as described in subsection (E).

- B. For the purposes of this subsection, the following agencies are referred to as “implementing agencies”:

The Division of Reclamation, Mining and Safety; the State Engineer; the Oil and Gas Conservation Commission; and the state agencies responsible for activities related to the federal “Resource Conservation and Recovery Act of 1976”, as amended, and related state programs.

Per the provisions of section 25-8-202 C.R.S., implementing agencies shall establish the point of compliance for those activities under their control. The points of compliance established in section 41.6 (C) and (D) of this regulation shall not apply to activities regulated by an implementing agency, unless the Commission has determined after rulemaking that the point of compliance established by the implementing agency is not adequate to satisfy the requirements of section 25-8-202(7). The Commission may then establish, through rulemaking, a site-specific point of compliance which shall supersede any point of compliance established by the implementing agencies.

C. In the absence of a point of compliance established by the Division, and unless modified by the Commission in accordance with section 41.6 (E) or subject to alternative regulatory requirements in accordance with section 41.5 (C)(5), the point of compliance for the statewide standards established in section 41.5 (C)(2) and (3) shall be located as follows.

1. For facilities at which ~~ground-water~~groundwater contamination existed as of September 30, 1989:
  - a. If the contamination is identified and reported to the division or other appropriate implementing agency on or before September 30, 1992, then the point of compliance shall be at whichever of the following locations is closest to the contamination source:
    - i. The site boundary; or
    - ii. The hydrologically downgradient limit of the area in which contamination exists when identified.
  - b. If the contamination is not identified and reported to the division or other appropriate implementing agency on or before September 30, 1992, then the point of compliance shall be at whichever of the following locations is closest to the contamination source:
    - i. The site boundary; or
    - ii. The hydrologically downgradient limit of the area in which contamination exists as of September 30, 1989; or
    - iii. If the location specified in (ii) can not be identified, then at the hydrologically downgradient limit of the area below the activity potentially impacting ~~ground-water~~groundwater quality.
2. For all other facilities, at the hydrologically downgradient limit of the area below the activity potentially impacting ~~ground-water~~groundwater quality.

D. ~~Within a specified area for which ground-water quality classifications have been established and~~ Unless modified by the Commission in a site-specific hearing in accordance with section 41.6 (E), the point of compliance for those activities regulated by the Division through discharge permit regulations or control regulations shall be established by the Water Quality Control Division in accordance with the following criteria.

1. For all new and existing activities that discharge to groundwater the point of compliance will be set ~~as follows: at the end-of-pipe or some distance hydrologically downgradient from the discharge, but no further than the site boundary. The point of compliance shall be set at the distance that provides the highest degree of protection that is technologically and economically feasible, based on an evaluation of the information as may be available regarding the following criteria:~~
  - a. ~~Except for surface water discharges, at some distance hydrologically downgradient from the activity that is causing, or which has the potential to cause, the contamination, based on one of the following criteria, and selecting that distance closest to the activity:~~
    - i. ~~A specified distance, as determined by (b) below; or~~

- ii. ~~The hydrologically downgradient limit of the area in which contamination has been identified; or~~
- iii. ~~The site boundary.~~
- b. ~~In determining a specified distance the division shall take into consideration the following factors;~~
  - a. ~~The hydrologically downgradient limit of the area below the activity potentially impacting groundwater quality;~~
  - ib. The classified use, established by the Commission, for any ~~ground water~~groundwater or surface water which could be impacted by contamination from the activity;
  - cii. The geologic and hydrologic characteristics of the site, such as depth to ~~ground water~~groundwater, ~~ground water~~groundwater flow direction and velocity, soil types, surface water impacts, and climate;
  - diii. The toxicity, mobility, and persistence in the environment of contaminants used or stored at the facility or discharged from the facility;
  - e. ~~The hydraulic capacity of the wastewater treatment system;~~
  - ivf. ~~The location of existing and potential future domestic use wells and e~~Established wellhead protection areas;
  - g. ~~The location of other existing and potential beneficial uses of groundwater;~~
  - h. ~~The treatment system design, including whether monitoring wells are appropriate points of compliance;~~
  - i. ~~The contamination or exceedance of water quality standards the activity has caused or has the potential to cause;~~
  - iv. The potential of the site as an aquifer recharge area; and
  - vik. ~~Data and information related to~~Recommendations submitted by the facility owner or operator, including technical and economic feasibility.
- 2e. For surface water discharges that impact ~~ground water~~groundwater, the point of compliance shall be established in accordance with the provisions of the Colorado Discharge Permit System Regulations, Regulation No. 61 (5 CCR 1002-61).
- ~~2.~~ For any new activity the point of compliance will be set as follows:
  - a. ~~Unless modified by the division as specified in (b) below, the point of compliance will be set at the hydrologically downgradient limit of the area below the activity potentially impacting ground water quality.~~
  - b. ~~The point of compliance determined in (a) above may be modified by the Division on a case by case basis with consideration of the following factors:~~

- ~~i. The classified use, established by the Commission, for any ground water or surface water which could be impacted by contamination from the activity;~~
- ~~ii. The geologic and hydrologic characteristics of the site, such as depth to ground water, ground water flow direction and velocity, soil types, surface water impacts, and climate;~~
- ~~iii. The toxicity, mobility, and persistence in the environment of contaminants used or stored at the facility or discharged from the facility;~~
- ~~iv. Established wellhead protection areas;~~
- ~~v. The potential of the site as an aquifer recharge area; and~~
- ~~vi. Recommendations submitted by the facility owner or operator, including technical and economic feasibility.~~

E. When considering a request to adopt a site-specific point of compliance to apply in lieu of that established in subsection (C) or (D) above:

1. The Commission shall establish a more stringent site-specific point of compliance where determined necessary to protect human health and the environment, taking into account the potential for vertical migration of contamination, the number, quantity, nature, and persistence in the environment of the contaminants present, technological feasibility, economic reasonableness, upgradient levels of contamination, geohydrological data and features, the classified uses established by the Commission for any ~~ground water~~groundwater or surface water which would be impacted by contamination from the activity, and other environmental data or other relevant information as determined by the Commission; or
2. If the Commission determines that a less stringent point of compliance would protect human health and the environment, and the point of compliance established pursuant to subsection (C) or (D) is technologically infeasible or economically unreasonable, it shall establish an alternate site-specific point of compliance, taking into account the potential for vertical migration of contamination, the number, quantity, nature, and persistence in the environment of the contaminants present, technological feasibility, economic reasonableness, upgradient levels of contamination, point of use treatment, geohydrological data and features, the classified uses established by the Commission for any ~~ground water~~groundwater or surface water which would be impacted by contamination from the activity, and other environmental data or other relevant information as determined by the Commission.

#### 41.7 IMPLEMENTATION

- A. Except for sections 41.5(C) and 41.6(A) and (B), these regulations shall not be deemed automatically applicable to any ~~ground water~~groundwaters of the State.
- B. The Commission is responsible for classifying the ~~ground water~~groundwaters of the State and promulgating water quality standards as set forth in sections 25-8-202(1)(a), 25-8-203 and 25-8-204, C.R.S.

The Commission may classify ~~ground water~~groundwaters and promulgate water quality standards in accordance with the provisions of sections 41.4 and 41.5 of the regulations, upon its own motion or upon petition submitted by the division, any other state agency, or any interested

person, including a regulated entity or a person who may be affected by ~~ground water~~groundwater quality.

- C. The determination to accept or deny a petition for consideration under this section, and the scheduling of such petitions for hearing, shall be at the discretion of the Commission, provided, however, that the Commission shall be required to hear any petition for a sitespecific standard or a site-specific point of compliance for radioactive materials and organic pollutant standards submitted pursuant to section 41.5(D). In making such determinations the Commission shall consider the hardship or impact that inaction may have upon the petitioner, other interested persons, and the ~~ground water~~groundwaters of the State; the relative hardships or impacts that may be caused where more than one petition is submitted or is pending; the stage of development of an appropriate data base for decision-making; the Commission's workload and priorities for action; and other relevant factors.
- D. Hearings under this section shall be held in accordance with section 24-4-103, C.R.S. and the Commission's Procedural Regulations.
- E. The Commission may consider a change in classifications or water quality standards based upon substantial new information demonstrating that the current classifications or standards should no longer apply. The determination to accept or deny a petition for consideration under this subsection shall be made in accordance with subsection B, above, provided that no ~~ground water~~groundwaters shall be considered for reclassification or changes in water quality standards more than once in any twelve month period.
- F. The Commission may grant variances from the standards specified in section 41.5 of these regulations on a case-by-case basis considering the factors listed in section 25-8-204(4) C.R.S., and where it is demonstrated by a preponderance of the evidence that a variance from the water quality standards specified in section 41.5 is most appropriate to the protection of the classified uses. The extent and duration of any such variance shall be made on a case-by-case basis.
- G. When the Commission has established statewide standards or classification(s) and standards for ~~ground water~~groundwater in a specified area, those classifications and standards shall be used with respect to the regulation and subsequent enforcement of specific activities by the Commission, the Administration and other State agencies, consistent with applicable law.
- H. When the Commission has not established classification(s) and standards for ~~ground water~~groundwater in a specified area, the Commission recommends the classifications and standards set forth in these regulations as guidance for use by other State agencies in the implementation of ~~ground water~~groundwater protection responsibilities, on a case-by-case basis, consistent with applicable law. This shall not be construed as a delegation by the Commission of its authority to classify ~~ground water~~groundwater and promulgate water quality standards.
- I. Existing discharges of pollutants to ~~ground water~~groundwater shall be deemed "activities" as defined in section 41.3(1), and are not exempt from regulation, unless specific statutory or regulatory provisions require otherwise.

## 41.8 SEVERABILITY

The provisions of these regulations are severable, and if any provisions or the application of the provisions to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of these regulations, shall not be affected thereby.

TABLE 1

<b>TABLE 1</b>	
Domestic Water Supply – Human Health Standards	
Parameter	Standard <sup>1,2</sup>
<b>Biological</b>	
Total Coliforms (30 day average)	2.2 <sup>a</sup> org/100 ml
Total Coliforms (max in 30 days)	23org/100 ml
<b>Inorganic</b>	
Antimony (Sb) <sup>d, M</sup>	0.006mg/l
Asbestos <sup>M</sup>	7,000,000fibers/Liter
Arsenic (As) <sup>d, M</sup>	0.01mg/l
Barium (Ba) <sup>d, M</sup>	2.0mg/l
Beryllium (Be) <sup>d, M</sup>	0.004mg/l
Cadmium (Cd) <sup>d, M</sup>	0.005mg/l
Chromium (Cr) <sup>c, d, M</sup>	0.1mg/l
Cyanide [Free] (CN) <sup>M</sup>	0.2mg/l
Fluoride (F) <sup>d, M</sup>	4.0mg/l
Lead (Pb) <sup>d</sup>	0.05mg/l
Mercury (inorganic) (Hg) <sup>d, M</sup>	0.002mg/l
Molybdenum (Mo) <sup>d</sup>	0.21 mg/l
Nickel (Ni) <sup>d</sup>	0.1mg/l
Nitrate (NO <sub>3</sub> ) <sup>d, M</sup>	10.0mg/l as N
Nitrite (NO <sub>2</sub> ) <sup>d, M</sup>	1.0mg/l as N
Total Nitrate+Nitrite (NO <sub>2</sub> +NO <sub>3</sub> -N) <sup>d, f</sup>	10.0mg/l as N
Selenium (Se) <sup>d, M</sup>	0.05mg/l
Silver (Ag) <sup>d</sup>	0.05mg/l
Thallium (Tl) <sup>d, M</sup>	0.002mg/l
Uranium (U) <sup>d, 23</sup>	0.0168 to 0.03 <sup>M</sup> mg/l
<b>Radiological<sup>b, d</sup></b>	
Gross Alpha Particle Activity <sup>i, M</sup>	15pCi/l
Beta and Photon Emitters <sup>e</sup>	4mrem/year

**TABLE 2 Domestic Water Supply – Drinking Water Standards**

Parameter	Standard <sup>2</sup>
Chlorophenol	0.0002 mg/l
Chloride (Cl)- <del>d</del>	250 mg/l
Color	15 color units
Copper (Cu)- <del>d</del>	1 mg/l
Corrosivity	Noncorrosive
Foaming Agents	0.5 mg/l
Iron (Fe) <sup>d</sup>	0.3 mg/l
Manganese (Mn) <sup>d</sup>	0.05 mg/l
Odor	3 threshold odor numbers
pH	6.5 - 8.5
Phenol	0.3 mg/l
Sulfate (SO <sub>4</sub> )- <del>d</del>	250 mg/l
Zinc (Zn)- <del>d</del>	5 mg/l

**Table 3 Agricultural Standards**

Parameter	Standard <sup>2</sup>
Aluminum (Al) <sup>d, f</sup>	5 mg/l
Arsenic (As)- <del>d</del>	0.1 mg/l
Beryllium (Be)- <del>d</del>	0.1 mg/l
Boron (B)- <del>d, g</del>	0.75 mg/l
Cadmium (Cd)- <del>d</del>	0.01 mg/l
Chromium (Cr)- <del>d</del>	0.1 mg/l
Cobalt (Co) <sup>d</sup>	0.05 mg/l
Copper (Cu)- <del>d</del>	0.2 mg/l
Fluoride (F) <sup>d</sup>	2 mg/l
Iron (Fe) <sup>d</sup>	5 mg/l
Lead (Pb) <sup>d, f</sup>	0.1 mg/l
Lithium (Li) <sup>d, h</sup>	2.5 mg/l
Manganese (Mn) <sup>d, j</sup>	0.2 mg/l
Mercury (Hg) <sup>d, f</sup>	0.01 mg/l
Nickel (Ni)- <del>d</del>	0.2 mg/l
Nitrite (NO <sub>2</sub> - <del>N</del> )- <del>d, f</del>	10 mg/l as N
Nitrite & Nitrate (NO <sub>2</sub> +NO <sub>3</sub> - <del>N</del> )- <sup>d, f</sup>	100 mg/l as N
Selenium (Se)- <del>d</del>	0.02 mg/l
Vanadium (V) <sup>d</sup>	0.1 mg/l
Zinc (Zn)- <del>d</del>	2 mg/l
pH	6.5 - 8.5

**TABLE 4 TDS Water Quality Standards**

Background TDS Value (mg/l)	Maximum Allowable TDS Concentrations
0 - 500	400 mg/l or 1.25 times the background level, whichever is least restrictive
501 - 10,000	1.25 times the background value
10,001 or greater	No limit

1 Chronic or 30-day standard based on information contained in EPA's Integrated Risk Information System (IRIS) using a 10-6 incremental risk factor.

2 Metals for agricultural and domestic uses are stated as total recoverable unless otherwise specified.

32 Whenever a range of standards is listed and referenced to this footnote, the first number in the range is a strictly health-based value, based on the Commission's established methodology for human health-based standards. The second number in the range is a maximum contaminant level, established under the federal Safe Drinking Water Act that has been determined to be an acceptable level of this chemical in public water supplies, taking treatability and laboratory detection limits into account. The Commission intends that control requirements for this chemical be implemented to attain a level of ambient water quality that is at least equal to the first number in the range except as follows:

- Where ground-water/groundwater quality exceeds the first number in the range due to a release of contaminants that occurred prior to September 15, 2012, (regardless of the date of discovery or subsequent migration of such contaminants) clean-up levels for the entire contaminant plume shall be no more restrictive than the second number in the range or the ground-water/groundwater quality resulting from such release, whichever is more protective.
- Wherever the Commission has adopted alternative, site-specific standards for the chemical, the site-specific standards shall apply instead of these statewide standards.

The Commission does not intend the adoption of this range of standards to result in changes to clean-up requirements previously established by an implementing agency, unless such change is mandated by the implementing agency pursuant to its independent statutory authority.

a When the Membrane Filter Technique is used for analysis, the average of all samples taken within thirty days must be less than 1 organism per 100 milliliters of sample. When the Multiple Tube Fermentation Method is used for analysis, the limit is less than 2.2 org/100 ml.

b If the identity and concentration of each radionuclide in a mixture are known, the limiting value would be derived as follows: Determine, for each radionuclide in the mixture, the ratio between the quantity present in the mixture and the limit specified. The sum of such ratios for all radionuclides in the mixture shall not exceed "1" (i.e. unity). A radionuclide may be considered as not present in a mixture if the ratio of the concentration to the limit does not exceed 1/10 and the sum of such ratios for all radionuclides considered as not present in the mixture does not exceed 1/4.

c The chromium standard is based on the total concentration of both trivalent and hexavalent forms of dissolved total recoverable chromium.

d Measured as dissolved concentration. The sample water shall be filtered through a 0.45 micron membrane filter prior to preservation. The total concentration (not filtered) may be required on a case-by-case basis if deemed necessary to characterize the pollution caused by the activity.

e If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem per year. Except for Tritium and Strontium 90 the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents shall be calculated on the basis of a 2 liter per day drinking water intake using the 168-hour data listed in "Maximum Permissible Body Burden and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," NBS Handbook 69, as amended, August 1963, US Department of Commerce.

f These more stringent levels are necessary to protect livestock watering. Levels for parameters without this footnote are set to protect irrigated crops at the same level. Where a party can demonstrate that a livestock watering use of ground water/groundwater is not reasonably expected, the applicable standard for lead is 5.0 mg/l.

g This level is set to protect the following plants in ascending order of sensitivity: Pecan, Black Walnut, Persian (English) Walnut, Jerusalem Artichoke, Navy Bean, American Elm, Plum, Pear, Apple, Grape (Sultanina and Malaga), Kadota Fig, Persimmon, Cherry, Peach, Apricot, Thornless Blackberry, Orange, Avocado, Grapefruit, Lemon. Where a party can demonstrate that a crop watering use of ground-water/groundwater is not reasonably expected, the applicable standard for boron is 5.0 mg/l.

h This level protects all crops, except citrus which do not grow in Colorado and therefore a more stringent level of protection is not required.

i The Gross Alpha Activity standard excludes alpha activity due to Radon and Uranium.

j This standard is only appropriate where irrigation water is applied to soils with pH values lower than 6.0.

M Drinking water MCL.

41.9 Reserved.

41.10 Reserved.

41.11 Reserved.

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**41.30 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: APRIL 13, 2020 RULEMAKING; FINAL ACTION MAY 11, 2020; EFFECTIVE DATE JUNE 30, 2020.**

The provisions of C.R.S. sections 25-8-202; 25-8-203; 25-8-204; 25-8-402, provide the specific statutory authority for adoption of this regulation. The commission also adopted, in compliance with section 24-4-103(4) the following statement of basis and purpose.

**BASIS AND PURPOSE**

In this rulemaking the commission considered revisions to criteria and revisions to division point of compliance provisions. The commission adopted changes as detailed below.

**I. Statewide Standards - Interim Organic Pollutant Standards**

The commission adopted revised and new organic chemical standards in section 41.5(C)(3). In an effort to keep groundwater and surface water organic chemical standards consistent, the changes to section 41.5(C)(3) were also adopted for the statewide surface water organic chemical standards in Regulation No. 31 (Basic Standards and Methodologies for Surface Water).

In adopting these new and revised organic chemical standards, the commission continued to rely on its past policy decisions and precedence documented in Commission Policy 96-2. Additionally, as per Departmental policy, the commission has relied on the United States Environmental Protection Agency's (EPA) Integrated Risk Information System (IRIS) as its first tier source of toxicological data. Review of the IRIS data that had been updated since the last revisions to 41.5(C)(3) indicated adoption of standards for four new chemicals (hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), CAS 121-82-4; 1,2,3-trimethylbenzene, CAS 526-73-8; 1,2,4-trimethylbenzene, CAS 95-63-6; and 1,3,5-trimethylbenzene, CAS 108-67-8) were necessary. Additionally, the water quality standard for benzo[a]pyrene (BaP), CAS 50-32-8 and related chemicals [benzo(a) anthracene, CAS 56-55-3; benzo(b) fluoranthene, CAS 205-99-2; benzo(k) fluoranthene, CAS 207-08-9; chrysene, CAS 218-01-9; dibenzo(a,h) anthracene, CAS 53-70-3; and indeno(1,2,3-cd) pyrene, CAS 193-39-5, needed to be revised. Additional details regarding aspects of these standards revisions are provided below.

**A. Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), CAS 121-82-4**

RDX is characterized in IRIS with the cancer descriptor "Suggestive evidence of carcinogenic potential" per EPA 2005 guidelines. This designation is comparable to the cancer group designation of "C – Possible human carcinogen" from the 1986 EPA guidelines. As such, in accordance with previous commission precedence, the commission adopted a water supply standard for RDX based on the non-cancer toxicity value and using the non-cancer equations and default exposure assumptions from Policy 96-2 in combination with the reference dose (RfD) of 0.004 mg/kg-day from IRIS, and applying an additional uncertainty factor of 10 to account for the additional uncertainty. The resulting standard (2.8 µg/L) is considered to be appropriately protective because, even if applying a cancer-based approach, this standard would result in an incremental lifetime cancer risk factor of  $6 \times 10^{-6}$ , which is of the same order of magnitude as the risk factor, which has been considered to be the appropriate level risk by the commission in past determinations ( $1 \times 10^{-6}$ ).

## **B. Trimethylbenzenes**

The commission adopted new water supply standards for 1,2,3-trimethylbenzene, CAS 526-73-8; 1,2,4-trimethylbenzene, CAS 95-63-6; and 1,3,5-trimethylbenzene, CAS 108-67-8, calculated using the non-cancer equations and default exposure assumptions from Policy 96-2 in combination with the RfD of 0.01 mg/kg-day from IRIS.

## **C. Benzo[a]pyrene (BaP), CAS 50-32-8 and related chemicals**

The commission adopted a revised Water Supply standard for BaP based on updates to the EPA IRIS assessment. In addition to an updated cancer slope factor, the updated assessment, identified BaP as a mutagen. Therefore, the standard adopted by the commission was calculated using age dependent factors, following EPA 2005 guidance on calculating water quality standards for mutagenic compounds in combinations with default exposure assumptions from Policy 96-2, and the oral cancer slope factor of 1 per mg/kg-day from IRIS. Previously, water quality standards of several related polycyclic aromatic hydrocarbons (PAHs) [benzo(a) anthracene, benzo(b) fluoranthene, benzo(k) fluoranthene, chrysene, dibenzo(a,h) anthracene, and indeno(1,2,3-cd) pyrene] were set equal to those for BaP; therefore, the Water Supply standard for these PAHs was also revised. The commission adopted revised standards for these PAHs by applying the estimated order of potential potency (EOPP) factor, for each chemical relative to BaP, presented in EPA's 1993 Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. In this approach, the potencies of other PAHs relative to benzo(a)pyrene are determined. These EOPP factors were applied using the revised cancer slope factor for BaP from IRIS and using age dependent factors appropriate for use with mutagenic chemicals. Treatment of the related PAHs as mutagens, based on that determination for BaP, is consistent with the approach described in EPA's 1993 guidance. Footnote 8 was added to indicate that BaP and related PAH standards were calculated as mutagens. In 2010 EPA provided a draft of updated guidance, which applied new relative potency factors (RPFs). However, since the guidance was never finalized, the new RPFs are widely not used throughout EPA risk assessment framework, and are thus not used for the derivation of the revised water quality standards.

Previous to revision, the Water Supply standard for BaP was adopted by the commission as a hybrid standard that ranged from the concentration protective of human-health to the drinking water maximum contaminant level (MCL). The hybrid standard approach was adopted in the 2004 rulemaking in response to ongoing debate dating back to 1989 about whether standards for parameters with MCLs should be based on the MCLs or purely health-based numbers. The arguments for MCLs focused on whether it is reasonable to require groundwater remediation to a level below that required for drinking water. The arguments for health-based standards focused on maximizing human-health protection, putting the clean-up burden on pollution sources, and protection of groundwater as a resource. In response, the commission adopted a hybrid proposal (maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur (MCLG)/MCL) that provides much of the benefits advocated for each of the above options. This hybrid approach had the intention to allow for existing groundwater contamination to be addressed at levels that are deemed safe for drinking water sources, but allows for the protection of groundwater as a resource by implementing a more protective human-health health based standard for future contamination.

In practice, hybrid standards have largely resulted in discharge permits with effluent limits based solely on the MCL. Additionally, there are more appropriate alternative regulatory pathways, such as variances, through which dischargers can seek regulatory relief. Furthermore, recent litigation in Idaho has resulted from adopting water quality standards that are not fully protective of the beneficial uses. In May 2016, EPA entered into a

consent decree with Northwest Environmental Advocates to reconsider EPA's 2010 approval of Idaho's human health criteria for arsenic, which were based on the MCL in drinking water. In September 2016, EPA disapproved Idaho's MCL-based criteria, citing that the criteria "are not protective of Idaho's designated uses, including primary and secondary contact recreation and domestic water supply". EPA also noted that there are significant differences between the allowable factors for developing MCLs and water quality criteria to protect designated uses under CWA section 303(c). EPA points out that MCLs are in some cases based on feasibility considerations, including the availability of technology to achieve the regulatory level and the cost of such treatment. In other cases MCLs are based on concentrations that can be measured reliably - in good laboratories - rather than concentrations expected to be protective of human health. In contrast, water quality criteria in water quality standards must be based on a sound scientific rationale and protect the designated use, and not on available treatment technology, costs, or other feasibility considerations. In addition, water quality standards regulations at 40 CFR 131.11 (a)(1) are explicit that States must adopt water quality criteria that protect designated uses."

For BaP, the Colorado Hazardous Materials and Waste Management Division currently uses the risk-based water quality standard to derive the groundwater protection level for BaP. Furthermore, the MCL for BaP is 0.2 µg/L; the incremental lifetime cancer risk factor resulting from this concentration would be  $1.5 \times 10^{-5}$ , which is more than an order of magnitude greater than the risk factor that has been considered to be the appropriate level risk by the commission in past determinations ( $1 \times 10^{-6}$ ). Therefore, the commission adopted a risk-based water supply standard for BaP that is protective of human health.

## **II. Changes to Division Provisions for Determining Point of Compliance at 41.6(D)**

The commission adopted changes to the existing language in Regulation 41.6(D), which provides specific direction to the division when it determines points of compliance for groundwater permits. The commission revised the language to clarify that Regulation 41.6(D) applies to points of compliance in both Regulation 42 specified areas and unclassified areas governed by the interim narrative standard, consistent with the existing direction in Reg. 41.6(A) that Regulation 41.6(D) should apply to all activities regulated by the division.

The commission also removed the previous distinction in Regulation 41.6(D) between points of compliance for "new" and "existing" activities. Instead, the commission adopted one set of criteria for the division to use going forward in its adoption of points of compliance for all activities. These criteria are intended to allow for consideration and balance of a number of important factors, including but not limited to the use of land treatment technologies and/or groundwater dilution to achieve compliance with applicable standards, while ensuring that domestic water supplies and other uses are afforded the highest degree of protection that is technologically and economically feasible.

## **III. Alignment of Portion Designations for Metal Standards in Regulation 41 with those in Regulation 31**

The commission made changes to several parameters in Tables 1, 2, and 3 regarding the portion of metals considered for the water quality standard. Several standards, which were previously indicated to be based on the dissolved portion were revised to the total recoverable fraction. These revisions were made to be consistent with the portions designated for the standards protecting these uses in Regulation 31. Regulation 31 states that "metals for agricultural and domestic uses are stated as total recoverable unless otherwise specified." Therefore, those standards specifically designated as dissolved in Regulation 31 and standards not represented in Regulation 31 were retained as dissolved in Tables 1-3. The remaining metals standards in Tables 1-3 were designated as total recoverable. A footnote was added and several footnote references were revised to accommodate these changes. It is likely that the dissolved and total

recoverable portions of these parameters in groundwater will be fairly equivalent in most cases. Additionally, many of the standards for these parameters are based on EPA MCLs, which are based on the total recoverable portion. Thus, the changes are appropriate in that they more accurately reflect the portion of metals protective of the uses and create alignment with Regulation 31.

#### **IV. Change of Ground Water to Groundwater**

The commission adopted a change from we "ground water" to "groundwater". This change is consistent with common technical usage and usage in the Water Quality Control Act. This change is part of a broad initiative to change the spelling program-wide, and to increase consistency.

#### **V. House Keeping**

The commission added clarification to a number of items and corrected minor typographical errors:

- Alignment of footnote assignments for the following organic chemical standards between Regulations 31 and 41: biphenyl; carbofuran; 1,2 dibromo-3-chloropropane (DBCP); dibromoethane 1,2; dichloromethane (methylene chloride); dioxane 1,4; hexachloroethane; tetrachloroethane 1,1,2,2; tetrachloroethylene (PCE); and trihalomethanes.
- Corrected the spelling of chlorpyrifos
- Corrected the spelling of trichloroacetic acid
- Corrected the spelling of chloronaphthalene
- Changed the order of appearance for a number of organic chemicals in Table A, to better align with Regulation 31 and display the correct alphabetical order: dichlorobenzidine, endosulfan sulfate, nitrosodiphenylamine N, and trichloroacetic acid
- Superscripted footnotes in Tables 2 and 3
- Added a synonym reference for chlorodibromomethane and dibromochloromethane to better align in Regulations 31 and 41.

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Commission

REGULATION NO. 42 - SITE-SPECIFIC WATER QUALITY CLASSIFICATIONS AND STANDARDS FOR ~~GROUND WATER~~GROUNDWATER

5 CCR 1002-42

42.1 AUTHORITY

These regulations are promulgated pursuant to section 25-8-202, 25-8-203, and 25-8-204 of the Colorado Water Quality Control Act, and the provisions of “The Basic Standards for ~~Ground Water~~Groundwater Regulation No. 41 (5 CCR 1002-41).”

42.2 PURPOSE

The purpose of these regulations is to apply the framework for ~~ground water~~groundwater classifications and water quality standards, as set forth in “The Basic Standards for ~~Ground Water~~Groundwater, Regulation No. 41 (5 CCR 1002-41)” to specific ~~ground water~~groundwaters in the state, and to adopt an interim narrative standards to protect these ~~ground water~~groundwaters prior to the adoption of use classifications and numerical standards for specific areas.

42.3 INDEX OF CLASSIFIED AREAS

~~GROUND WATER~~GROUNDWATER TO WHICH QUALITY CONTROL COMMISSION HAS ASSIGNED USE CLASSIFICATIONS AND WATER QUALITY STANDARDS

LOCATION	COUNTY	DATE ADOPTED	FIGURE #	NARRATIVE PAGE #	FIGURE PAGE #
Alamosa	Alamosa	05/ <del>1993</del>	4	6	<del>5641</del>
Bennett	Adams	06/ <del>1994</del>	11	9	<del>6348</del>
Brighton	Adams	11/ <del>1994</del>	29	14	<del>8166</del>
Brush	Morgan	05/ <del>1991</del>	2	6	<del>5439</del>
Burlington	Kit Carson	06/ <del>1994</del>	12	9	<del>6449</del>
Carbondale	Garfield	06/ <del>1994</del>	13	9	<del>6550</del>
Castle Rock	Douglas	06/ <del>1994</del>	14	10	<del>6651</del>
Co. Oil & Gas Fields	Logan, N Washington & NE Morgan	09/ <del>1997</del>	40	18	<del>8277</del>
Crowley County	Crowley	06/ <del>1994</del>	15	10	<del>6752</del>
Denver SE Suburban W & SD	Douglas	06/ <del>1994</del>	16	10	<del>6853</del>
E. Cherry Creek Valley W & SD	Arapahoe	05/ <del>1993</del>	5	7	<del>5742</del>
E. Dillon WD	Summit	06/ <del>1994</del>	17	11	<del>6954</del>
Eckley	Yuma	11/ <del>1994</del>	30	15	<del>8267</del>
Federal Heights WD	Adams	05/ <del>1993</del>	6	7	<del>5843</del>
Fort Lupton	Weld	11/ <del>1994</del>	31	15	<del>8368</del>
Fort Morgan	Morgan	11/ <del>1994</del>	32	15	<del>8469</del>
Fountain/Security/Stratmoor Hills/Widefield	El Paso	05/ <del>1993</del>	7	7	<del>5944</del>
Glendale/Cherry Creek Valley W & SD	Arapahoe	06/ <del>1994</del>	18	11	<del>7055</del>

LOCATION	COUNTY	DATE ADOPTED	FIGURE #	NARRATIVE PAGE #	FIGURE PAGE #
Gunnison	Gunnison	06/1994	19	11	<u>7156</u>
Haswell	Kiowa	11/1994	33	16	<u>8570</u>
Lamar	Prowers	05/1993	8	8	<u>6045</u>
La Junta	Otero	06/1994	20	12	<u>7257</u>
Las Animas	Bent	11/1994	34	16	<u>8674</u>
Lowry Air Force Base (Former)/City and County of Denver/City of Aurora	Arapahoe and Denver	06/2014	54A/54B	23	<u>10994/1</u> <u>1095</u>
Meeker	Rio Blanco	11/1994	35	16	<u>8772</u>
Morgan County Qual WD	Morgan	06/1994	21	12	<u>7358</u>
“ “ “ “	“	11/1994	36	17	<u>8873</u>
No CO Water Assn	Larimer	06/1994	22	12	<u>7459</u>
Park Center WD	Fremont	06/1994	23	13	<u>7560</u>
Oil & Gas Fields	Larimer	12/1999	42	19	<u>9479</u>
Oil & Gas Fields East-Central Jackson County	Jackson	12/1999	43	19	<u>9580</u>
Oil & Gas Fields West-Central Jackson County	Jackson	12/1999	44	19	<u>9684</u>
Oil & Gas Fields Northern Moffat County	Moffat	12/1999	45	20	<u>9782</u>
Oil & Gas Fields Weld County	Weld	12/2000	46	20	<u>9883</u>
Oil & Gas Fields Weld County	Weld	12/2000	47	21	<u>9984</u>
Oil & Gas Fields Weld County	Weld	12/2000	48	21	<u>10085</u>
Oil & Gas Fields Adams, Arapahoe Morgan, Washington	Adams, Arapahoe	12/2000	49A	21	<u>10186</u>
		12/2000	49B	21	<u>10287</u>
Weld Counties	Morgan, Washington Weld	12/2000	49C	21	<u>10388</u>
Oil & Gas Fields Rio Blanco County	Rio Blanco	12/2001	50	22	<u>10489</u>
Oil & Gas Fields Baca County	Baca	09/2002	51	22	<u>10589</u>
Oil & Gas Fields Cheyenne and Kit Carson Counties	Cheyenne	12/2003	52A	23	<u>10694</u>
	Kit Carson	12/2003	52B	23	<u>10792</u>
Oil and Gas Field (Hiawatha) Moffat County	Moffat	03/2004	53	23	<u>10893</u>
<u>Oil and Gas fields of Larimer, Weld, Boulder, Broomfield, Adams, Denver, Jefferson, and Arapahoe counties</u>	<u>Larimer, Weld, Boulder, Broomfield, Adams, Denver, Jefferson, and Arapahoe</u>	<u>04/2020</u>	<u>55</u>	<u>42</u>	<u>111</u>
<u>Oil and Gas fields of Morgan, Logan, Sedgwick, Phillips, Washington, and Yuma counties</u>	<u>Morgan, Logan, Sedgwick, Phillips, Washington, and</u>	<u>04/2020</u>	<u>56</u>	<u>44</u>	<u>112</u>

LOCATION	COUNTY	DATE ADOPTED	FIGURE #	NARRATIVE PAGE #	FIGURE PAGE #
	<u>Yuma</u>				
<u>Oil and Gas fields of Douglas, Elbert, Lincoln, Kit Carson, El Paso, Cheyenne, Pubelo, Fremont, Crowley, Kiowa, Otero, Bent, Prowers, and Baca counties</u>	<u>Douglas, Elbert, Lincoln, Kit Carson, El Paso, Cheyenne, Pubelo, Fremont, Crowley, Kiowa, Otero, Bent, Prowers, and Baca</u>	<u>04/2020</u>	<u>57</u>	<u>45</u>	<u>113</u>
<u>Oil and Gas fields of Sauguache, Rio Grande, Alamosa, Huerfano, Costilla, and Las Animas counties</u>	<u>Sauguache, Rio Grande, Alamosa, Huerfano, Costilla, and Las Animas</u>	<u>04/2020</u>	<u>58</u>	<u>46</u>	<u>114</u>
<u>Oil and Gas fields of La Plata and Archuleta counties</u>	<u>La Plata and Archuleta</u>	<u>04/2020</u>	<u>59</u>	<u>47</u>	<u>115</u>
<u>Oil and Gas fields of Montrose, San Miguel, Dolores, and Montezuma counties</u>	<u>Montrose, San Miguel, Dolores, and Montezuma</u>	<u>04/2020</u>	<u>60</u>	<u>48</u>	<u>116</u>
<u>Oil and Gas fields of Moffat, Routt, Jackson, Grand, Rio Blanco, Garfield, Mesa, Delta, Pitkin, and Gunnison counties</u>	<u>Moffat, Routt, Jackson, Grand, Rio Blanco, Garfield, Mesa, Delta, Pitkin, and Gunnison</u>	<u>04/2020</u>	<u>61</u>	<u>51</u>	<u>117</u>
Rangely Oil & Gas Field	Rio Blanco	04/ <del>1998</del>	41	18	<del>8378</del>
Rocky Flats	Jeff/Boulder	02/ <del>1991</del>	1	4	<del>5338</del>
San Luis W & SD	Costilla	06/ <del>1994</del>	24	13	<del>7664</del>
SW Protection Area	Kit Carson	10/ <del>1995</del>	38	17	<del>9075</del>
Springfield	Baca	06/ <del>1994</del>	25	13	<del>7762</del>
Sterling	Logan	11/ <del>1994</del>	37	17	<del>8974</del>
Upper Black Squirrel	El Paso	05/ <del>1991</del>	3	6	<del>5540</del>
Upper Cherry Crk & Denver Basins	El Paso/Douglas/ Arapahoe	01/ <del>1996</del>	39	17	<del>8176</del>
Vail Valley	Eagle	05/ <del>1993</del>	9	8	<del>6146</del>
Willows/Centennial Class Area	Arapahoe & Douglas	05/ <del>1993</del>	10	8	<del>6247</del>
Woodmoor W&S	El Paso	06/ <del>1994</del>	26	13	<del>7863</del>
Wray	Yuma	06/ <del>1994</del>	27	14	<del>7964</del>
Yuma	Yuma	06/ <del>1994</del>	28	14	<del>8065</del>



(includes Piney Creek Alluvium and younger deposits) and “Qg-Pinedale and Bull Lake Age Gravels and Alluvium.” (includes Broadway and Louviers Alluvium).

- (4) “Saturated Zone” is a subsurface zone in which all of the interstices are filled with water under pressure greater than that of the atmosphere. This zone is separated from the zone of aeration by the water table.
- (5) “State” is defined in the Constitution of the State of Colorado, article 1 as commencing on the thirty-seventh parallel of north latitude, where the twenty-fifth meridian of longitude west from Washington crosses the same; thence north, on said meridian to the forty-first parallel of north latitude; thence along said parallel, west, to the thirty-second meridian of longitude west from Washington; thence south, on said meridian, to the thirty-seventh parallel of north latitude; thence along said thirty-seventh parallel of north latitude to the place of beginning.
- (6) “Unconfined ~~Ground Water~~Groundwater” is ~~ground-water~~groundwater that has a free water table; i.e., water not confined under pressure beneath relatively impermeable rocks.
- (7) “Upper Hydro-Stratigraphic Unit” is the uppermost layer of ~~ground-water~~groundwater incorporating any aquifer or other zone of ~~ground-water~~groundwater occurrence which is the first encountered beneath the ground surface and includes all saturated geologic formations, unconsolidated alluvium and colluvium, and hydraulically connected zones in bedrock.

#### 42.6 RESERVED

#### 42.7 SITE-SPECIFIC ~~GROUND WATER~~GROUNDWATER CLASSIFICATIONS AND WATER QUALITY STANDARDS

The statewide standards for organic chemicals and radioactive materials set forth in section 41.5 C of The Basic Standards for ~~Ground Water~~Groundwater apply to all ~~ground-water~~groundwater for which site specific classifications and standards have been adopted, unless the Commission specifies otherwise in the site-specific standards for a particular specified area.

The following classifications and standards shall not be interpreted so as to cause material injury to water rights in accordance with 25-8-104 C.R.S. (1989):

#### (1) ROCKY FLATS AREA, JEFFERSON AND BOULDER COUNTIES

- (a) Specified Area: All unconfined ~~ground-water~~groundwaters within i) the Upper Hydro-Stratigraphic Unit (UHSU), including the unconsolidated Quaternary and Rocky Flats alluvium, colluvium and valley fill alluvium, and weathered claystone and hydraulically connected sandstone bedrock of the Arapahoe and Upper Laramie formations; ii) the Arapahoe and Upper Laramie aquifers not hydraulically connected to the UHSU; and iii) the Laramie-Fox Hill aquifer, within the area shown on Figure 1.
- (b) Classification: The classification of the ~~ground-water~~groundwaters within the specified area is:
  - 1. Upper Hydro-Stratigraphic Unit:
    - Surface Water Protection

(c) Water Quality Standards:

- (i) The water quality standards included in section 31.11(2) (statewide surface water radioactive materials standards), section 31.11(3) (statewide surface water interim organic pollutant standards), and the site-specific surface water quality standards for segments 4a, 4b and 5 of Big Dry Creek (in section 38.6 of the South Platte Basin Classifications and Standards) are assigned to UHSU ~~ground-water~~groundwater described in 42.7(1)(a).
- (ii) An agency implementing the standards may, if it has authority, set a compliance standard different from the listed standard and equal to the background level if the implementing agency has the authority to exceed that standard.
- (iii) Where a toxic substance for which no numerical standard has been established is found in a detectable amount, notification shall be given as soon as possible to the operator of the Rocky Flats Environmental Technology Site; the United States Department of Energy; the United States Environmental Protection Agency; and the Water Quality Control Division, which will consult as necessary with other components of the Colorado Department of Public Health and Environment. Those entities will meet and attempt to reach a consensus concerning the appropriate numerical protection level for that substance. If consensus is a numerical protection level. Where consensus cannot be reached, the Division will determine the appropriate numerical protection level.

In setting a numerical protection level, the entities listed above will consider the existing and any reasonably probable future beneficial uses of ~~ground-water~~groundwater that need to be protected in the vicinity of the discharge, and establish the appropriate corresponding numerical protection levels for specific contaminants, based on those beneficial uses, as outlined in section 41.5(b) of "The Basic Standards for ~~Ground Water~~Groundwater." The entities will take into account reasonably available information.

A determination made by these entities or the Division in accordance with the procedure described above will not be deemed to constitute a ~~ground-water~~groundwater quality standard and will not be applicable outside the specified area for this hearing.

If numerical protection levels are established by agreement of the entities, they will jointly petition the Commission for rulemaking to set a standard at the numerical protection level. If the Division establishes a numerical protection level without agreement of all entities, the Division shall ask the Commission to set a standard consistent with the numerical protection level.

If any interested person disagrees with a determination made by the Division in accordance with the procedure described above, it may petition the Commission to adopt a site-specific standard different from the numerical protection level. Any determination made by the Commission during the hearing process would then become binding on the Division, the Department of Energy, and the operator of the Rocky Flats Environmental Technology Site. At the request of the Department of Energy or the operator of the Rocky Flats Site or an interested person, the Commission will consider such a hearing to be mandatory and de novo.

SITE-SPECIFIC RADIONUCLIDE STANDARDS\* (in Picocuries/Liter)

- A. Ambient based site-specific standards for ~~ground-water~~groundwaters in the UHSU hydraulically connected to the surface streams shown:
  - Segment 4      Segment 4
  - Segment 5      Segment 5

	Woman <u>Creek</u>	Walnut <u>Creek</u>
Gross alpha	7	11
Gross Beta	8	19
Tritium	500	500
Uranium	11	10

\* Statewide Standards also apply for radionuclides not listed above.

**(2) CITY OF BRUSH WELLFIELD, MORGAN COUNTY**

- (a) Specified Area: All unconfined ~~ground-water~~groundwaters within the saturated zone underlying that area as illustrated in Figure 2.
- (b) Classification: The classifications of the unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground WaterGroundwater Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all unconfined ~~ground-water~~groundwater in the specified area.

**(3) UPPER BLACK SQUIRREL CREEK ALLUVIAL AQUIFER, EL PASO COUNTY**

- (a) Specified Area: All unconfined ~~ground-water~~groundwaters within the saturated zone underlying that area of El Paso County shown on Figure 3.
- (b) Classification: The classifications of the unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground WaterGroundwater Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all unconfined ~~ground-water~~groundwater in the specified area.

**(4) CITY OF ALAMOSA WELLFIELD, ALAMOSA COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 4. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ground-watergroundwater in the specified area.

**(5) EAST CHERRY CREEK VALLEY WATER & SANITATION DISTRICT, ARAPAHOE COUNTY**

- (a) Specified Area: All ground-watergroundwater underlying the area illustrated in Figure 5 within the saturated zone of the Denver Basin aquifers to include the Denver, Arapahoe, and Laramie-Fox Hills aquifers as defined by the Colorado Division of Water Resources' Denver Basin Rules (2 CCR 402-6); also the Dawson aquifer as defined by the Colorado Division of Water Resources' Denver Basin Rules (2 CCR 402-6), and all of the alluvial and unconfined ground-watergroundwater overlying the Denver Basin aquifers and underlying the area illustrated in Figure 5. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the ground-watergroundwater in the Denver, Arapahoe, and Laramie-Fox Hills aquifers within the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all ground-watergroundwater in the Denver, Arapahoe, and Laramie-Fox Hills aquifers within the specified area.

The interim narrative standard, as specified in the “Classifications and Water Quality Standards for Ground WaterGroundwater” 42.0 (5 CCR 1002-42), shall be applicable to the ground-watergroundwater in the Dawson aquifer and all of the alluvial and unconfined ground-watergroundwater overlying the Denver Basin Aquifers within the specified area:

**(6) FEDERAL HEIGHTS WATER DISTRICT WELLFIELD, ADAMS COUNTY**

- (a) Specified Area: All confined and unconfined ground-watergroundwaters within the saturated zone underlying the area as illustrated in Figure 6. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ground-watergroundwater in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ground-watergroundwater in the specified area.

**(7) CITY OF FOUNTAIN, SECURITY WATER & SANITATION DISTRICT, STRATMOOR HILLS WATER DISTRICT, AND WIDFIELD HOMES WATER COMPANY WELLFIELDS, EL PASO COUNTY. SPECIFIED AREA INCLUDES THE WIDFIELD AQUIFER, WINDMILL GULCH AQUIFER, SAND CREEK AQUIFER, CREWS GULCH AQUIFER, FOUNTAIN CREEK**

**ALLUVIAL AQUIFER AND OTHER ADJACENT UNCONFINED AQUIFERS IN EL PASO COUNTY.**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwaters within the saturated zone underlying the following Public Land Survey System (PLSS) sections in El Paso County (Figure 7):

Township	Range	Section	Township	Range	Section
T13S	R65W	S30	T14S	R65W	S28
T13S	R65W	S31	T14S	R65W	S29
T13S	R66W	S36	T14S	R65W	S30
T14S	R64W	S19	T14S	R65W	S31
T14S	R64W	S30	T14S	R65W	S32
T14S	R65W	S06	T14S	R65W	S33
T14S	R65W	S07	T14S	R65W	S34
T14S	R65W	S15	T14S	R65W	S35
T14S	R65W	S16	T14S	R65W	S36
T14S	R65W	S17	T14S	R66W	S01
T14S	R65W	S18	T14S	R66W	S12
T14S	R65W	S19	T14S	R66W	S13
T14S	R65W	S20	T14S	R66W	S14
T14S	R65W	S21	T14S	R66W	S19
T14S	R65W	S22	T14S	R66W	S20
T14S	R65W	S23	T14S	R66W	S21
T14S	R65W	S24	T14S	R66W	S22
T14S	R65W	S25	T14S	R66W	S23
T14S	R65W	S26	T14S	R66W	S24
T14S	R65W	S27	T14S	R66W	S25
T14S	R66W	S26	T15S	R65W	S17
T14S	R66W	S27	T15S	R65W	S18
T14S	R66W	S28	T15S	R65W	S19

Township	Range	Section	Township	Range	Section
T14S	R66W	S29	T15S	R65W	S20
T14S	R66W	S30	T15S	R65W	S21
T14S	R66W	S32	T15S	R65W	S22
T14S	R66W	S33	T15S	R65W	S23
T14S	R66W	S34	T15S	R65W	S26
T14S	R66W	S35	T15S	R65W	S27
T14S	R66W	S36	T15S	R65W	S28
T15S	R65W	S01	T15S	R65W	S29
T15S	R65W	S02	T15S	R65W	S30
T15S	R65W	S03	T15S	R65W	S31
T15S	R65W	S04	T15S	R65W	S32
T15S	R65W	S05	T15S	R65W	S33
T15S	R65W	S06	T15S	R65W	S34
T15S	R65W	S07	T15S	R66W	S01
T15S	R65W	S08	T15S	R66W	S02
T15S	R65W	S09	T15S	R66W	S03
T15S	R65W	S10	T15S	R66W	S04
T15S	R65W	S11	T15S	R66W	S10
T15S	R65W	S12	T15S	R66W	S11
T15S	R65W	S13	T15S	R66W	S12
T15S	R65W	S14	T15S	R66W	S13
T15S	R65W	S15	T15S	R66W	S14
T15S	R65W	S16	T15S	R66W	S15
T15S	R66W	S23	T16S	R65W	S32
T15S	R66W	S24	T16S	R65W	S33
T15S	R66W	S25	T16S	R65W	S34
T15S	R66W	S26	T16S	R66W	S01

Township	Range	Section	Township	Range	Section
T15S	R66W	S36	T16S	R66W	S08
T16S	R65W	S03	T16S	R66W	S09
T16S	R65W	S04	T16S	R66W	S10
T16S	R65W	S05	T16S	R66W	S11
T16S	R65W	S06	T16S	R66W	S12
T16S	R65W	S07	T16S	R66W	S13
T16S	R65W	S08	T16S	R66W	S14
T16S	R65W	S09	T16S	R66W	S15
T16S	R65W	S10	T16S	R66W	S16
T16S	R65W	S15	T16S	R66W	S17
T16S	R65W	S16	T16S	R66W	S20
T16S	R65W	S17	T16S	R66W	S21
T16S	R65W	S18	T16S	R66W	S22
T16S	R65W	S19	T16S	R66W	S23
T16S	R65W	S20	T16S	R66W	S24
T16S	R65W	S21	T16S	R66W	S25
T16S	R65W	S22	T16S	R66W	S26
T16S	R65W	S27	T16S	R66W	S27
T16S	R65W	S28	T16S	R66W	S28
T16S	R65W	S29	T16S	R66W	S29
T16S	R65W	S30	T16S	R66W	S31
T16S	R65W	S31	T16S	R66W	S32
T16S	R66W	S33	T17S	R66W	S03
T16S	R66W	S34	T17S	R66W	S04
T16S	R66W	S35	T17S	R66W	S05
T16S	R66W	S26	T17S	R66W	S06
T17S	R65W	S03	T17S	R66W	S07

Township	Range	Section	Township	Range	Section
T17S	R65W	S04	T17S	R66W	S08
T17S	R65W	S05	T17S	R66W	S09
T17S	R65W	S06	T17S	R66W	S10
T17S	R65W	S09	T17S	R66W	S11
T17S	R65W	S10	T17S	R66W	S12
T17S	R66W	S01	T17S	R66W	S17
T17S	R66W	S02	T17S	R66W	S18

(b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

(c) Ground Water~~Groundwater~~ Quality Standards: For the specified area, the ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all ~~ground water~~groundwater.

(d) Additional ~~Ground Water~~Groundwater Quality Standards for the Specified Area:

- (i) The sum of Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) = 0.070 micrograms per liter.

**(8) CITY OF LAMAR WELLFIELD, PROWERS COUNTY**

(a) Specified Area: All confined and unconfined ~~ground water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 8. Maps depicting each specified area on a larger scale are available in the Commission Office.

(b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

(c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(9) VAIL VALLEY CONSOLIDATED WATER DISTRICT WELLFIELDS, EAGLE COUNTY**

(a) Specified Area: All confined and unconfined ~~ground water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 9. Maps depicting each specified area on a larger scale are available in the Commission Office.

(b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

(c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground-water~~groundwater quality standards included in Table 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-water~~groundwater in the specified area.

**(10) WILLOWS, AND CENTENNIAL ~~GROUND-WATER~~GROUNDWATER CLASSIFICATION AREA, ARAPAHOE AND DOUGLAS COUNTIES**

(a) Specified Area: All ~~ground-water~~groundwaters underlying the area illustrated in Figure 10 and within the saturated zone of the Denver Basin aquifer system as defined by the Colorado Division of Water Resources' Denver Basin Rules (2 CCR 402-6) to include the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers and all the alluvial and unconfined ~~ground-water~~groundwater overlying the Denver Basin aquifers. Maps depicting each specified area on a larger scale are available in the Commission Office.

(b) Classifications: The classifications of the ~~ground-water~~groundwater in the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

The classification of the alluvial and unconfined ~~ground-water~~groundwater overlying the Denver Basin aquifers in the specified area is:

- Agricultural Use-Quality

(c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all ~~ground-water~~groundwater in the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers in the specified area.

The ~~ground-water~~groundwater quality standards included in the Tables 3 and 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all alluvial and unconfined ~~ground-water~~groundwater overlying the Denver Basin aquifers in the specified area.

**(11) TOWN OF BENNETT WELLFIELD, ADAMS COUNTY**

(a) Specified Area: All confined and unconfined ~~ground-water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 11. Maps depicting each specified area on a larger scale are available in the Commission Office.

(b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(12) CITY OF BURLINGTON WELLFIELD, KIT CARSON COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 12. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(13) TOWN OF CARBONDALE WELLFIELD, GARFIELD COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 13. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(14) TOWN OF CASTLE ROCK WELLFIELD, DOUGLAS COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 14. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(15) CROWLEY COUNTY WATER SYSTEM WELLFIELD, CROWLEY COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 15. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1-4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(16) DENVER SOUTHEAST SUBURBAN WATER & SANITATION DISTRICT WELLFIELD, DOUGLAS COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 16. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1-4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(17) EAST DILLON WATER DISTRICT WELLFIELD, SUMMIT COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 17. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(18) CITY OF GLENDALE AND CHERRY CREEK VALLEY WATER AND SANITATION DISTRICT  
~~GROUND-WATERGROUNDWATER~~ CLASSIFICATION AREA, ARAPAHOE COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~ within the saturated zone underlying the area as illustrated in Figure 18. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(19) CITY OF GUNNISON WELLFIELD, GUNNISON COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 19. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(20) CITY OF LA JUNTA WELLFIELD, OTERO COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 20. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(21) MORGAN COUNTY QUALITY WATER DISTRICT WELLFIELD, MORGAN COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~ within the saturated zone underlying the area as illustrated in Figure 21. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:
- Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(22) NORTHERN COLORADO WATER ASSOCIATION WELLFIELD, LARIMER COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 22. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:
- Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(23) PARK CENTER WATER DISTRICT WELLFIELD, FREMONT COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~ within the saturated zone underlying the area as illustrated in Figure 23. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classification: The classification of the confined and unconfined ~~ground-watergroundwater~~ in the specified area is:
- Domestic Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(24) SAN LUIS WATER & SANITATION DISTRICT WELLFIELD, COSTILLA COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 24. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(25) TOWN OF SPRINGFIELD WELLFIELD, BACA COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~ within the saturated zone underlying the area as illustrated in Figure 25. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-watergroundwater~~ in the specified area.

**(26) WOODMOOR WATER AND SANITATION DISTRICT WELLFIELD, EL PASO COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-watergroundwater~~s within the saturated zone underlying the area as illustrated in Figure 26.

- (b) Classifications: The classifications of the confined and unconfined ~~ground-watergroundwater~~ in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground WaterGroundwater~~” 41.0 (5 CCR

1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(27) CITY OF WRAY WELLFIELD, YUMA COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground water~~groundwater within the saturated zone underlying the area as illustrated in Figure 27.
- (b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) ~~Ground Water~~Groundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(28) CITY OF YUMA WELLFIELD, YUMA COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 28. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) ~~Ground Water~~Groundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(29) CITY OF BRIGHTON WELLFIELD, ADAMS COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground water~~groundwater within the saturated zone underlying the area as illustrated in Figure 29. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) ~~Ground Water~~Groundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(30) TOWN OF ECKLEY WELLFIELD, YUMA COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 30. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-water~~groundwater in the specified area.

**(31) CITY OF FORT LUPTON WELLFIELD, WELD COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwater within the saturated zone underlying the area as illustrated in Figure 31. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-water~~groundwater in the specified area.

**(32) CITY OF FORT MORGAN WELLFIELD, MORGAN COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 32. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-water~~groundwater in the specified area.

**(33) TOWN OF HASWELL WELLFIELD, KIOWA COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground water~~groundwater within the saturated zone underlying the area as illustrated in Figure 33. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(34) TOWN OF LAS ANIMAS WELLFIELD, BENT COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 34. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(35) TOWN OF MEEKER WELLFIELD, RIO BLANCO COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground water~~groundwater within the saturated zone underlying the area as illustrated in Figure 35. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground water~~groundwater in the specified area.

**(36) MORGAN COUNTY QUALITY WATER DISTRICT, (SAN ARROYO CREEK BASIN), MORGAN COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwaters within the saturated zone underlying the area as illustrated in Figure 36. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-water~~groundwater in the specified area.

**(37) CITY OF STERLING WELLFIELD, LOGAN COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwater within the saturated zone underlying the area, EXCEPT FOR THE ~~GROUND-WATER~~GROUNDWATER CONTAINED WITHIN THE LOWER CRETACEOUS DAKOTA GROUP D, J, AND O SANDSTONES, as illustrated in Figure 37. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality
- (c) Ground Water~~Groundwater~~ Quality Standards: The ~~ground-water~~groundwater quality standards included in Tables 1 - 4 of the “Basic Standards for ~~Ground Water~~Groundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ~~ground-water~~groundwater in the specified area.

**(38) SOUTHWEST WATER PROTECTION AREA, KIT CARSON COUNTY**

- (a) Specified Area: All confined and unconfined ~~ground-water~~groundwater within the saturated zone underlying the area as illustrated in Figure 38. Maps depicting each specified area on a larger scale are available in the Commission Office.
- (b) Classifications: The classifications of the confined and unconfined ~~ground-water~~groundwater in the specified area are:
  - Domestic Use-Quality
  - Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ground-watergroundwater in the specified area.

**(39) UPPER CHERRY CREEK BASIN AND DENVER BASIN ALLUVIAL AQUIFERS AND TRIBUTARIES, PORTIONS OF EL PASO, DOUGLAS AND ARAPAHOE COUNTIES**

- (a) Specified Area: All confined and unconfined ground-watergroundwaters within the saturated zone underlying the area as illustrated in Figure 39. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classifications of the confined and unconfined ground-watergroundwater in the specified area are:

- Domestic Use-Quality
- Agricultural Use-Quality

- (c) Ground WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Tables 1 - 4 of the “Basic Standards for Ground WaterGroundwater” 41.0 (5 CCR 1002-41) are assigned to all confined and unconfined ground-watergroundwater in the specified area.

**(40) COLORADO OIL AND GAS FIELDS OF LOGAN, NORTHERN WASHINGTON, AND NORTHEASTERN MORGAN COUNTIES, COLORADO**

- (a) Specified Area: The confined ground-watergroundwaters within the Lower Cretaceous aged Dakota Group including the D, J, and O Sandstones underlying the area illustrated in Figure 40. Maps depicting each specified area on a larger scale are available in the Commission Office.

- (b) Classifications: The classification of the ground-watergroundwater in the D, J, and O Sandstones is:

- Limited Use and Quality

- (c) Ground WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Table 1 through 4 of the Basic Standards for Ground WaterGroundwater Regulation No. 41 (5 CCR 1002-41) will not apply to the confined ground-watergroundwater of the D, J, and O Sandstones in the specified area.

The ground-watergroundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Ground WaterGroundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ground watergroundwater of the D, J, and O Sandstones in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(41) RANGLEY OIL AND GAS FILED OF RIO BLANCO COUNTY**

- (a) Specified Area: The confined ground-watergroundwaters within the Weber Formation and the Navajo Sandstone underlying the area illustrated in Figure 41.

(b) Classifications: The classification of the ~~ground water~~groundwater in the Weber Formation and the Navajo Sandstone is:

- Limited Use and Quality

(c) Ground WaterGroundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground Water~~Groundwater Regulation No. 41 (5 CCR 1002-41) will not apply to the confined ~~ground water~~groundwater of the Weber Formation and the Navajo Sandstone within the specified area.

The ~~ground water~~groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for ~~Ground Water~~Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground water~~groundwater in the Weber Formation and the Navajo Sandstone within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

#### **(42) OIL AND GAS FIELDS OF EASTERN LARIMER COUNTY, COLORADO**

(a) Specified Area: The confined ~~ground water~~groundwater in the Entrada Sandstone and Muddy Sandstone (J Sand) underlying the area illustrated in Figure 42.

(b) Classifications: The classification of the ~~ground water~~groundwater in the Entrada Sandstone and Muddy Sandstone (J Sand) is:

- Limited Use and Quality

(c) Ground WaterGroundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground Water~~Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined ~~ground water~~groundwater of the Entrada Sandstone and Muddy Sandstone (J Sand) within the specified area.

The ~~ground water~~groundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for ~~Ground Water~~Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground water~~groundwater in the Entrada Sandstone and Muddy Sandstone (J Sand) within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

#### **(43) OIL AND GAS FIELDS OF EAST-CENTRAL JACKSON COUNTY, COLORADO**

(a) Specified Area: The confined ~~ground water~~groundwater in the Dakota and Lakota Sandstones and the Pierre B Sandstone Member of the Pierre Shale underlying the area illustrated in Figure 43.

(b) Classifications: The classification of the ~~ground water~~groundwater in the Dakota and Lakota Sandstones and the Pierre B Sandstone Member of the Pierre Shale is:

- Limited Use and Quality

(c) Ground WaterGroundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground Water~~Groundwater 41.0 (5 CCR

1002-41) will not apply to the confined ground-watergroundwater of the Dakota and Lakota Sandstones and the Pierre B Sandstone Member of the Pierre Shale within the specified area.

The ground-watergroundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for Ground-WaterGroundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ground-watergroundwater in the Dakota and Lakota Sandstones and the Pierre B Sandstone Member of the Pierre Shale within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(44) OIL AND GAS FIELD OF WEST-CENTRAL JACKSON COUNTY, COLORADO**

- (a) Specified Area: The confined ground-watergroundwater in the Dakota and Lakota Sandstones underlying the area illustrated in Figure 44.
- (b) Classifications: The classification of the ground-watergroundwater in the Dakota and Lakota Sandstones is:
  - Limited Use and Quality
- (c) Ground-WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Table 1 through 4 of the Basic Standards for Ground-WaterGroundwater 41.0 (5 CCR 1002-41) will not apply to the confined ground-watergroundwater of the Dakota and Lakota Sandstones within the specified area.

The ground-watergroundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for Ground-WaterGroundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ground-watergroundwater in the Dakota and Lakota Sandstones within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(45) OIL AND GAS FIELDS OF NORTHERN MOFFAT COUNTY, COLORADO**

- (a) Specified Area: The confined ground-watergroundwater within the Fort Union Formation underlying the area illustrated in Figure 45.
- (b) Classifications: The classification of the ground-watergroundwater in the Fort Union Formation is:
  - Limited Use and Quality
- (c) Ground-WaterGroundwater Quality Standards: The ground-watergroundwater quality standards included in Table 1 through 4 of the Basic Standards for Ground-WaterGroundwater 41.0 (5 CCR 1002-41) will not apply to the confined ground-watergroundwater of the Fort Union Formation within the specified area.

The ground-watergroundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for Ground-WaterGroundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ground-watergroundwater in the Fort Union Formation within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes

that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(46) OIL AND GAS FIELDS OF WELD COUNTY, COLORADO**

- (a) Specified Area: The confined ~~ground water~~groundwater in the Lyons Sandstone underlying the area illustrated in Figure 46.
- (b) Classifications: The classification of the ~~ground water~~groundwater in the Lyons Sandstone is:
  - Limited Use and Quality
- (c) Ground WaterGroundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground Water~~Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined ~~ground water~~groundwater of the Lyons Sandstone within the specified area.

The ~~ground water~~groundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for ~~Ground Water~~Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground water~~groundwater in the Lyons Sandstone within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(47) OIL AND GAS FIELDS OF WELD COUNTY, COLORADO**

- (a) Specified Area: The confined ~~ground water~~groundwater in the Parkman Sandstone underlying the area illustrated in Figure 47.
- (b) Classifications: The classification of the ~~ground water~~groundwater in the Parkman Sandstone is:
  - Limited Use and Quality
- (c) Ground WaterGroundwater Quality Standards: The ~~ground water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground Water~~Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined ~~ground water~~groundwater of the Parkman Sandstone within the specified area.

The ~~ground water~~groundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for ~~Ground Water~~Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground water~~groundwater in the Parkman Sandstone within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(48) OIL AND GAS FIELDS OF WELD COUNTY, COLORADO**

- (a) Specified Area: The confined ~~ground water~~groundwater in the Sussex Sandstone underlying the area illustrated in Figure 48.
- (b) Classifications: The classification of the ~~ground water~~groundwater in the Sussex Sandstone is:
  - Limited Use and Quality

- (c) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Table 1 through 4 of the Basic Standards for Ground WaterGroundwater 41.0 (5 CCR 1002-41) will not apply to the confined ~~ground-watergroundwater~~ of the Sussex Sandstone within the specified area.

The ~~ground-watergroundwater~~ organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for Ground WaterGroundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground watergroundwater~~ in the Sussex Sandstone within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(49) OIL AND GAS FIELDS OF ADAMS, ARAPAHOE, MORGAN, WASHINGTON, AND WELD COUNTIES, COLORADO**

- (1) Specified Area: The confined ~~ground-watergroundwater~~ in the D and J Sandstones underlying the areas illustrated in Figures 49A, 49B, 49C.

- (2) Classifications: The classification of the ~~ground-watergroundwater~~ in the D and J Sandstones is:

- Limited Use and Quality

- (3) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Table 1 through 4 of the Basic Standards for Ground WaterGroundwater 41.0 (5 CCR 1002-41) will not apply to the confined ~~ground-watergroundwater~~ of the D and J Sandstones within the specified areas.

The ~~ground-watergroundwater~~ organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for Ground WaterGroundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground watergroundwater~~ in the D and J Sandstones within the specified areas. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(50) OIL AND GAS FIELD OF RIO BLANCO COUNTY, COLORADO**

- (1) Specified Area: The confined ~~ground-watergroundwater~~ in the Morrison and Sundance Formations underlying the area illustrated in Figure 50.

- (2) Classifications: The classification of the ~~ground-watergroundwater~~ in the Morrison and Sundance Formations are:

- Limited Use and Quality

- (3) Ground WaterGroundwater Quality Standards: The ~~ground-watergroundwater~~ quality standards included in Table 1 through 4 of the Basic Standards for Ground WaterGroundwater 41.0 (5 CCR 1002-41) will not apply to the confined ~~ground-watergroundwater~~ of the Morrison and Sundance Formations within the specified area.

The ~~ground-watergroundwater~~ organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for Ground WaterGroundwater (5CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground watergroundwater~~ in the Morrison and Sundance Formations within the specified area. This

exception applies to these compounds only when their source is crude oil, condensate, or produced water, or

wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(51) OIL AND GAS FIELD OF BACA COUNTY, COLORADO**

- (a) Specified Area: The confined ~~ground-water~~groundwater in the Lansing Formation underlying the area illustrated in Figure 51.
- (b) Classifications: The classification of the ~~ground-water~~groundwater in the Lansing Formation are:
  - Limited Use and Quality
- (c) ~~Ground Water~~Groundwater Quality Standards: The ~~ground-water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground Water~~Groundwater 41.0 (5CCR1002-41) will not apply to the confined ~~ground-water~~groundwater of the Lansing Formation within the specified area.

The ~~ground-water~~groundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for ~~Ground Water~~Groundwater (5CCR 1002-41) for benzene, toluene, ethybenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground-water~~groundwater in the Lansing Formation within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(52) OIL AND GAS FIELD OF CHEYENNE COUNTY AND KIT CARSON COUNTIES, COLORADO**

- (a) Specified Area: The confined ~~ground-water~~groundwater in the Morrow Formation underlying the area illustrated in Figures 52A AND 52B.
- (b) Classifications: The classification of the ~~ground-water~~groundwater in the Morrow Formation are:
  - Limited Use and Quality
- (c) ~~Ground Water~~Groundwater Quality Standards: The ~~ground-water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground Water~~Groundwater 41.0 (5CCR 1002-41) will not apply to the confined ~~ground-water~~groundwater of the Morrow Formation within the specified area.

The ~~ground-water~~groundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for ~~Ground Water~~Groundwater (5CCR1002-41) for benzene, toluene, ethybenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground water~~groundwater in the Morrow Formation within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(53) HIAWATHA OIL AND GAS FIELD OF MOFFAT COUNTY, COLORADO**

- (a) Specified Area : The confined ~~ground-water~~groundwater in a portion of the Tertiary Wasatch Formation (Middle Oil Sand Zone) underlying the area illustrated in Figure 53.
- (b) Classifications: The classification of the confined ~~ground-water~~groundwater in the Middle Oil Sand portion of the Tertiary Wasatch Formation is: Limited Use and Quality
- (c) Ground-WaterGroundwater Quality Standards : The ~~ground-water~~groundwater quality standards included in Table 1 through 4 of the Basic Standards for ~~Ground-Water~~Groundwater 41.0 (5CCR 1002-41) will not apply to the confined ~~ground-water~~groundwater of the Middle Oil Sand zone of the Tertiary Wasatch Formation within the specified area.

The ~~ground-water~~groundwater organic chemical standards included in Table A of the Section 41.5.C.3 of the Basic Standards for ~~Ground-Water~~Groundwater (5CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the ~~ground-water~~groundwater in the Middle Oil Sand portion of the Tertiary Wasatch Formation within the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas.

**(54) FORMER LOWRY AIR FORCE BASE, CITY AND COUNTY OF DENVER AND CITY OF AURORA, ARAPAHOE COUNTY, COLORADO**

- (a) Specified Areas: The unconfined ~~ground-water~~groundwater in the following locations:
  - i. On-Base
    - 1. Alluvial ~~ground-water~~groundwater underlying the areas illustrated and described in Figure 54A as HQ Plume. Main Plume On-Base, and 1432 Source Area.
    - 2. The upper 50 feet of Denver Aquifer ~~ground-water~~groundwater underlying the areas illustrated and described in Figure 54B as HQ Plume. FTZ Plume. OFR Source Area. Main Plume On-Base. 1432 Source Area and CT Source Area.
  - ii. Off-Base
    - 1. Alluvial ~~ground-water~~groundwater, underlying the area illustrated and described in Figure 54A as 11th Avenue to 17th Avenue and North of 17th Avenue.
    - 2. The upper 50 feet of the Denver Aquifer ~~ground-water~~groundwater, underlying the area illustrated and described in Figure 54B as Main Plume Off-Base.
- (b) Classifications: The classification of each of the Specified Areas identified in Section 54(a). above is: Potentially Usable Quality.
- (c) Ground-WaterGroundwater Quality Standards: For the Specified Areas, the ~~ground-water~~groundwater quality standards included in Tables 1 – 4, the Radioactive Materials Standards Table, and the organic chemical standards in Table A of the Basic Standards for ~~Ground-Water~~Groundwater 41.0 (5 CCR 1002-41) are assigned to all ~~ground-water~~groundwater, except for the organic chemicals identified below, the following site-specific standards shall apply in the Specified Areas and the organic chemical standard set forth in Table A. Section 41.5.C.3 of the Basic Standards for ~~Ground-Water~~Groundwater (5 CCR 1002-41) shall not apply.

Site Specific Concentrations and Classifications On-Base				
Area	Classification	Geologic Unit	Parameter	Site Specific Standard
HQ Plume	Potentially Usable Quality	Alluvium	<i>Trichloroethylene</i>	11 µg/l
				<i>1,4-Dioxane</i>
Main Plume		Alluvium	<i>Trichloroethylene</i>	11 µg/l
				<i>1,4-Dioxane</i>
1432 Source Area		Alluvium	<i>Trichloroethylene</i>	11 µg/l
			<i>1,4-Dioxane</i>	3.2 µg/l

Site Specific Concentrations and Classifications On-Base				
Area	Classification	Geologic Unit	Parameter	Site Specific Standard
HQ Plume	Potentially Usable Quality	Bedrock	<i>Trichloroethylene</i>	11 µg/l
			<i>1,4-Dioxane</i>	3.2 µg/l
FTZ Plume		Bedrock	<i>Trichloroethylene</i>	11 µg/l
			<i>1,4-Dioxane</i>	3.2 µg/l
OFR Source Area		Bedrock	<i>Trichloroethylene</i>	11 µg/l
			<i>1,4-Dioxane</i>	3.2 µg/l
Main Plume		Bedrock	<i>Trichloroethylene</i>	11 µg/l
			<i>1,4-Dioxane</i>	3.2 µg/l
1432 Source Area		Bedrock	<i>Trichloroethylene</i>	11 µg/l
			<i>1,4-Dioxane</i>	3.2 µg/l
CT Source Area	Bedrock	<i>Trichloroethylene</i>	11 µg/l	
		<i>1,4-Dioxane</i>	3.2 µg/l	

Site Specific Concentrations and Classification Off-Base				
Area	Classification	Geologic Unit	Parameter	Site Specific Standard
Main Plume North of 17th Avenue	Potentially Usable Quality	Alluvium	<i>Trichloroethylene</i>	12 µg/l
Main Plume 11th Ave to 17th Avenue			<i>1,4 Dioxane</i>	3.2 µg/l
Main Plume	Potentially Usable Quality	Alluvium	<i>Trichloroethylene</i>	12 µg/l
			<i>1,4 Dioxane</i>	3.2 µg/l
		Bedrock	<i>Trichloroethylene</i>	12 µg/l
			<i>1,4 Dioxane</i>	3.2 µg/l

**DESCRIPTION - FIGURE 54A  
HQ Plume**

A part of the Northeast Quarter of Section 8 and a part of the West Half of Section 9, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the West Quarter Corner of said Section 9;  
thence North 00°10'10" East, along the west line of the Northwest Quarter of said Section 9, a distance of 37.00 feet;

thence South 89°49'04" East, parallel with the south line of said Northwest Quarter, a distance of 30.00 feet to the easterly line of Quebec Street and the Point of Beginning;  
thence North 00°10'10" East, along said easterly line, a distance of 1,142.90 feet to a point of non-tangent curve; thence along the arc of a curve to the right having a radius of 3125.00 feet, a central angle of 4°44'39", an arc length of 258.75 feet and whose chord bears North 22°08'58" West a distance of 258.68 feet;  
thence North 00°00'00" East a distance of 973.55 feet;  
thence South 21°07'18" East a distance of 278.47 feet to a corner on the west line of Area 4 as described at Reception Number 9800174373 in the Clerk and Records Office of said City and County of Denver;

thence along the southwesterly line of said Area 4 the following seven (7) courses:

1. South 09°41'03" East a distance of 185.07 feet;
2. South 26°06'15" East a distance of 317.47 feet;
3. South 00°30'20" West a distance of 120.51 feet;
4. South 61°54'11" East a distance of 363.78 feet;
5. South 00°01'05" East a distance of 258.88 feet;
6. South 36°27'47" East a distance of 216.39 feet;
7. South 74°49'56" East a distance of 156.06 feet to the northwest corner of a parcel of land as described at Reception Number 2000013500 in said Clerk and Records Office;

thence South 36°28'38" East, along the southwesterly line of said parcel of land described at Reception Number 2000013500, a distance of 608.42 feet to a point on the northerly line of Area 2 as described at Reception Number 9800087078 in said Clerk and Records Office;

thence along said northerly line of Area 2 the following eight (8) courses:

1. South 53°32'18" West a distance of 744.29 feet;
2. North 35°20'40" West a distance of 74.00 feet to a point of non-tangent curvature;
3. along the arc of a curve to the right having a central angle of 35°31'36", a radius of 263.00 feet, an arc length of 163.08 feet and whose chord bears South 72°25'08" West a distance of 160.48 feet;
4. North 89°49'04" West a distance of 81.42 feet to a point of curvature;
5. along the arc of a curve to the right having a central angle of 20°15'00", a radius of 263.00 feet, an arc length of 92.95 feet and whose chord bears North 79°41'34" West a distance of 92.47 feet;
6. North 69°34'04" West a distance of 52.93 feet to a point of curvature;
7. along the arc of a curve to the left having a central angle of 20°15'00", a radius of 337.00 feet, an arc length of 119.11 feet and whose chord bears North 79°41'34" West a distance of 118.49 feet;
8. North 89°49'04" West a distance of 4.92 feet to the **Point of Beginning**;

Containing 1,279,711 square feet or 29.378 acres, more or less.

#### **DESCRIPTION - FIGURE 54A Main Plume On-Base**

A part of the South Half of Section 4, a part of the Northeast Quarter of Section 9, and a part of the Northwest Quarter of Section 10, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the East Quarter Corner of said Section 4;

thence North 89°52'18" West, along the north line of the Southeast Quarter of said Section 4, a distance of 2370.92 feet;

thence South 00°07'42" West a distance of 30.00 feet to northerly line of Main TCE Plume-Groundwater within Parcel 4(A) described at Reception Number 2006011845 in the Clerk and Records Office of said City and County of Denver being the Northeast corner of Lowry Filing No. 11 of said City and County of Denver and the Point of Beginning;

thence along said northerly line and easterly line of said Main TCE Plume-Groundwater within Parcel 4(A) the following five (5) courses:

1. South 89°52'18" East a distance of 89.47 feet;
2. South 23°44'40" East a distance of 769.35 feet;
3. South 72°21'45" East a distance of 501.04 feet;
4. South 25°49'44" East a distance of 631.58 feet;
5. South 15°28'41" West a distance of 151.29 feet to a point of non-tangent curvature on the northerly line of a Parcel of Land described at Reception Number 2000137528 in said Clerk and Recorder's Office;

thence along said northerly line of a Parcel of Land described at Reception Number 2000137528 the following four (4) courses:

1. along the arc of a curve to the right having a central angle of 30°58'08", a radius of 712.50 feet, an arc length of 385.11 feet and whose chord bears North 87°23'44" East a distance of 380.44 feet;
2. South 06°32'39" East a distance of 34.74 feet;
3. South 89°50'19" East a distance of 35.51 feet to a point of non-tangent curvature;
4. along the arc of a curve to the left having a central angle of 43°39'25", a radius of 490.00 feet, an arc length of 373.36 feet and whose chord bears South 14°40'04" East a distance of 364.39 feet to the northwest corner of Main TCE Plume-Groundwater within Parcel 4(B) described at said Reception Number 2006011845;

thence along the northerly line, easterly line, southerly line and the westerly line of said Main TCE Plume-Groundwater within Parcel 4(B) the following twenty-six (26) courses:

1. South 36°29'47" East a distance of 128.17 feet;
2. South 90°00'00" East a distance of 155.49 feet;
3. South 36°29'47" East a distance of 704.82 feet;
4. South 57°31'52" East a distance of 703.51 feet;
5. North 53°24'05" East a distance of 68.43 feet;
6. South 64°33'43" East a distance of 156.02 feet;
7. South 53°27'42" West a distance of 58.01 feet;
8. South 36°17'24" East a distance of 381.43 feet;
9. South 17°56'49" East a distance of 238.64 feet;
10. South 32°44'51" East a distance of 356.26 feet;
11. South 67°06'32" East a distance of 309.90 feet;
12. North 82°51'23" East a distance of 511.06 feet;
13. South 38°32'02" East a distance of 355.36 feet;
14. North 55°13'32" East a distance of 139.45 feet to a point of non-tangent curve;
15. along the arc of a curve to the right having a central angle of 72°03'49", a radius of 380.00 feet, an arc length of 477.94 feet and whose chord bears South 07°29'33" West a distance of 447.06 feet;
16. South 43°31'28" West a distance of 549.19 feet to a point of curvature;
17. along the arc of a curve to the right having a central angle of 93°09'47", a radius of 150.00 feet, an arc length of 243.90 feet and whose chord bears North 89°53'39" West a distance of 217.91 feet;
18. North 43°18'45" West a distance of 343.85 feet;
19. North 40°43'41" West a distance of 761.58 feet;
20. North 35°04'31" West a distance of 417.42 feet;
21. North 39°16'25" West a distance of 600.98 feet;

22. South 53°24'05" West a distance of 58.18 feet;
23. North 43°35'10" West a distance of 146.09 feet;
24. North 52°26'55" West a distance of 623.56 feet;
25. North 41°13'02" West a distance of 75.00 feet;
26. North 45°55'58" West a distance of 470.27 feet to the southeast corner of a Parcel of Land described at Reception Number 2000137528 in said Clerk and Recorder's Office;

thence North 89°44'10" West, along the southerly line of said Parcel of Land described at Reception Number 2000137528, a distance of 433.18 feet;  
 thence North 05°24'59" West a distance of 371.02 feet;  
 thence South 70°19'10" West a distance of 434.55 feet;  
 thence South 00°00'00" East a distance of 444.24 feet;  
 thence North 88°55'43" East a distance of 464.42 feet;  
 thence North 05°24'59" West a distance of 12.49 feet to the easterly line of Main TCE Plume-Groundwater within Parcel 4(A) described at said Reception Number 2006011845;

thence along said easterly line, southerly line and the westerly line of said Main TCE Plume-Groundwater within Parcel 4(A) the following sixteen (16) courses:

1. South 89°44'10" East a distance of 134.18 feet;
2. South 00°04'42" West a distance of 502.15 feet;
3. North 89°44'58" West a distance of 431.06 feet;
4. North 00°19'49" West a distance of 130.06 feet;
5. North 89°57'23" West a distance of 91.72 feet;
6. North 00°00'00" West a distance of 87.47 feet;
7. North 50°16'15" West a distance of 238.52 feet;
8. North 40°45'51" West a distance of 165.09 feet;
9. North 03°40'12" West a distance of 150.35 feet;
10. North 19°29'51" East a distance of 132.64 feet;
11. North 24°50'04" West a distance of 162.56 feet;
12. North 89°36'09" West a distance of 210.32 feet;
13. North 00°28'46" East a distance of 12.84 feet to a point of curvature;
14. along the arc of a curve to the left having a central angle of 08°45'59", a radius of 734.75 feet, an arc length of 112.42 feet and whose chord bears North 03°54'13" West a distance of 112.31 feet;
15. North 06°12'02" West a distance of 630.98 feet;
16. North 06°12'02" West a distance of 238.38 feet to the most southerly corner of Main TCE Plume-Groundwater within Parcel 1 described at said Reception Number 2006011845;

thence along the westerly line and northerly line of said Main TCE Plume-Groundwater within Parcel 1 the following nine (9) courses:

1. North 41°30'47" West a distance of 553.53 feet;
2. North 12°41'48" West a distance of 49.74 feet to a point of non-tangent curvature;
3. along the arc of a curve to the right having a central angle of 1°09'17", a radius of 530.00 feet, an arc length of 10.68 feet and whose chord bears North 48°46'25" East a distance of 10.68 feet;
4. North 41°46'02" West a distance of 46.17 feet;
5. North 14°53'14" West a distance of 187.00 feet to a point of curvature;
6. along the arc of a curve to the left having a central angle of 53°13'20", a radius of 330.00 feet, an arc length of 306.54 feet and whose chord bears North 41°29'54" West a distance of 295.64 feet;
7. North 68°06'34" West a distance of 64.74 feet to a point of curvature;
8. along the arc of a curve to the right having a central angle of 71°39'12", a radius of 380.00 feet, an arc length of 475.22 feet and whose chord bears North 32°16'58" West a distance of 444.85 feet;
9. South 89°52'56" East a distance of 506.86 feet to the most westerly corner of Main TCE Plume-Groundwater within Parcel 4(A) described at said Reception Number 2006011845;

thence along the westerly line and northerly line of said Main TCE Plume-Groundwater within Parcel 1 the following two (2) courses:

1. South 89°52'56" East a distance of 6.99 feet;
2. South 89°52'18" East a distance of 268.42 feet to the Point of Beginning;

Containing 4,926,271 square feet or 113.092 acres, more or less.

**DESCRIPTION - FIGURE 54A**  
**1432 Source Area**

A part of the Southeast Quarter of Section 4 and a part of the Northeast Quarter of Section 9, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the South Quarter Corner of said Section 4;  
thence South 82°44'48" East, a distance of 1012.91 feet to the Point of Beginning;

thence North 00°00'00" East a distance of 444.24 feet;  
thence North 70°19'10" East a distance of 434.55 feet;  
thence South 05°24'59" East a distance of 584.51 feet;  
thence South 88°55'43" West a distance of 464.42 feet to the Point of Beginning;

Containing 226,222 square feet or 5.193 acres, more or less.

**DESCRIPTION - FIGURE 54A**  
**Main Plume Off-Base North of 17th Ave.**

A part of the Southwest Quarter of Section 28, a part of the Southeast Quarter of Section 29, a part of the Northeast Quarter of Section 32 and a part of Section 33, Township 3 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado, more particularly described as follows:

**Commencing** at the South Quarter Corner of said Section 33;  
thence North 31°22'38" East a distance of 1552.30 feet to a point 1325.00 feet north of the south line of the Southeast Quarter of said Section 33 and the **Point of Beginning**;

thence South 89°58'46" West, parallel with and 1325.00 feet north of said south line of the Southeast Quarter of Section 33, a distance of 1187.41 feet;  
thence North 09°46'56" West a distance of 335.67 feet to a point of curve;  
thence along the arc of a curve to the left having a radius of 2900.00 feet, a central angle of 30°17'20", an arc length of 1533.06 feet and whose chord bears North 24°55'36" West a distance of 1515.27 feet;  
thence North 40°04'16" West a distance of 792.77 feet;  
thence North 41°38'26" West a distance of 972.28 feet to a point of curve;  
thence along the arc of a curve to the right having a radius of 2500.00 feet, a central angle of 22°50'51", an arc length of 996.92 feet and whose chord bears North 30°13'00" West a distance of 990.32 feet to a point of compound curve;  
thence along the arc of a curve to the right having a radius of 1300.00 feet, a central angle of 33°47'26", an arc length of 766.68 feet and whose chord bears North 01°53'52" West a distance of 755.62 feet to a point of compound curve;  
thence along the arc of a curve to the right having a radius of 350.00 feet, a central angle of 18°07'24", an arc length of 110.71 feet and whose chord bears North 24°03'33" East a distance of 110.25 feet to a point of compound curve;  
thence along the arc of a curve to the right having a radius of 270.00 feet, a central angle of 67°42'57", an arc length of 319.10 feet and whose chord bears North 66°58'43" East a distance of 300.85 feet to a point of compound curve;  
thence along the arc of a curve to the right having a radius of 575.00 feet, a central angle of 20°48'09", an arc length of 208.77 feet and whose chord bears South 71°31'48" East a distance of 207.62 feet;  
thence South 61°07'44" East a distance of 184.24 feet to a point of curve;

thence along the arc of a curve to the right having a radius of 3000.00 feet, a central angle of 15°24'06", an arc length of 806.43 feet and whose chord bears South 53°25'41" East a distance of 804.01 feet; thence South 45°43'38" East a distance of 1161.69 feet to a point of curve; thence along the arc of a curve to the right having a radius of 3665.00 feet, a central angle of 29°14'21", an arc length of 1870.32 feet and whose chord bears South 31°06'28" East a distance of 1850.09 feet; thence South 16°29'17" East a distance of 850.36 feet to a point of curve; thence along the arc of a curve to the right having a radius of 6000.00 feet, a central angle of 9°58'50", an arc length of 1045.16 feet and whose chord bears South 11°29'52" East a distance of 1043.84 feet to the **Point of Beginning**.

Containing 7,201,575 square feet or 165.325 acres, more or less.

**DESCRIPTION - FIGURE 54A**  
**Main Plume Off-Base 11th to 17th Ave.**

A part of Section 4 and a part of the South Half of Section 33, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado, more particularly described as follows:

**Commencing** at the North Quarter corner of said Section 4; thence North 31°22'38" East a distance of 1552.30 feet to a point 1325.00 feet north of the north line of said Northeast Quarter of Section 4 and the **Point of Beginning**;

thence along the arc of a curve to the right having a radius of 6000.00 feet, a central angle of 2°47'10", an arc length of 291.77 feet and whose chord bears South 5°06'52" East a distance of 291.74 feet; thence South 03°43'17" East a distance of 800.48 feet to a point of curve; thence along the arc of a curve to the right having a radius of 4500.00 feet, a central angle of 19°27'27", an arc length of 1528.19 feet and whose chord bears South 06°00'27" West a distance of 1520.86 feet; thence South 15°44'10" West a distance of 294.78 feet; thence South 17°45'05" West a distance of 639.10 feet to a point of curve; thence along the arc of a curve to the left having a radius of 1200.00 feet, a central angle of 25°03'48", an arc length of 524.93 feet and whose chord bears South 05°13'11" West a distance of 520.75 feet; thence North 89°52'18" West, parallel with and 30.00 feet south of the south line of said Northeast Quarter of Section 4, a distance of 419.51 feet; thence North 89°52'56" West, parallel with and 30.00 feet south of the south line of the Northwest Quarter of said Section 4, a distance of 450.35 feet; thence North 30°49'24" West a distance of 463.33 feet; thence along the arc of a curve to the right having a radius of 1500.00 feet, a central angle of 14°30'57", an arc length of 380.03 feet and whose chord bears North 23°33'55" West a distance of 379.01 feet; thence North 16°18'26" West a distance of 512.11 feet to a point of curve; thence along the arc of a curve to the right having a radius of 300.00 feet, a central angle of 28°46'36", an arc length of 150.67 feet and whose chord bears North 01°55'08" West a distance of 149.10 feet to a point of compound curve; thence along the arc of a curve to the right having a radius of 105.00 feet, a central angle of 131°07'49", an arc length of 240.31 feet and whose chord bears North 78°02'04" East a distance of 191.19 feet; thence South 36°24'02" East a distance of 347.82 feet; thence South 32°39'29" East a distance of 250.06 feet to a point of curve; thence along the arc of a curve to the left having a radius of 215.00 feet, a central angle of 65°16'55", an arc length of 244.97 feet and whose chord bears South 65°17'57" East a distance of 231.93 feet; thence North 82°03'36" East a distance of 35.54 feet; thence along the arc of a curve to the left having a radius of 200.00 feet, a central angle of 69°29'20", an arc length of 242.56 feet and whose chord bears North 47°18'55" East a distance of 227.97 feet; thence North 12°34'15" East a distance of 8.49 feet to a point of curve; thence along the arc of a curve to the left having a radius of 2150.00 feet, a central angle of 20°16'07", an arc length of 760.57 feet and whose chord bears North 02°26'12" East a distance of 756.61 feet; thence North 07°41'52" West a distance of 958.60 feet;

thence North 09°46'56" West a distance of 1318.05 feet;  
thence North 89°58'46" East, parallel with and 1325.00 feet north of said north line of the Northeast Quarter of Section 4, a distance of 1187.41 feet to the **Point of Beginning**.

Containing 4,221,670 square feet or 96.916 acres, more or less.

**DESCRIPTION - FIGURE 54B**  
**HQ Plume**

A part of the West Half of Section 9, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the West Quarter Corner of said Section 9;  
thence North 00°10'10" East, along the west line of the Northwest Quarter of said Section 9, a distance of 37.00 feet;  
thence South 89°49'04" East, parallel with the south line of said Northwest Quarter, a distance of 30.00 feet to the easterly line of Quebec Street and the Point of Beginning;

thence North 00°10'10" East, along said easterly line, a distance of 2,096.27 feet to a corner on the west line of Area 4 as described at Reception Number 9800174373 in the Clerk and Recorders Office of said City and County of Denver;

thence along the southwesterly line of said Area 4 the following seven (7) courses:

1. South 09°41'03" East a distance of 185.07 feet;
2. South 26°06'15" East a distance of 317.47 feet;
3. South 00°30'20" West a distance of 120.51 feet;
4. South 61°54'11" East a distance of 363.78 feet;
5. South 00°01'05" East a distance of 258.88 feet;
6. South 36°27'47" East a distance of 216.39 feet;
7. South 74°49'56" East a distance of 156.06 feet to the northwest corner of Area 9 as described at Reception Number 2000013500 in said Clerk and Recorders Office;

thence South 36°28'38" East, along the southwesterly line of said Area 9, a distance of 608.42 feet to a point on the northerly line of Area 2 as described at Reception Number 9800087078 in said Clerk and Recorders Office;

thence along said northerly line the following eight (8) courses:

1. South 53°32'18" West a distance of 744.29 feet;
2. North 35°20'40" West a distance of 74.00 feet to a point of non-tangent curvature;
3. along the arc of a curve to the right having a central angle of 35°31'36", a radius of 263.00 feet, an arc length of 163.08 feet and whose chord bears South 72°25'08" West a distance of 160.48 feet;
4. North 89°49'04" West a distance of 81.42 feet to a point of curvature;
5. along the arc of a curve to the right having a central angle of 20°15'00", a radius of 263.00 feet, an arc length of 92.95 feet and whose chord bears North 79°41'34" West a distance of 92.47 feet;
6. North 69°34'04" West a distance of 52.93 feet to a point of curvature;
7. along the arc of a curve to the left having a central angle of 20°15'00", a radius of 337.00 feet, an arc length of 119.11 feet and whose chord bears North 79°41'34" West a distance of 118.49 feet;
8. North 89°49'04" West a distance of 4.92 feet to the **Point of Beginning**;

Containing 1,183,575 square feet or 27.171 acres, more or less.

**DESCRIPTION - FIGURE 54B**  
**FTZ Plume (North)**

A part of the Southeast Quarter of Section 10, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado, more particularly described as follows:

**Commencing** at the East Quarter Corner of said Section 10;  
thence South 87°25'19" West a distance of 1374.75 feet to a point 50.00 feet west of the east line of the Northwest Quarter of said Southeast Quarter of Section 10 and the **Point of Beginning**;

Thence South 00°06'26" West, parallel with and 50.00 west of said east line, a distance of 300.00 feet;  
thence North 89°53'34" West a distance of 275.00 feet;  
thence North 00°06'26" East a distance of 300.00 feet;

thence South 89°53'34" East a distance of 275.00 feet to the **Point of Beginning**.

Containing 82,500 square feet or 1.894 acres, more or less.

**DESCRIPTION - FIGURE 54B  
FTZ Plume (South)**

A part of the Southeast Quarter of Section 10, Township 4 South, Range 67 West of the Sixth Principal Meridian, City of Aurora, County of Arapahoe, State of Colorado, more particularly described as follows:

**Commencing** at the East Quarter corner of said Section 10;  
thence South 49°32'32" West a distance of 1583.91 feet to the **Point of Beginning**;

thence South 89°53'34" East a distance of 225.00 feet;  
thence South 00°06'26" West a distance of 225.00 feet;  
thence North 89°53'34" West a distance of 225.00 feet;  
thence North 00°06'26" East a distance of 225.00 feet to the **Point of Beginning**.

Containing 50,625 square feet or 1.162 acres, more or less.

**DESCRIPTION - FIGURE 54B  
OFR Source Area**

A part of the Northwest Quarter of Section 10, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the Northwest Corner of said Section 10;  
thence South 42°12'35" East a distance of 1714.55 feet to the intersection of the centerline of 5<sup>th</sup> Avenue and the easterly line of Main TCE Plume-Groundwater within Parcel 4(B) described at Reception Number 2006011845 in the Clerk and Records Office of said City and County of Denver and the Point of Beginning;

thence along said easterly line and southerly line of said Main TCE Plume-Groundwater within Parcel 4(B) the following ten (10) courses:

1. South 67°06'32" East a distance of 307.11 feet;
2. North 82°51'23" East a distance of 511.06 feet;
3. South 38°32'02" East a distance of 355.36 feet;
4. North 55°13'32" East a distance of 139.45 feet;
5. along the arc of a curve to the right having a central angle of 72°03'49", a radius of 380.00 feet, an arc length of 477.94 feet and whose chord bears South 07°29'33" West a distance of 447.06 feet;
6. South 43°31'28" West a distance of 549.19 feet to a point of curvature;

7. along the arc of a curve to the right having a central angle of 93°09'47", a radius of 150.00 feet, an arc length of 243.90 feet and whose chord bears North 89°53'39" West a distance of 217.91 feet;
8. North 43°18'45" West a distance of 343.85 feet;
9. North 40°43'41" West a distance of 761.58 feet;
10. North 35°04'31" West a distance of 59.86 feet to said centerline of 5<sup>th</sup> Avenue;

thence North 53°27'42" East, along said centerline, a distance of 367.97 feet to the Point of Beginning;

Containing 978,055 square feet or 22.453 acres, more or less.

**DESCRIPTION - FIGURE 54B**  
**Main Plume On-Base**

A part of the South Half of Section 4, a part of the Northeast Quarter of Section 9, and a part of the Northwest Quarter of Section 10, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the East Quarter Corner of said Section 4;  
thence North 89°52'18" West, along the north line of the Southeast Quarter of said Section 4, a distance of 2370.92 feet;  
thence South 00°07'42" West a distance of 30.00 feet to northerly line of Main TCE Plume-Groundwater within Parcel 4(A) described at Reception Number 2006011845 in the Clerk and Records Office of said City and County of Denver being the Northeast corner of Lowry Filing No. 11 of said City and County of Denver and the Point of Beginning;

thence along said northerly line and easterly line of said Main TCE Plume-Groundwater within Parcel 4(A) the following five (5) courses:

1. South 89°52'18" East a distance of 89.47 feet;
2. South 23°44'40" East a distance of 769.35 feet;
3. South 72°21'45" East a distance of 501.04 feet;
4. South 25°49'44" East a distance of 631.58 feet;
5. South 15°28'41" West a distance of 151.29 feet to a point of non-tangent curvature on the northerly line of a Parcel of Land described at Reception Number 2000137528 in said Clerk and Recorder's Office;

thence along said northerly line of a Parcel of Land described at Reception Number 2000137528 the following four (4) courses:

1. along the arc of a curve to the right having a central angle of 30°58'08", a radius of 712.50 feet, an arc length of 385.11 feet and whose chord bears North 87°23'44" East a distance of 380.44 feet;
2. South 06°32'39" East a distance of 34.74 feet;
3. South 89°50'19" East a distance of 35.51 feet to a point of non-tangent curvature;
4. along the arc of a curve to the left having a central angle of 43°39'25", a radius of 490.00 feet, an arc length of 373.36 feet and whose chord bears South 14°40'04" East a distance of 364.39 feet to the northwest corner of Main TCE Plume-Groundwater within Parcel 4(B) described at said Reception Number 2006011845;

thence along the northerly line, easterly line, southerly line and the westerly line of said Main TCE Plume-Groundwater within Parcel 4(B) the following twenty-six (26) courses:

1. South 36°29'47" East a distance of 128.17 feet;
2. South 90°00'00" East a distance of 155.49 feet;
3. South 36°29'47" East a distance of 704.82 feet;
4. South 57°31'52" East a distance of 703.51 feet;
5. North 53°24'05" East a distance of 68.43 feet;
6. South 64°33'43" East a distance of 156.02 feet;

7. South 53°27'42" West a distance of 58.01 feet;
8. South 36°17'24" East a distance of 381.43 feet;
9. South 17°56'49" East a distance of 238.64 feet;
10. South 32°44'51" East a distance of 356.26 feet;
11. South 67°06'32" East a distance of 309.90 feet;
12. North 82°51'23" East a distance of 511.06 feet;
13. South 38°32'02" East a distance of 355.36 feet;
14. North 55°13'32" East a distance of 139.45 feet to a point of non-tangent curve;
15. along the arc of a curve to the right having a central angle of 72°03'49", a radius of 380.00 feet, an arc length of 477.94 feet and whose chord bears South 07°29'33" West a distance of 447.06 feet;
16. South 43°31'28" West a distance of 549.19 feet to a point of curvature;
17. along the arc of a curve to the right having a central angle of 93°09'47", a radius of 150.00 feet, an arc length of 243.90 feet and whose chord bears North 89°53'39" West a distance of 217.91 feet;
18. North 43°18'45" West a distance of 343.85 feet;
19. North 40°43'41" West a distance of 761.58 feet;
20. North 35°04'31" West a distance of 417.42 feet;
21. North 39°16'25" West a distance of 600.98 feet;
22. South 53°24'05" West a distance of 58.18 feet;
23. North 43°35'10" West a distance of 146.09 feet;
24. North 52°26'55" West a distance of 623.56 feet;
25. North 41°13'02" West a distance of 75.00 feet;
26. North 45°55'58" West a distance of 470.27 feet to the southeast corner of a Parcel of Land described at Reception Number 2000137528 in said Clerk and Recorder's Office;

thence North 89°44'10" West, along the southerly line of said Parcel of Land described at Reception Number 2000137528, a distance of 433.18 feet;

thence North 05°24'59" West a distance of 371.02 feet;

thence South 70°19'10" West a distance of 434.55 feet;

thence South 00°00'00" East a distance of 444.24 feet;

thence North 88°55'43" East a distance of 464.42 feet;

thence North 05°24'59" West a distance of 12.49 feet to the easterly line of Main TCE Plume-Groundwater within Parcel 4(A) described at said Reception Number 2006011845;

thence along said easterly line, southerly line and the westerly line of said Main TCE Plume-Groundwater within Parcel 4(A) the following sixteen (16) courses:

1. South 89°44'10" East a distance of 134.18 feet;
2. South 00°04'42" West a distance of 502.15 feet;
3. North 89°44'58" West a distance of 431.06 feet;
4. North 00°19'49" West a distance of 130.06 feet;
5. North 89°57'23" West a distance of 91.72 feet;
6. North 00°00'00" West a distance of 87.47 feet;
7. North 50°16'15" West a distance of 238.52 feet;
8. North 40°45'51" West a distance of 165.09 feet;
9. North 03°40'12" West a distance of 150.35 feet;
10. North 19°29'51" East a distance of 132.64 feet;
11. North 24°50'04" West a distance of 162.56 feet;
12. North 89°36'09" West a distance of 210.32 feet;
13. North 00°28'46" East a distance of 12.84 feet to a point of curvature;
14. along the arc of a curve to the left having a central angle of 08°45'59", a radius of 734.75 feet, an arc length of 112.42 feet and whose chord bears North 03°54'13" West a distance of 112.31 feet;
15. North 06°12'02" West a distance of 630.98 feet;
16. North 06°12'02" West a distance of 238.38 feet to the most southerly corner of Main TCE Plume-Groundwater within Parcel 1 described at said Reception Number 2006011845;

thence along the westerly line and northerly line of said Main TCE Plume-Groundwater within Parcel 1 the following nine (9) courses:

1. North 41°30'47" West a distance of 553.53 feet;
2. North 12°41'48" West a distance of 49.74 feet to a point of non-tangent curvature;
3. along the arc of a curve to the right having a central angle of 1°09'17", a radius of 530.00 feet, an arc length of 10.68 feet and whose chord bears North 48°46'25" East a distance of 10.68 feet;
4. North 41°46'02" West a distance of 46.17 feet;
5. North 14°53'14" West a distance of 187.00 feet to a point of curvature;
6. along the arc of a curve to the left having a central angle of 53°13'20", a radius of 330.00 feet, an arc length of 306.54 feet and whose chord bears North 41°29'54" West a distance of 295.64 feet;
7. North 68°06'34" West a distance of 64.74 feet to a point of curvature;
8. along the arc of a curve to the right having a central angle of 71°39'12", a radius of 380.00 feet, an arc length of 475.22 feet and whose chord bears North 32°16'58" West a distance of 444.85 feet;
9. South 89°52'56" East a distance of 506.86 feet to the most westerly corner of Main TCE Plume-Groundwater within Parcel 4(A) described at said Reception Number 2006011845;

thence along the westerly line and northerly line of said Main TCE Plume-Groundwater within Parcel 1 the following two (2) courses:

1. South 89°52'56" East a distance of 6.99 feet;
2. South 89°52'18" East a distance of 268.42 feet to the Point of Beginning;

Containing 4,926,271 square feet or 113.092 acres, more or less.

**Excepting therefrom (CT Source Area):**

A part of the Southeast Quarter of Section 4, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

**Commencing** at the South Quarter Corner of said Section 4;  
thence North 40°32'20" East, a distance of 1211.63 feet to the **Point of Beginning**;

thence North 04°07'47" West a distance of 635.58 feet;  
thence North 88°59'02" East a distance of 303.02 feet;  
thence South 03°29'14" East a distance of 638.04 feet;  
thence South 89°31'37" West a distance of 296.02 feet to the **Point of Beginning**;  
Containing 190,459 square feet or 4.372 acres, more or less.

**Excepting therefrom (OFR Source Area):**

A part of the Northwest Quarter of Section 10, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

**Commencing** at the Northwest Corner of said Section 10;  
thence South 42°12'35" East a distance of 1714.55 feet to the intersection of the centerline of 5<sup>th</sup> Avenue and the easterly line of Main TCE Plume-Groundwater within Parcel 4(B) described at Reception Number 2006011845 in the Clerk and Records Office of said City and County of Denver and the **Point of Beginning**;

thence along said easterly line and southerly line of said Main TCE Plume-Groundwater within Parcel 4(B) the following ten (10) courses:

1. South 67°06'32" East a distance of 307.11 feet;
2. North 82°51'23" East a distance of 511.06 feet;
3. South 38°32'02" East a distance of 355.36 feet;
4. North 55°13'32" East a distance of 139.45 feet;

5. along the arc of a curve to the right having a central angle of 72°03'49", a radius of 380.00 feet, an arc length of 477.94 feet and whose chord bears South 07°29'33" West a distance of 447.06 feet;
6. South 43°31'28" West a distance of 549.19 feet to a point of curvature;
7. along the arc of a curve to the right having a central angle of 93°09'47", a radius of 150.00 feet, an arc length of 243.90 feet and whose chord bears North 89°53'39" West a distance of 217.91 feet;
8. North 43°18'45" West a distance of 343.85 feet;
9. North 40°43'41" West a distance of 761.58 feet;
10. North 35°04'31" West a distance of 59.86 feet to said centerline of 5<sup>th</sup> Avenue;

thence North 53°27'42" East, along said centerline, a distance of 367.97 feet to the **Point of Beginning**;

Containing 978,055 square feet or 22.453 acres, more or less.

Resulting Area contains 3,757,757 square feet or 86.267 acres, more or less.

**DESCRIPTION - FIGURE 54B**  
**1432 Source Area**

A part of the Southeast Quarter of Section 4 and a part of the Northeast Quarter of Section 9, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the South Quarter Corner of said Section 4;  
thence South 82°44'48" East, a distance of 1012.91 feet to the Point of Beginning;

thence North 00°00'00" East a distance of 444.24 feet;  
thence North 70°19'10" East a distance of 434.55 feet;  
thence South 05°24'59" East a distance of 584.51 feet;  
thence South 88°55'43" West a distance of 464.42 feet to the Point of Beginning;

Containing 226,222 square feet or 5.193 acres, more or less.

**DESCRIPTION - FIGURE 54B**  
**CT Source Area**

A part of the Southeast Quarter of Section 4, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado being more particularly described as follows:

Commencing at the South Quarter Corner of said Section 4;  
thence North 40°32'20" East, a distance of 1211.63 feet to the Point of Beginning;

thence North 04°07'47" West a distance of 635.58 feet;  
thence North 88°59'02" East a distance of 303.02 feet;  
thence South 03°29'14" East a distance of 638.04 feet;  
thence South 89°31'37" West a distance of 296.02 feet to the Point of Beginning;

Containing 190,459 square feet or 4.372 acres, more or less.

**DESCRIPTION - FIGURE 54B**  
**Main Plume Off-Base**

(Main Plume Off-Base North of 17th Ave.):

A part of the Southwest Quarter of Section 28, a part of the Southeast Quarter of Section 29, a part of the Northeast Quarter of Section 32 and a part of Section 33, Township 3 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado, more particularly described as follows:

**Commencing** at the South Quarter Corner of said Section 33;

thence North 31°22'38" East a distance of 1552.30 feet to a point 1325.00 feet north of the south line of the Southeast Quarter of said Section 33 and the Point of Beginning;

thence South 89°58'46" West, parallel with and 1325.00 feet north of said south line of the Southeast Quarter of Section 33, a distance of 1187.41 feet;

thence North 09°46'56" West a distance of 335.67 feet to a point of curve;

thence along the arc of a curve to the left having a radius of 2900.00 feet, a central angle of 30°17'20", an arc length of 1533.06 feet and whose chord bears North 24°55'36" West a distance of 1515.27 feet;

thence North 40°04'16" West a distance of 792.77 feet;

thence North 41°38'26" West a distance of 972.28 feet to a point of curve;

thence along the arc of a curve to the right having a radius of 2500.00 feet, a central angle of 22°50'51", an arc length of 996.92 feet and whose chord bears North 30°13'00" West a distance of 990.32 feet to a point of compound curve;

thence along the arc of a curve to the right having a radius of 1300.00 feet, a central angle of 33°47'26", an arc length of 766.68 feet and whose chord bears North 01°53'52" West a distance of 755.62 feet to a point of compound curve;

thence along the arc of a curve to the right having a radius of 350.00 feet, a central angle of 18°07'24", an arc length of 110.71 feet and whose chord bears North 24°03'33" East a distance of 110.25 feet to a point of compound curve;

thence along the arc of a curve to the right having a radius of 270.00 feet, a central angle of 67°42'57", an arc length of 319.10 feet and whose chord bears North 66°58'43" East a distance of 300.85 feet to a point of compound curve;

thence along the arc of a curve to the right having a radius of 575.00 feet, a central angle of 20°48'09", an arc length of 208.77 feet and whose chord bears South 71°31'48" East a distance of 207.62 feet;

thence South 61°07'44" East a distance of 184.24 feet to a point of curve;

thence along the arc of a curve to the right having a radius of 3000.00 feet, a central angle of 15°24'06", an arc length of 806.43 feet and whose chord bears South 53°25'41" East a distance of 804.01 feet;

thence South 45°43'38" East a distance of 1161.69 feet to a point of curve;

thence along the arc of a curve to the right having a radius of 3665.00 feet, a central angle of 29°14'21", an arc length of 1870.32 feet and whose chord bears South 31°06'28" East a distance of 1850.09 feet;

thence South 16°29'17" East a distance of 850.36 feet to a point of curve;

thence along the arc of a curve to the right having a radius of 6000.00 feet, a central angle of 9°58'50", an arc length of 1045.16 feet and whose chord bears South 11°29'52" East a distance of 1043.84 feet to the

**Point of Beginning.**

Containing 7,201,575 square feet or 165.325 acres, more or less.

Together with (Main Plume Off-Base 11th to 17th Ave.):

A part of Section 4 and a part of the South Half of Section 33, Township 4 South, Range 67 West of the Sixth Principal Meridian, City and County of Denver, State of Colorado, more particularly described as follows:

**Commencing** at the North Quarter corner of said Section 4;

thence North 31°22'38" East a distance of 1552.30 feet to a point 1325.00 feet north of the north line of said Northeast Quarter of Section 4 and the **Point of Beginning**;

thence along the arc of a curve to the right having a radius of 6000.00 feet, a central angle of 2°47'10", an arc length of 291.77 feet and whose chord bears South 5°06'52" East a distance of 291.74 feet;

thence South 03°43'17" East a distance of 800.48 feet to a point of curve;

thence along the arc of a curve to the right having a radius of 4500.00 feet, a central angle of 19°27'27", an arc length of 1528.19 feet and whose chord bears South 06°00'27" West a distance of 1520.86 feet; thence South 15°44'10" West a distance of 294.78 feet; thence South 17°45'05" West a distance of 639.10 feet to a point of curve; thence along the arc of a curve to the left having a radius of 1200.00 feet, a central angle of 25°03'48", an arc length of 524.93 feet and whose chord bears South 05°13'11" West a distance of 520.75 feet; thence North 89°52'18" West, parallel with and 30.00 feet south of the south line of said Northeast Quarter of Section 4, a distance of 419.51 feet; thence North 89°52'56" West, parallel with and 30.00 feet south of the south line of the Northwest Quarter of said Section 4, a distance of 450.35 feet; thence North 30°49'24" West a distance of 463.33 feet; thence along the arc of a curve to the right having a radius of 1500.00 feet, a central angle of 14°30'57", an arc length of 380.03 feet and whose chord bears North 23°33'55" West a distance of 379.01 feet; thence North 16°18'26" West a distance of 512.11 feet to a point of curve; thence along the arc of a curve to the right having a radius of 300.00 feet, a central angle of 28°46'36", an arc length of 150.67 feet and whose chord bears North 01°55'08" West a distance of 149.10 feet to a point of compound curve; thence along the arc of a curve to the right having a radius of 105.00 feet, a central angle of 131°07'49", an arc length of 240.31 feet and whose chord bears North 78°02'04" East a distance of 191.19 feet; thence South 36°24'02" East a distance of 347.82 feet; thence South 32°39'29" East a distance of 250.06 feet to a point of curve; thence along the arc of a curve to the left having a radius of 215.00 feet, a central angle of 65°16'55", an arc length of 244.97 feet and whose chord bears South 65°17'57" East a distance of 231.93 feet; thence North 82°03'36" East a distance of 35.54 feet; thence along the arc of a curve to the left having a radius of 200.00 feet, a central angle of 69°29'20", an arc length of 242.56 feet and whose chord bears North 47°18'55" East a distance of 227.97 feet; thence North 12°34'15" East a distance of 8.49 feet to a point of curve; thence along the arc of a curve to the left having a radius of 2150.00 feet, a central angle of 20°16'07", an arc length of 760.57 feet and whose chord bears North 02°26'12" East a distance of 756.61 feet; thence North 07°41'52" West a distance of 958.60 feet; thence North 09°46'56" West a distance of 1318.05 feet; thence North 89°58'46" East, parallel with and 1325.00 feet north of said north line of the Northeast Quarter of Section 4, a distance of 1187.41 feet to the **Point of Beginning**.

Containing 4,221,670 square feet or 96.916 acres, more or less.

Total Area contains 11,434,245 square feet or 262.241 acres, more or less.

**(55) OIL AND GAS FIELDS OF LARIMER, WELD, BOULDER, BROOMFIELD, ADAMS, DENVER, JEFFERSON, AND ARAPAHOE COUNTIES, COLORADO**

**(a) Specified Area: The confined groundwater within the Admire, Amazon, Council Grove, Missouri, Atoka, Blaine, D Sand, Dakota, Denver Basin Combined Disposal Zone, Entrada, J Sand, and Lyons Formations underlying the area within one mile of the following points expressed in latitudes and longitudes. These areas are included in Figure 55 on page 111.**

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>39.60821, -104.18232</u>	<u>40.19165, -104.70546</u>	<u>40.59307, -104.528182</u>
<u>39.620692, -104.325724</u>	<u>40.19204, -104.69897</u>	<u>40.60263, -104.02873</u>

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>39.75233, -104.03303</u>	<u>40.20999, -104.71662</u>	<u>40.60989, -104.03454</u>
<u>39.77477, -103.9422</u>	<u>40.21683, -104.71985</u>	<u>40.61325, -104.035203</u>
<u>39.80714, -104.12067</u>	<u>40.2202, -104.34536</u>	<u>40.61353, -104.137548</u>
<u>39.84491, -104.42586</u>	<u>40.23112, -104.5949</u>	<u>40.63478, -104.109167</u>
<u>39.869842, -103.745884</u>	<u>40.2739, -104.69397</u>	<u>40.63974, -104.06681</u>
<u>39.88509, -104.36927</u>	<u>40.28776, -104.67896</u>	<u>40.63977, -104.06021</u>
<u>39.89082, -104.70847</u>	<u>40.297707, -104.750232</u>	<u>40.6938, -103.8507</u>
<u>40.01617, -104.89653</u>	<u>40.29801, -104.7498</u>	<u>40.724926, -104.289846</u>
<u>40.016564, -104.887081</u>	<u>40.320297, -104.566164</u>	<u>40.748568, -103.990383</u>
<u>40.022538, -104.889127</u>	<u>40.32065, -104.5658</u>	<u>40.76933, -104.21866</u>
<u>40.025055, -104.816566</u>	<u>40.32083, -104.5664</u>	<u>40.808551, -103.829968</u>
<u>40.10297, -104.5828</u>	<u>40.36575, -104.18842</u>	<u>40.818864, -103.794093</u>
<u>40.10745, -104.5755</u>	<u>40.36952, -104.41591</u>	<u>40.82061, -104.16246</u>
<u>40.10772, -104.57564</u>	<u>40.37589, -104.6125</u>	<u>40.8265, -104.14517</u>
<u>40.117601, -104.605522</u>	<u>40.4383, -104.628</u>	<u>40.83597, -104.16035</u>
<u>40.1254, -104.88537</u>	<u>40.47566, -104.17332</u>	<u>40.89378, -104.33552</u>
<u>40.12545, -104.88537</u>	<u>40.4897, -104.47285</u>	<u>40.89393, -104.33553</u>
<u>40.12551, -104.88537</u>	<u>40.52414, -104.41437</u>	<u>40.955617, -104.362222</u>
<u>40.13705, -104.47264</u>	<u>40.52414, -104.41672</u>	<u>40.96828, -103.661653</u>
<u>40.13715, -104.47259</u>	<u>40.52514, -104.62801</u>	<u>40.976305, -103.661501</u>
<u>40.13947, -104.46355</u>	<u>40.52524, -104.62813</u>	<u>40.979434, -103.656559</u>
<u>40.97972, -103.66626</u>	<u>40.982843, -103.661408</u>	-

(b) Classifications: The classification of the groundwater in these formations is:

Limited Use and Quality

(c) Groundwater Quality Standards: The groundwater quality standards included in Table 1 through 4 of the Basic Standards for Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined groundwater of these formations within the specified area.

The groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the groundwater in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas, otherwise all standards from Table A apply.

**(56) OIL AND GAS FIELDS OF MORGAN, LOGAN, SEDGWICK, PHILLIPS, WASHINGTON, AND YUMA COUNTIES, COLORADO**

(a) Specified Area: The confined groundwater within the D Sand, Dakota, Fountain, J Sand, J-3 Sand, Lakota, Lower Satanka, Morrison, Lansing, Kansas City, Lyons, Marmaton, Morrison, Niobrara, Regan, Virgil, and Wolf Camp formations underlying the area within one mile of the following latitudes and longitudes. These areas are included in Figure 56 on page 112.

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>37.02281, -104.83255</u>	<u>37.19594, -104.67421</u>
<u>37.0233, -104.78275</u>	<u>37.20633, -104.898526</u>
<u>37.0687, -104.92571</u>	<u>37.21621, -104.78017</u>
<u>37.09282, -104.73615</u>	<u>37.22741, -104.69844</u>
<u>37.09594, -104.61552</u>	<u>37.25324, -104.66298</u>
<u>37.1031, -104.98617</u>	<u>37.25924, -104.92553</u>
<u>37.112446, -104.337833</u>	<u>37.29085, -104.82886</u>
<u>37.11612, -104.68325</u>	<u>37.29984, -104.72925</u>
<u>37.13313, -104.69708</u>	<u>37.30479, -104.78297</u>
<u>37.15063, -104.85969</u>	<u>37.65584, -105.18078</u>
<u>37.16013, -104.79724</u>	-

(b) Classifications: The classification of the groundwater in these Formations is:

Limited Use and Quality

(c) Groundwater Quality Standards: The groundwater quality standards included in Table 1 through 4 of the Basic Standards for Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined groundwater of these formations within the specified area.

The groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the groundwater in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas, otherwise all standards from Table A apply.

**(57) OIL AND GAS FIELDS OF DOUGLAS, ELBERT, LINCOLN, KIT CARSON, EL PASO, CHEYENNE, PUBELO, FREMONT, CROWLEY, KIOWA, OTERO, BENT, PROWERS, AND BACA COUNTIES, COLORADO**

(a) Specified Area: The confined groundwater within the Arbuckle, Atoka, Ceder Hills, Cherokee, J Sand, Keyes, Lansing, Kansas City, Lyons, Marmaton, Mississippian, Morrow, Osage, Simpson, Spergen, Topeka, Wabaunsee, Warsaw, and St Joe Formations underlying the area within one mile of the following latitudes and longitudes. These areas are included in Figure 57 on page 113.

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>37.114207, -102.182279</u>	<u>38.60726, -102.7447</u>	<u>38.9406, -102.17244</u>
<u>37.114207, -102.182636</u>	<u>38.66704, -102.50777</u>	<u>38.9411, -102.17841</u>
<u>37.156613, -102.279001</u>	<u>38.681802, -102.413502</u>	<u>38.9645, -102.50232</u>
<u>38.36436, -102.31397</u>	<u>38.72459, -102.53347</u>	<u>39.0107, -103.23166</u>
<u>38.41314, -102.47106</u>	<u>38.76729, -102.39513</u>	<u>39.0217, -103.27255</u>
<u>38.413637, -102.443583</u>	<u>38.78962, -102.38061</u>	<u>39.0218, -103.27713</u>
<u>38.417051, -102.439426</u>	<u>38.82221, -102.064959</u>	<u>39.09372, -102.52811</u>
<u>38.427871, -103.017976</u>	<u>38.85892, -103.56356</u>	<u>39.15871, -103.5777</u>
<u>38.43131, -102.48017</u>	<u>38.86533, -102.36805</u>	<u>39.16983, -102.4435</u>
<u>38.449529, -102.425447</u>	<u>38.87939, -102.33112</u>	<u>39.16994, -103.3729</u>
<u>38.457213, -102.425389</u>	<u>38.884398, -102.073721</u>	<u>39.17317, -103.58226</u>
<u>38.464, -102.67829</u>	<u>38.89058, -102.30781</u>	<u>39.20963, -103.62828</u>
<u>38.51632, -102.076454</u>	<u>38.89525, -102.25985</u>	<u>39.249543, -103.712168</u>

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>38.518887, -102.094684</u>	<u>38.92804, -102.18186</u>	<u>39.52291, -103.41915</u>
<u>38.52907, -102.44091</u>	<u>38.93033, -103.41655</u>	<u>39.5274, -103.41428</u>
<u>38.59824, -102.74739</u>	<u>38.9354, -102.17292</u>	<u>39.53389, -103.4189</u>
<u>38.60723, -102.73716</u>	-	-

(b) Classifications: The classification of the groundwater in these formations is:

Limited Use and Quality

(c) Groundwater Quality Standards: The groundwater quality standards included in Table 1 through 4 of the Basic Standards for Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined groundwater of these formations within the specified area.

The groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the groundwater in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas, otherwise all standards from Table A apply.

**(58) OIL AND GAS FIELDS OF SAUGUACHE, RIO GRANDE, ALAMOSA, HUERFANO, COSTILLA, AND LAS ANIMAS COUNTIES, COLORADO**

(a) Specified Area: The confined groundwater within the Apishapa, Dakota, Dockum, Entrada, Purgatorie, and Dockus Formations underlying the area within one mile of the following latitudes and longitudes. These areas are included in Figure 58 on page 114.

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>37.006324, -107.927951</u>	<u>37.072197, -107.537786</u>	<u>37.17483, -107.549851</u>
<u>37.012409, -108.103584</u>	<u>37.073257, -107.990024</u>	<u>37.175339, -107.737354</u>
<u>37.01614, -107.664718</u>	<u>37.079314, -107.933402</u>	<u>37.188694, -107.756376</u>
<u>37.01683, -107.812262</u>	<u>37.110708, -108.071601</u>	<u>37.190883, -107.820185</u>
<u>37.029068, -107.454968</u>	<u>37.111102, -107.38548</u>	<u>37.21553, -107.630964</u>

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>37.03125, -108.12316</u>	<u>37.11363, -107.76532</u>	<u>37.215631, -107.631485</u>
<u>37.03584, -107.752744</u>	<u>37.128716, -107.829904</u>	<u>37.217134, -107.565823</u>
<u>37.045615, -108.114562</u>	<u>37.129542, -107.771592</u>	<u>37.23028, -107.75666</u>
<u>37.049733, -107.898735</u>	<u>37.1304, -108.0406</u>	<u>37.23455, -107.74417</u>
<u>37.056222, -107.626236</u>	<u>37.135318, -107.889249</u>	<u>37.253829, -107.802101</u>
<u>37.061756, -107.856344</u>	<u>37.14461, -107.97116</u>	<u>37.261693, -107.799793</u>
<u>37.065566, -107.512026</u>	<u>37.172887, -107.897749</u>	<u>37.264746, -107.561634</u>
<u>37.065683, -107.817539</u>	<u>37.173386, -107.64186</u>	<u>37.273754, -107.608827</u>

(b) Classifications: The classification of the groundwater in these formations is:

Limited Use and Quality

(c) Groundwater Quality Standards: The groundwater quality standards included in Table 1 through 4 of the Basic Standards for Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined groundwater of these formations within the specified area.

The groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the groundwater in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas, otherwise all standards from Table A apply.

**(59) OIL AND GAS FIELDS OF LA PLATA AND ARCHULETA COUNTIES, COLORADO**

(a) Specified Area: The confined groundwater within the Bluff Sandstone, Entrada, Burro Canyon, Cliff House, Dakota, Morrison, Fruitland Coal, Lewis Shale, Pictured Cliffs, and Point Lookout Formations underlying the area within one mile of the following latitudes and longitudes. These areas are included in Figure 59 on page 115.

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>37.20854, -109.042823</u>	<u>37.193488, -109.04167</u>

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>37.23511, -109.011413</u>	<u>37.524157, -108.803256</u>
<u>37.241989, -109.020183</u>	<u>37.54115, -108.95168</u>
<u>37.455304, -108.901599</u>	<u>37.559758, -108.83033</u>
<u>37.464188, -108.721343</u>	<u>37.58575, -109.00764</u>
<u>37.46546, -108.92843</u>	<u>38.0364, -108.62491</u>
<u>37.52239, -108.93618</u>	

(b) Classifications: The classification of the groundwater in these formations is:

Limited Use and Quality

(c) Groundwater Quality Standards: The groundwater quality standards included in Table 1 through 4 of the Basic Standards for Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined groundwater of these formations within the specified area.

The groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the groundwater in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas, otherwise all standards from Table A apply.

**(60) OIL AND GAS FIELDS OF MONTROSE, SAN MIGUEL, DOLORES, AND MONTEZUMA COUNTIES, COLORADO**

(a) Specified Area: The confined groundwater within the Cambrian, Cutler, Desert Creek, Ismay, and Leadville Formations underlying the area within one mile of the following latitudes and longitudes. These areas are included in Figure 60 on page 116.

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>38.997745, -107.850925</u>	<u>39.49852, -107.967375</u>	<u>39.88416, -108.19091</u>
<u>39.017605, -107.379825</u>	<u>39.505641, -107.89776</u>	<u>39.88453, -108.18307</u>
<u>39.027911, -107.509919</u>	<u>39.506339, -107.893195</u>	<u>39.88547, -108.24451</u>

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>39.08221, -107.40345</u>	<u>39.508781, -107.556241</u>	<u>39.88967, -108.21526</u>
<u>39.1905, -107.90314</u>	<u>39.509626, -107.893953</u>	<u>39.88974, -108.2078</u>
<u>39.20637, -107.9174</u>	<u>39.509646, -107.893854</u>	<u>39.88989, -108.19819</u>
<u>39.230342, -108.17023</u>	<u>39.50975, -108.17372</u>	<u>39.89064, -108.23195</u>
<u>39.233839, -107.765692</u>	<u>39.511093, -107.920509</u>	<u>39.89134, -108.25097</u>
<u>39.27175, -107.75386</u>	<u>39.525654, -107.64256</u>	<u>39.89429, -108.2247</u>
<u>39.277951, -108.206462</u>	<u>39.531123, -107.653224</u>	<u>39.89473, -108.20599</u>
<u>39.28929, -107.84666</u>	<u>39.541718, -107.572606</u>	<u>39.89475, -108.24192</u>
<u>39.29646, -107.7269</u>	<u>39.54649, -108.2305</u>	<u>39.8979, -108.21536</u>
<u>39.31355, -108.93205</u>	<u>39.5551, -108.23276</u>	<u>39.90278, -108.27148</u>
<u>39.32072, -108.12222</u>	<u>39.579864, -108.191601</u>	<u>39.90337, -108.23502</u>
<u>39.337666, -108.116958</u>	<u>39.610687, -108.144927</u>	<u>39.90342, -108.22119</u>
<u>39.35571, -108.13609</u>	<u>39.610701, -108.144969</u>	<u>39.92981, -109.04773</u>
<u>39.364576, -108.388351</u>	<u>39.621644, -108.414161</u>	<u>39.950904, -108.768701</u>
<u>39.37168, -107.73409</u>	<u>39.621672, -108.414169</u>	<u>39.981457, -108.476522</u>
<u>39.37174, -107.73408</u>	<u>39.621725, -108.414186</u>	<u>39.98787, -108.40366</u>
<u>39.37175, -107.73418</u>	<u>39.632602, -108.421378</u>	<u>40.00293, -108.3374</u>
<u>39.375194, -107.559121</u>	<u>39.632618, -108.42135</u>	<u>40.08295, -108.610272</u>
<u>39.383563, -108.021628</u>	<u>39.632619, -108.421394</u>	<u>40.08896, -108.84821</u>
<u>39.389471, -108.25443</u>	<u>39.632634, -108.421365</u>	<u>40.089325, -108.814949</u>
<u>39.389486, -108.131001</u>	<u>39.632791, -108.421494</u>	<u>40.089392, -108.796227</u>
<u>39.390874, -108.135873</u>	<u>39.670018, -108.10027</u>	<u>40.08941, -108.791549</u>
<u>39.393606, -108.13484</u>	<u>39.670053, -108.100224</u>	<u>40.089582, -108.787075</u>
<u>39.397421, -108.130812</u>	<u>39.670093, -108.10017</u>	<u>40.090328, -108.870572</u>
<u>39.398778, -108.073042</u>	<u>39.670132, -108.100119</u>	<u>40.090393, -108.874283</u>

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>39.403786, -108.075852</u>	<u>39.675797, -108.138626</u>	<u>40.09048, -108.864846</u>
<u>39.420635, -108.059997</u>	<u>39.681302, -108.14277</u>	<u>40.09205, -108.84812</u>
<u>39.432303, -108.069297</u>	<u>39.693111, -108.098612</u>	<u>40.10706, -108.224253</u>
<u>39.433335, -108.023363</u>	<u>39.693118, -108.098681</u>	<u>40.110929, -108.186874</u>
<u>39.4584, -107.90635</u>	<u>39.693126, -108.098753</u>	<u>40.211693, -107.4554</u>
<u>39.459959, -108.013783</u>	<u>39.693136, -108.098823</u>	<u>40.21262, -108.27639</u>
<u>39.46009, -107.541335</u>	<u>39.72317, -109.02753</u>	<u>40.28414, -108.02976</u>
<u>39.468636, -108.056014</u>	<u>39.72349, -109.0314</u>	<u>40.28772, -108.04491</u>
<u>39.468686, -108.056095</u>	<u>39.72736, -109.04148</u>	<u>40.332203, -107.605007</u>
<u>39.474883, -108.065923</u>	<u>39.785069, -108.240815</u>	<u>40.35006, -108.0929</u>
<u>39.475669, -108.180217</u>	<u>39.792945, -108.280557</u>	<u>40.35346, -108.4443</u>
<u>39.476031, -108.173303</u>	<u>39.815622, -108.76257</u>	<u>40.479043, -107.493367</u>
<u>39.476389, -108.060918</u>	<u>39.828981, -108.85607</u>	<u>40.54016, -106.391286</u>
<u>39.47913, -108.060723</u>	<u>39.8465, -108.23279</u>	<u>40.547043, -106.41017</u>
<u>39.481263, -107.631292</u>	<u>39.84741, -108.47646</u>	<u>40.57381, -106.38221</u>
<u>39.48859, -107.72164</u>	<u>39.84935, -108.48774</u>	<u>40.583851, -106.400143</u>
<u>39.48879, -107.61057</u>	<u>39.852514, -108.494244</u>	<u>40.693772, -107.570308</u>
<u>39.489332, -108.248598</u>	<u>39.852963, -108.478994</u>	<u>40.694429, -107.569869</u>
<u>39.490044, -107.600313</u>	<u>39.85722, -108.47422</u>	<u>40.90408, -107.59907</u>
<u>39.495571, -107.678494</u>	<u>39.857368, -108.328057</u>	<u>40.972269, -108.332872</u>
<u>39.495919, -107.977692</u>	<u>39.859753, -108.465272</u>	<u>40.9912, -107.9184</u>
<u>39.496714, -107.989134</u>	<u>39.8743, -108.2222</u>	<u>40.993496, -108.694141</u>
<u>39.498003, -108.016328</u>	<u>39.87843, -108.18786</u>	<u>-</u>

(b) Classifications: The classification of the groundwater in these formations is:

Limited Use and Quality

(c) Groundwater Quality Standards: The groundwater quality standards included in Table 1 through 4 of the Basic Standards for Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined groundwater of these formations within the specified area.

The groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the groundwater in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas, otherwise all standards from Table A apply.

**(61) OIL AND GAS FIELDS OF MOFFAT, ROUTT, JACKSON, GRAND, RIO BLANCO, GARFIELD, MESA, DELTA, PITKIN, AND GUNNISON COUNTIES, COLORADO**

(a) Specified Area: The confined groundwater within the Cameo Coal, Castlegate, Corcoran, Cozette, Dakota, Douglas Creek, Entrada, Fort Union, Iles, Lance, Loyd Sandstone, Mancos, Maroon, Morapos, Morrison, Navajo, Niobrara, Ohio Creek, Sego, Sundance, Wasatch, Weber, and Williams Fork Formations underlying the area within one mile of the following latitudes and longitudes. These areas are included in Figure 61 on page 117.

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>39.58185, -103.38546</u>	<u>39.929391, -102.314463</u>	<u>40.195, -103.82225</u>
<u>39.59581, -103.37951</u>	<u>39.976429, -102.354501</u>	<u>40.19719, -103.20139</u>
<u>39.6681, -102.165723</u>	<u>40.00713, -103.290579</u>	<u>40.22283, -103.10571</u>
<u>39.673339, -102.233444</u>	<u>40.01565, -102.43764</u>	<u>40.22688, -102.35798</u>
<u>39.67957, -102.28272</u>	<u>40.01609, -102.52394</u>	<u>40.22797, -103.5493</u>
<u>39.704642, -103.361011</u>	<u>40.022996, -102.175297</u>	<u>40.23354, -102.21216</u>
<u>39.713938, -102.209939</u>	<u>40.02669, -102.37825</u>	<u>40.25355, -102.60833</u>
<u>39.715231, -102.2426</u>	<u>40.0402, -103.38469</u>	<u>40.25567, -102.45912</u>
<u>39.777627, -103.43058</u>	<u>40.05836, -103.3842</u>	<u>40.26883, -102.42858</u>
<u>39.79748, -103.2155</u>	<u>40.066971, -102.400034</u>	<u>40.29036, -102.61721</u>
<u>39.802816, -103.054906</u>	<u>40.07338, -102.32035</u>	<u>40.317923, -102.455947</u>
<u>39.809616, -102.922843</u>	<u>40.07355, -102.56954</u>	<u>40.37238, -102.51082</u>

<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>	<u>Latitude/ Longitude</u>
<u>39.810767, -102.930527</u>	<u>40.10294, -103.32376</u>	<u>40.381154, -102.274502</u>
<u>39.813579, -102.941694</u>	<u>40.11932, -104.08688</u>	<u>40.44019, -102.35947</u>
<u>39.81592, -102.93014</u>	<u>40.13644, -103.16763</u>	<u>40.55598, -102.32208</u>
<u>39.81804, -102.48914</u>	<u>40.1381, -102.84531</u>	<u>40.6709, -102.1946</u>
<u>39.888925, -102.865565</u>	<u>40.15598, -103.36565</u>	<u>40.74218, -102.13088</u>
<u>39.90152, -102.4707</u>	<u>40.18258, -103.82077</u>	<u>40.96291, -102.54341</u>
<u>39.91919, -102.22375</u>	<u>40.18601, -103.16911</u>	-

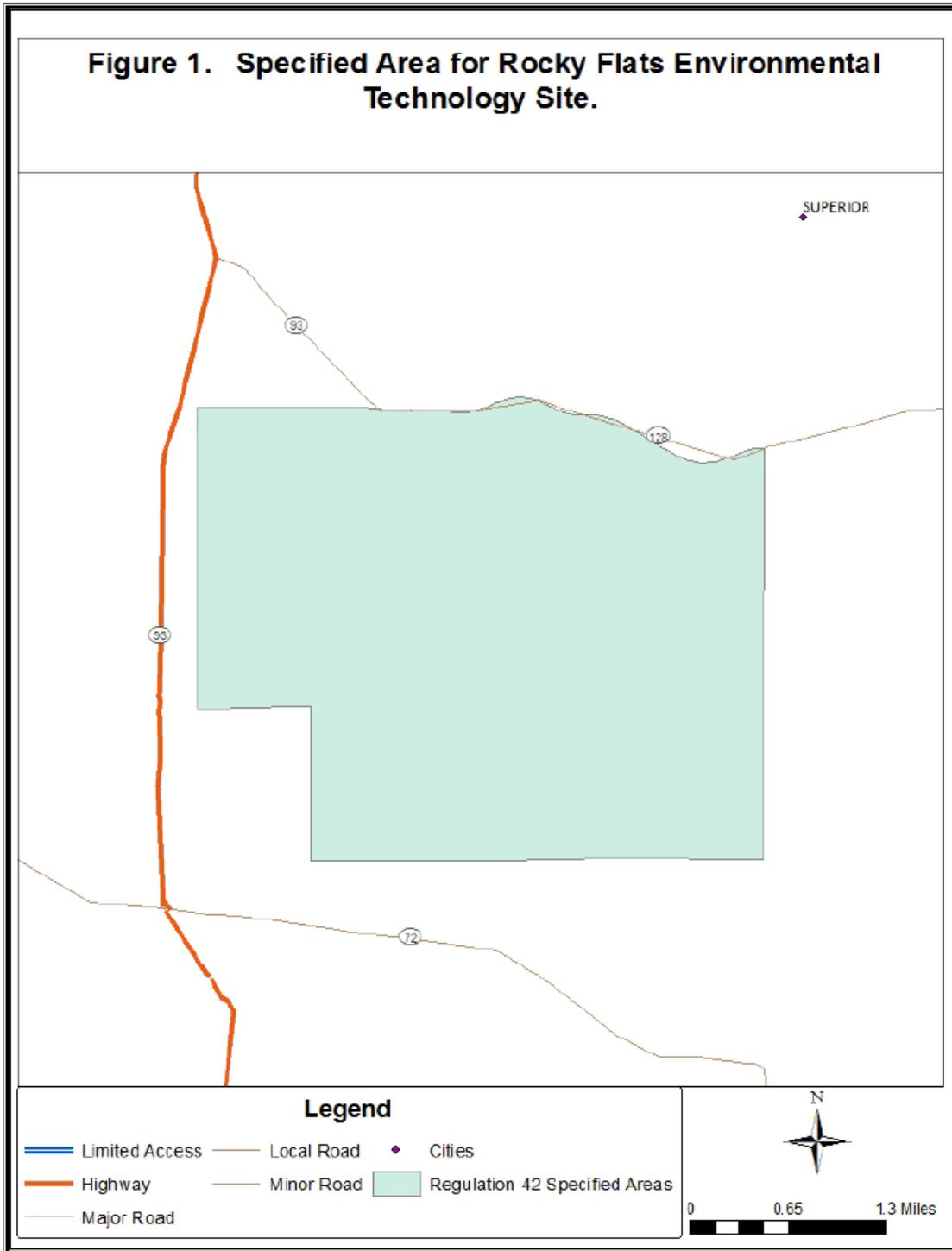
(b) Classifications: The classification of the groundwater in these formations is:

Limited Use and Quality

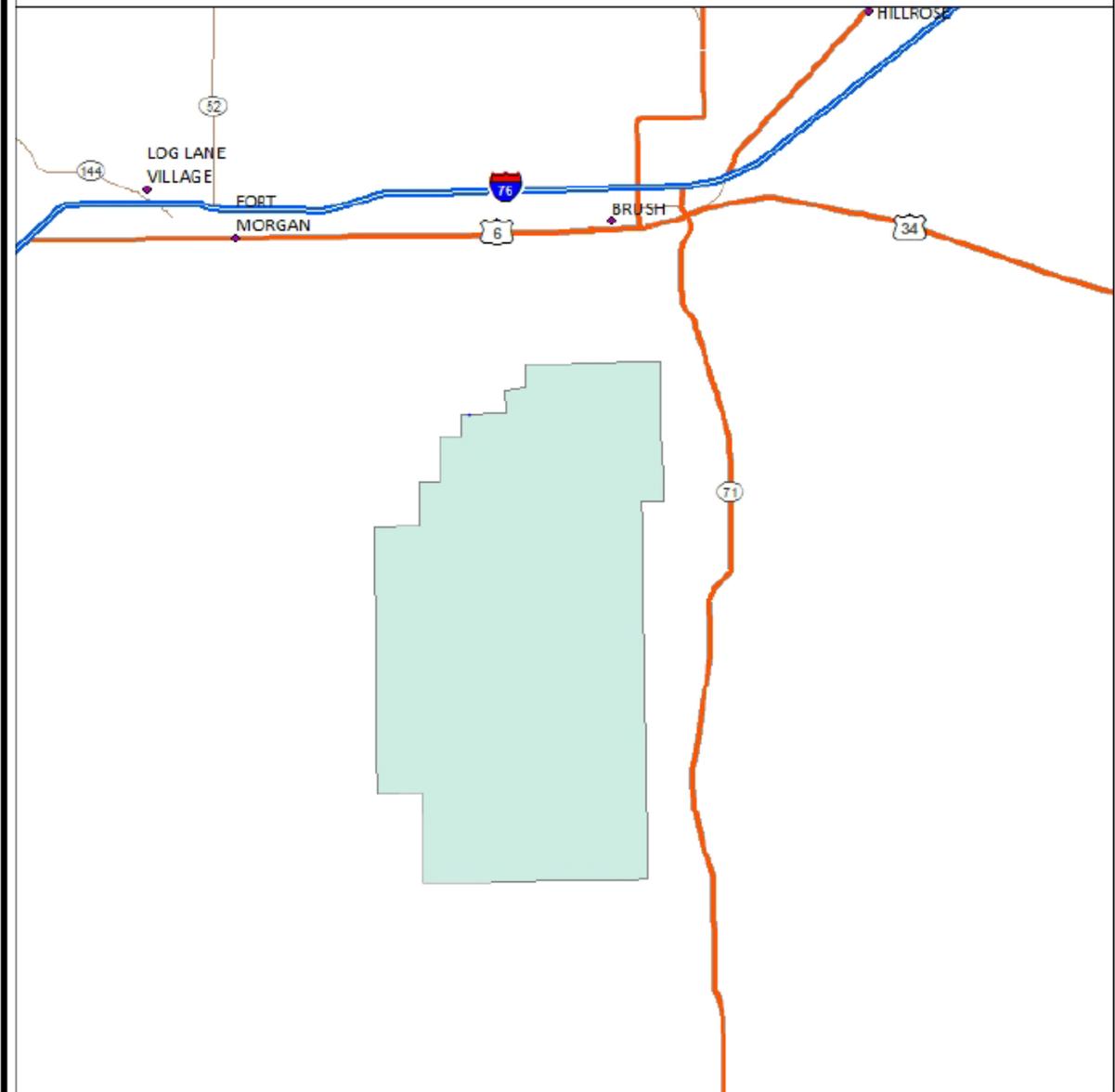
(c) Groundwater Quality Standards: The groundwater quality standards included in Table 1 through 4 of the Basic Standards for Groundwater 41.0 (5 CCR 1002-41) will not apply to the confined groundwater of these formations within the specified area.

The groundwater organic chemical standards included in Table A of the section 41.5.C.3 of the Basic Standards for Groundwater (5 CCR 1002-41) for benzene, toluene, ethylbenzene, xylenes, and benzo(a)pyrene will not apply to the groundwater in the specified area. This exception applies to these compounds only when their source is crude oil, condensate, or produced water, or wastes that are intrinsically derived from primary field operations associated with the exploration, development, or production of crude oil and natural gas, otherwise all standards from Table A apply.

42.8 FIGURES



**Figure 2. Specified Area for Brush Wellfield.**

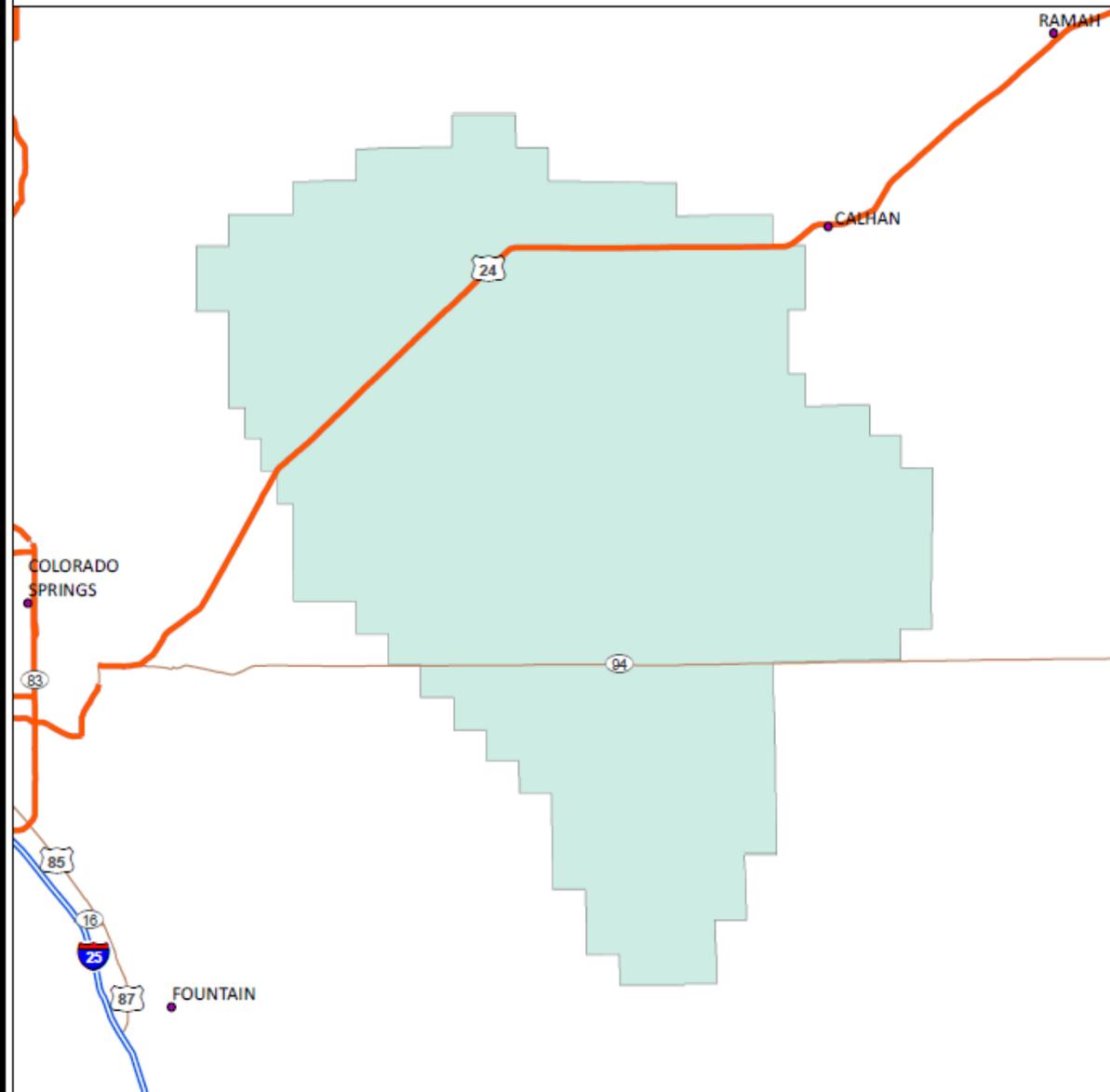


**Legend**

-  Limited Access
-  Local Road
-  Cities
-  Highway
-  Minor Road
-  Regulation 42 Specified Areas
-  Major Road



**Figure 3. Specified Area for Upper Black Squirrel Creek Alluvial Aquifer.**



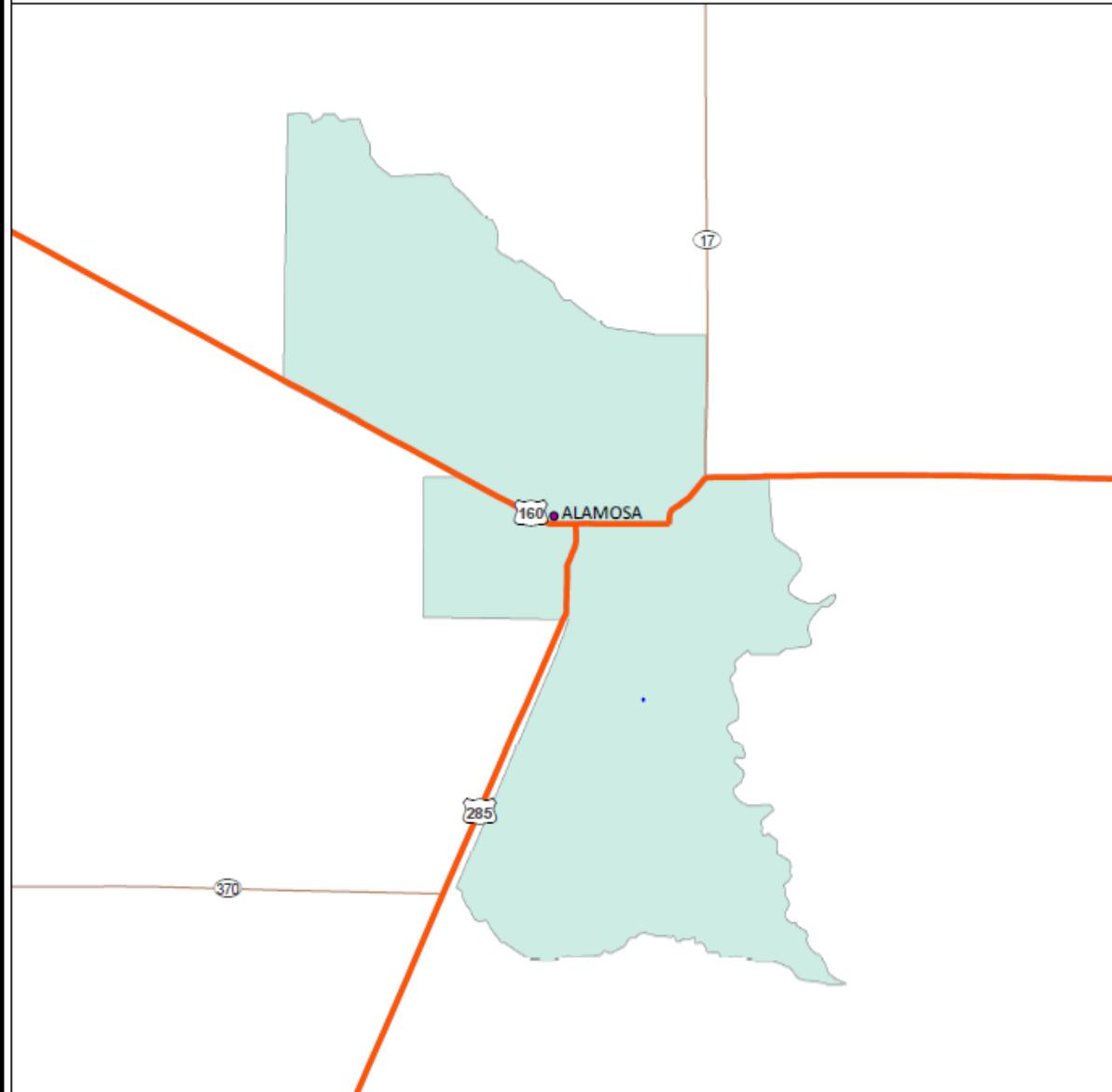
**Legend**

-  Limited Access
-  Highway
-  Major Road
-  Local Road
-  Minor Road
-  Regulation 42 Specified Areas
-  Cities



0 3.5 7 Miles

**Figure 4. Specified Area for Alamosa Wellfield.**



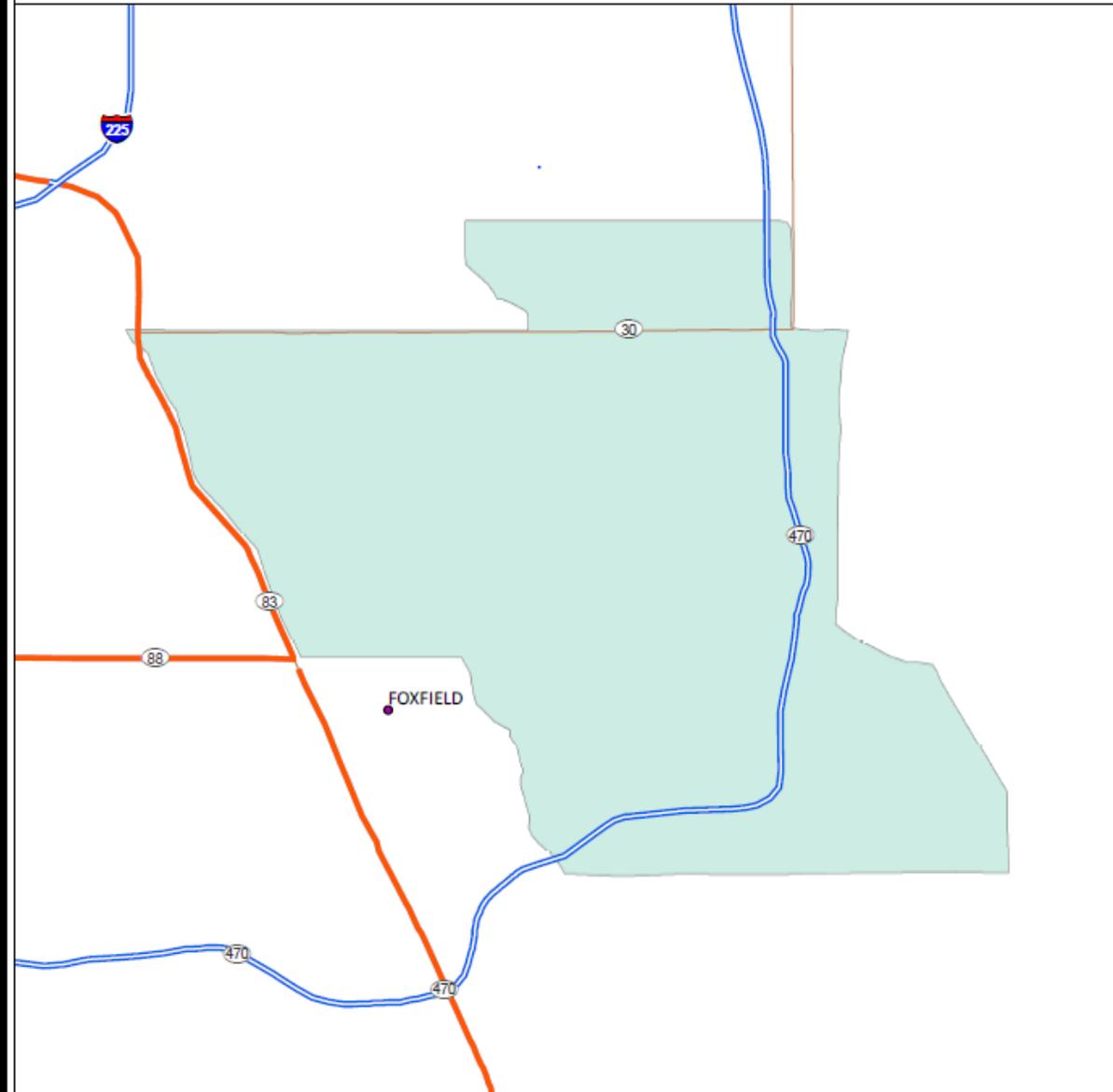
**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



0 0.85 1.7 Miles

**Figure 5. Specified Area for East Cherry Creek Valley Wellfield.**



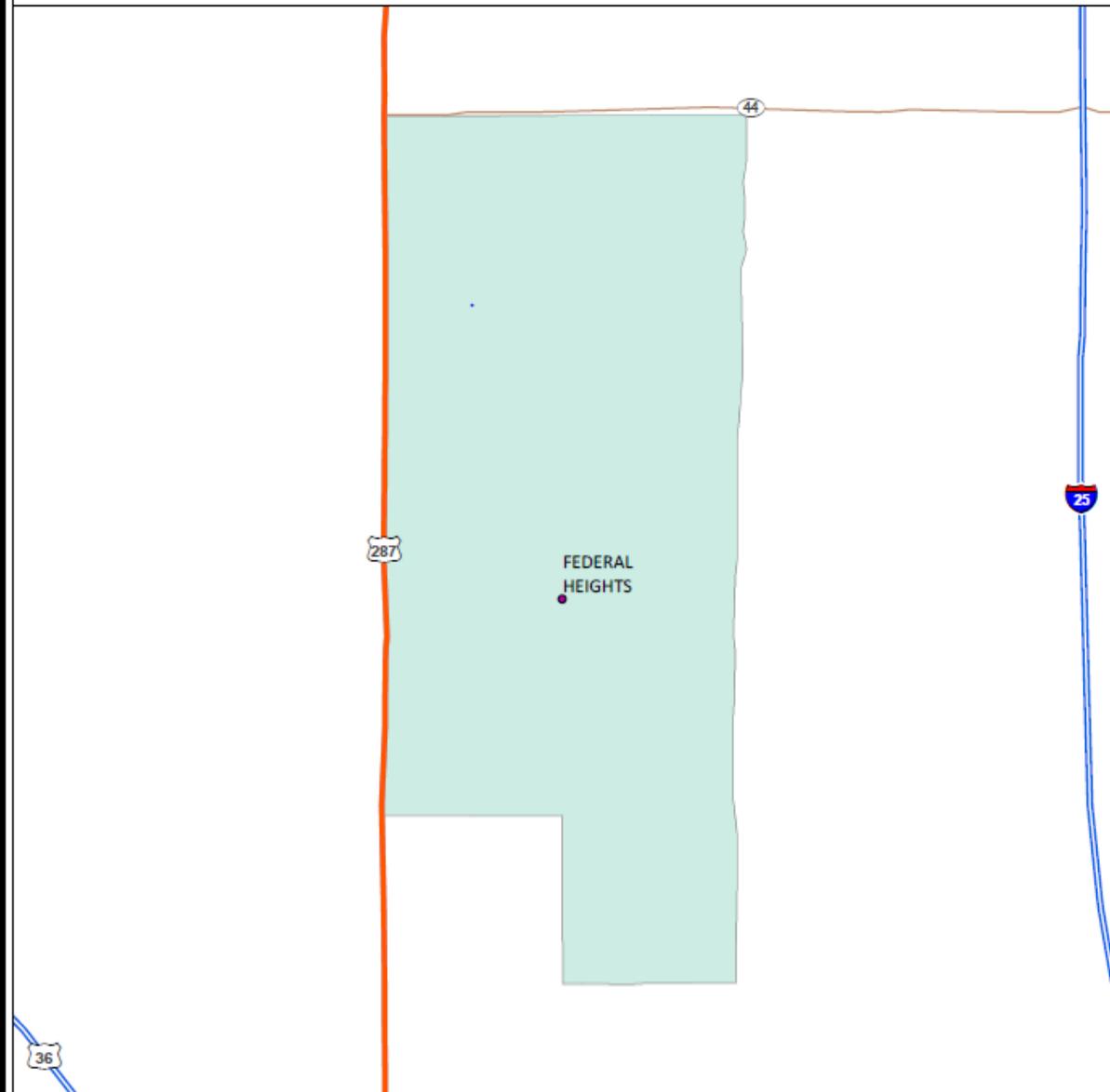
**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



0 1 2 Miles

**Figure 6. Specified Area for Federal Heights Wellfield.**



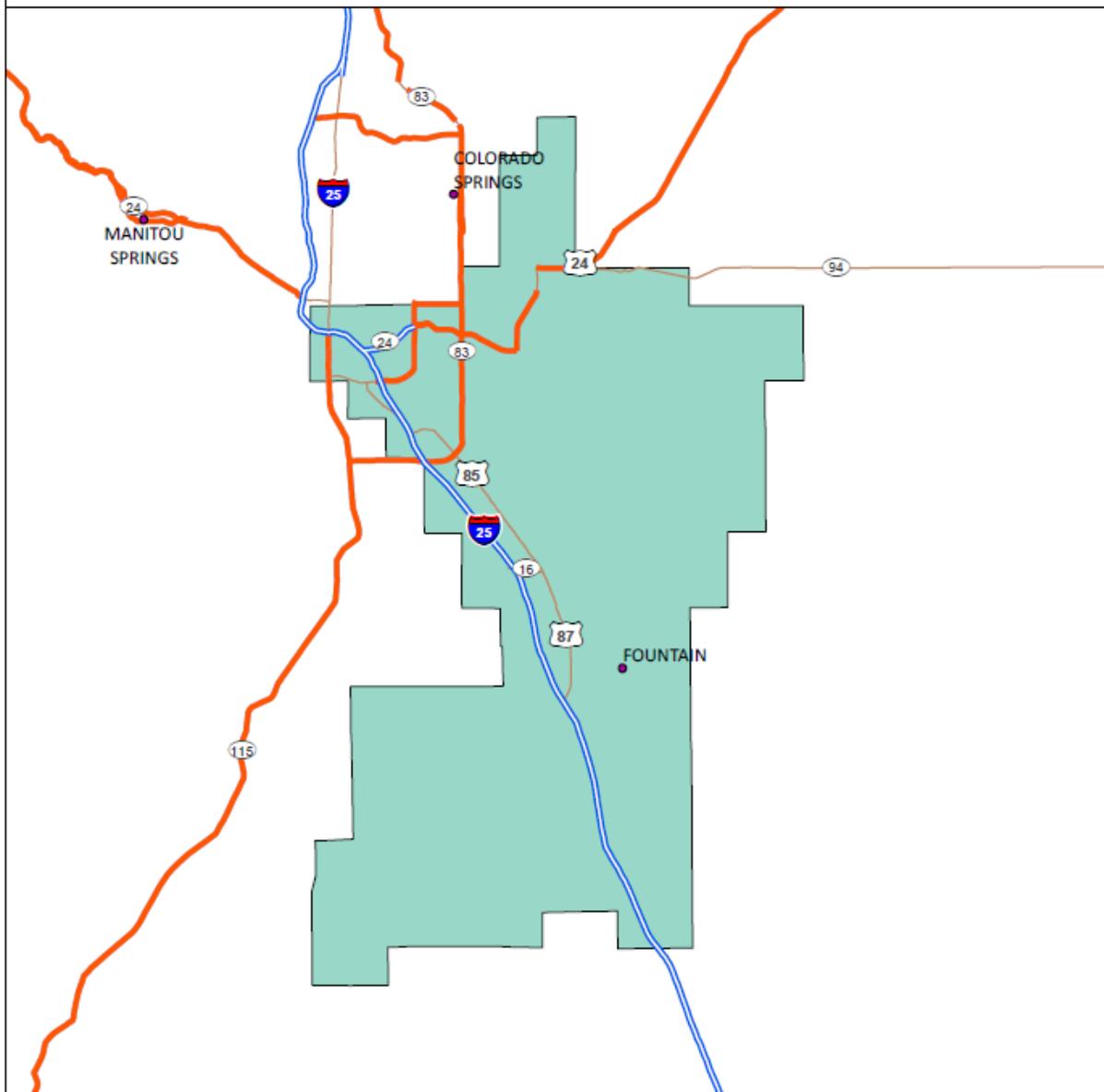
**Legend**

Limited Access	Local Road	Cities
Highway	Minor Road	Regulation 42 Specified Areas
Major Road		

N

0 0.35 0.7 Miles

**Figure 7. Specified Area for unconfined and alluvial aquifers in central El Paso County.**

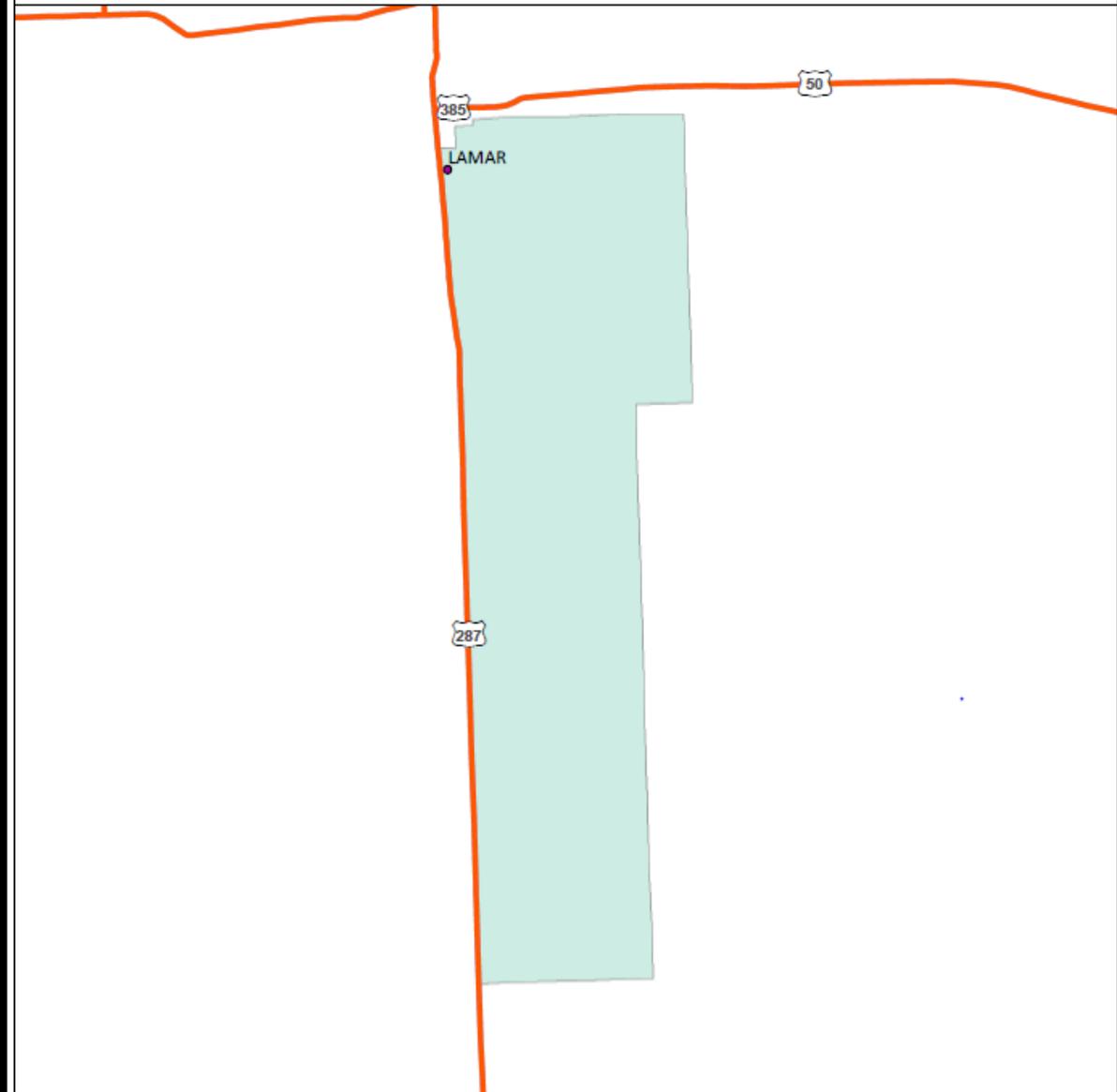


**Legend**

- |  |   |  |
|--|---|--|
|  Limited Access |  Local Road                    |  Cities |
|  Highway        |  Minor Road                    |  |
|  Major Road     |  Regulation 42 Specified Areas |  |



Figure 8. Specified Area for Lamar Wellfield.



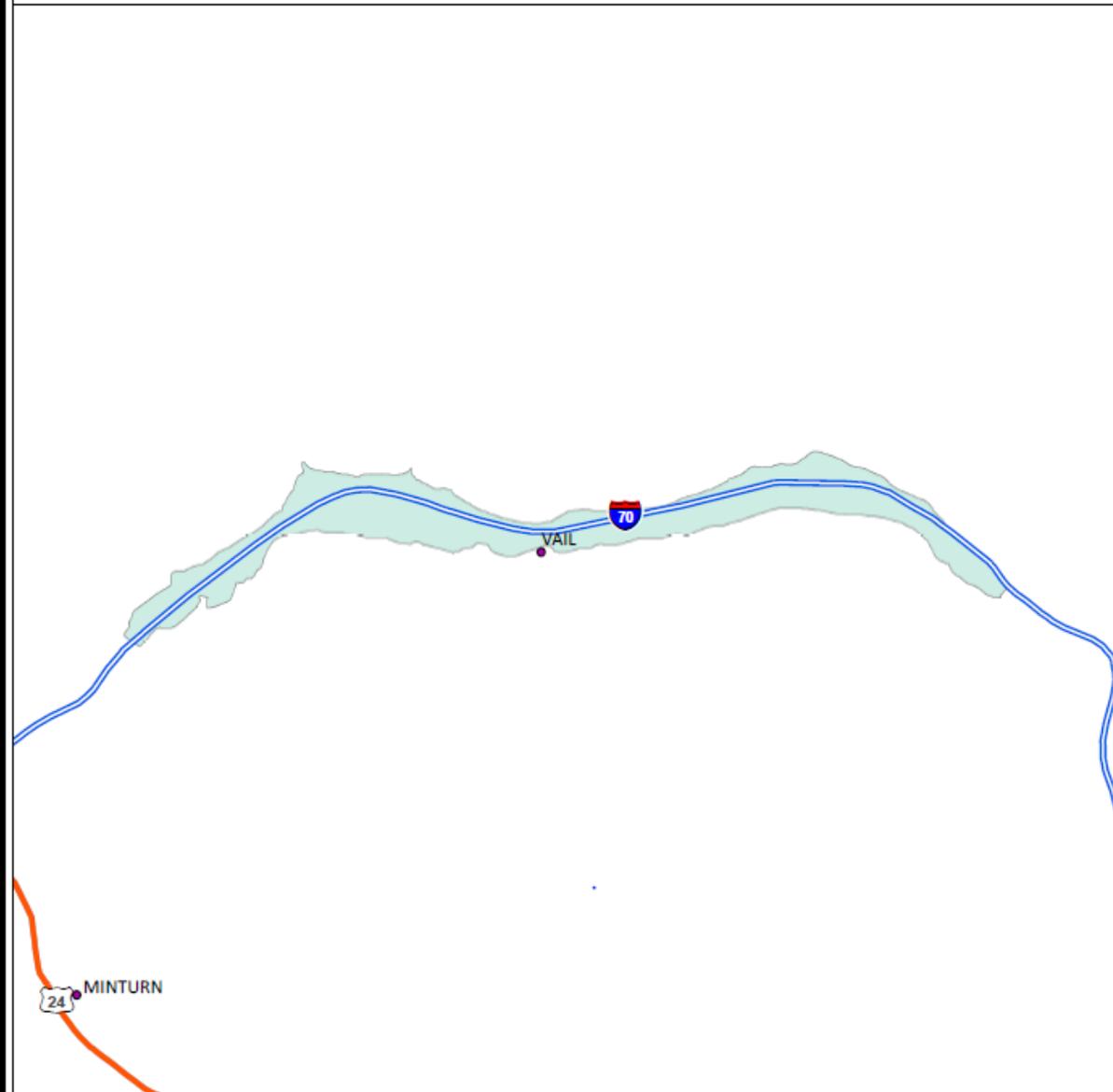
**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



0 2 4 Miles

**Figure 9. Specified Area for Vail Valley Wellfield.**



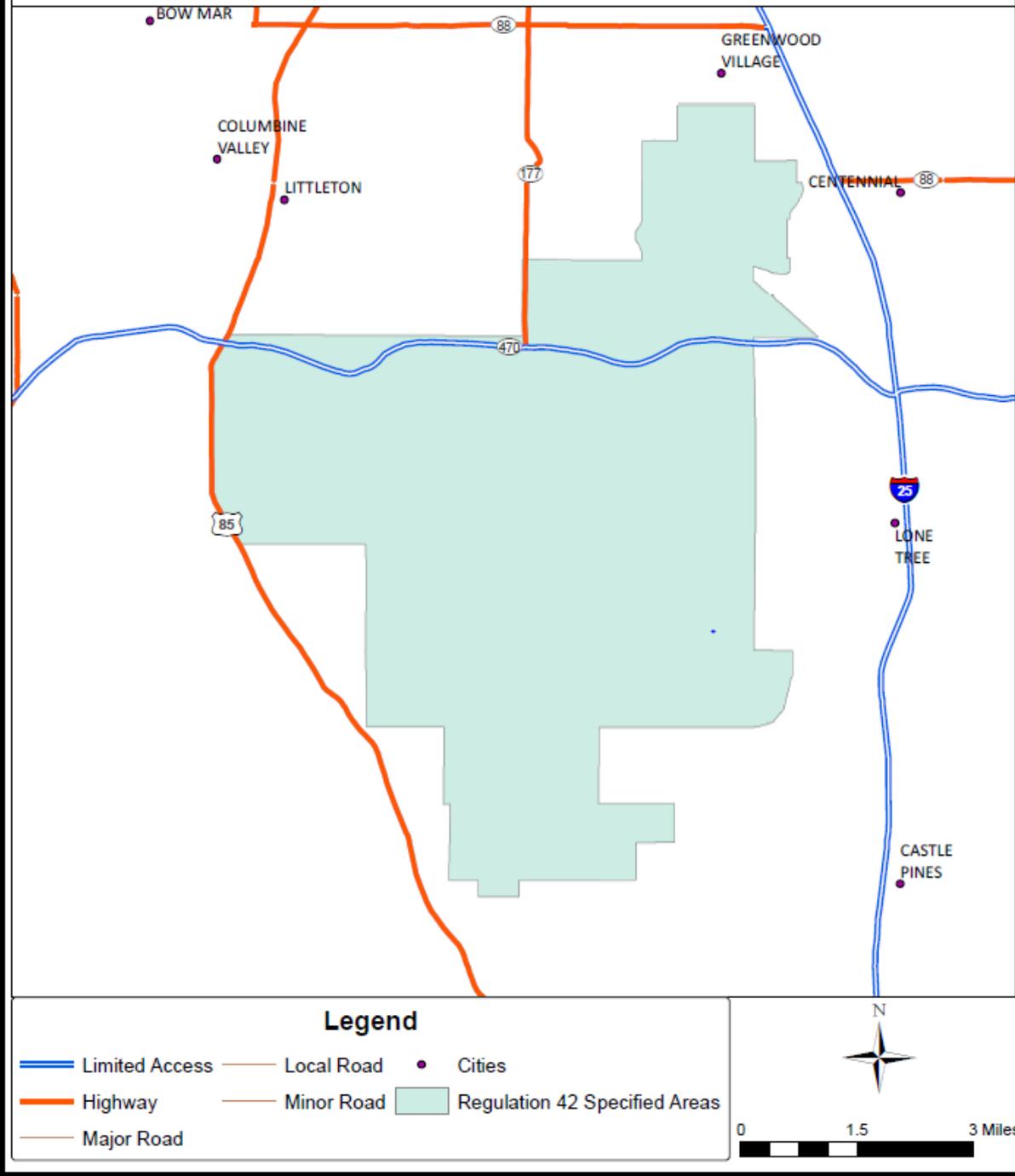
**Legend**

- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |

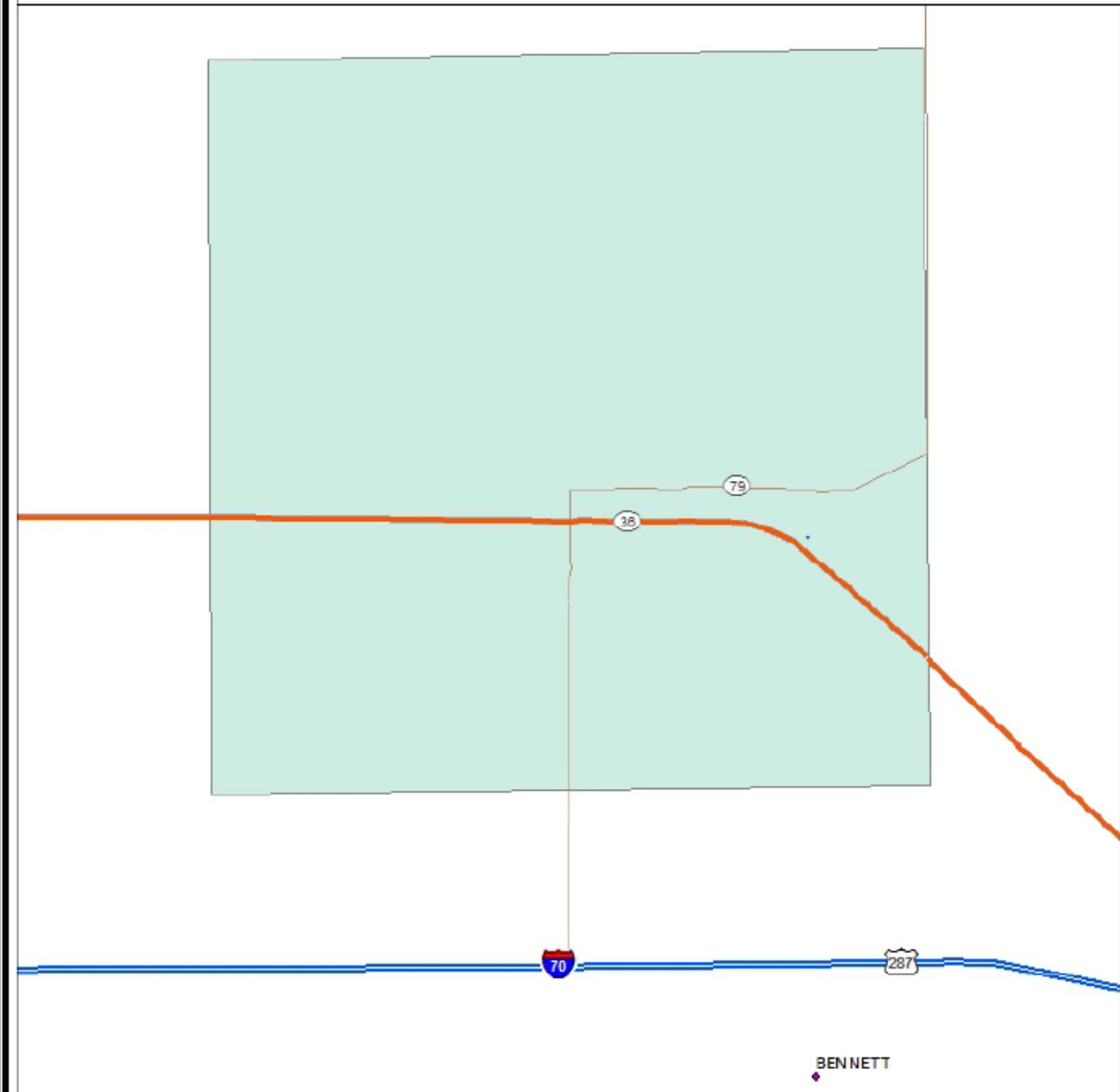


0 0.95 1.9 Miles

**Figure 10. Specified Area for Willows and Centennial Ground Water Classification Area.**



**Figure 11. Specified Area for Bennett Wellfield.**



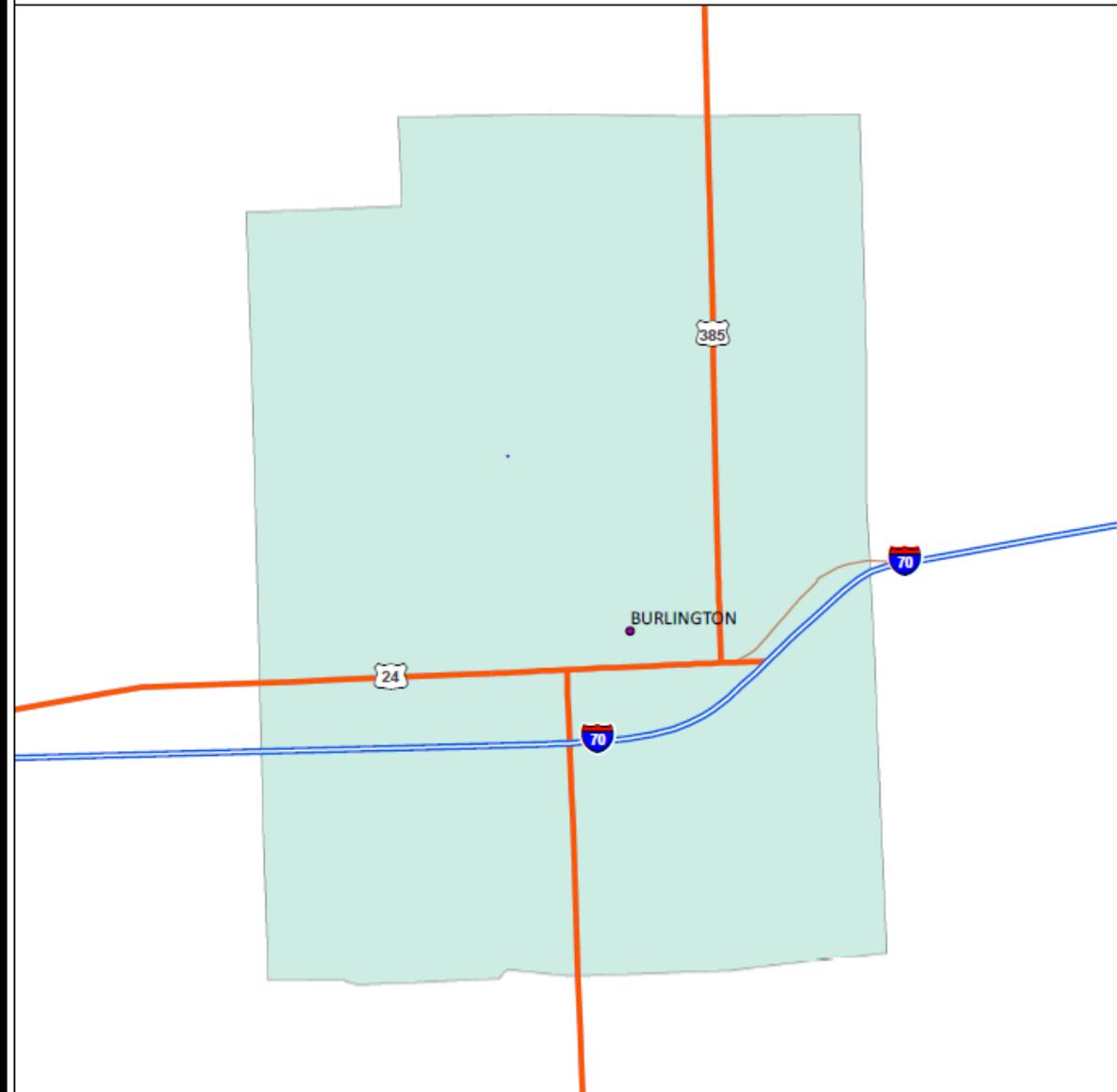
**Legend**

-  Limited Access
-  Highway
-  Major Road
-  Local Road
-  Minor Road
-  Cities
-  Regulation 42 Specified Areas



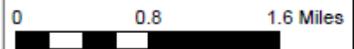
0 0.3 0.6 Miles

**Figure 12. Specified Area for the Burlington Wellfield.**

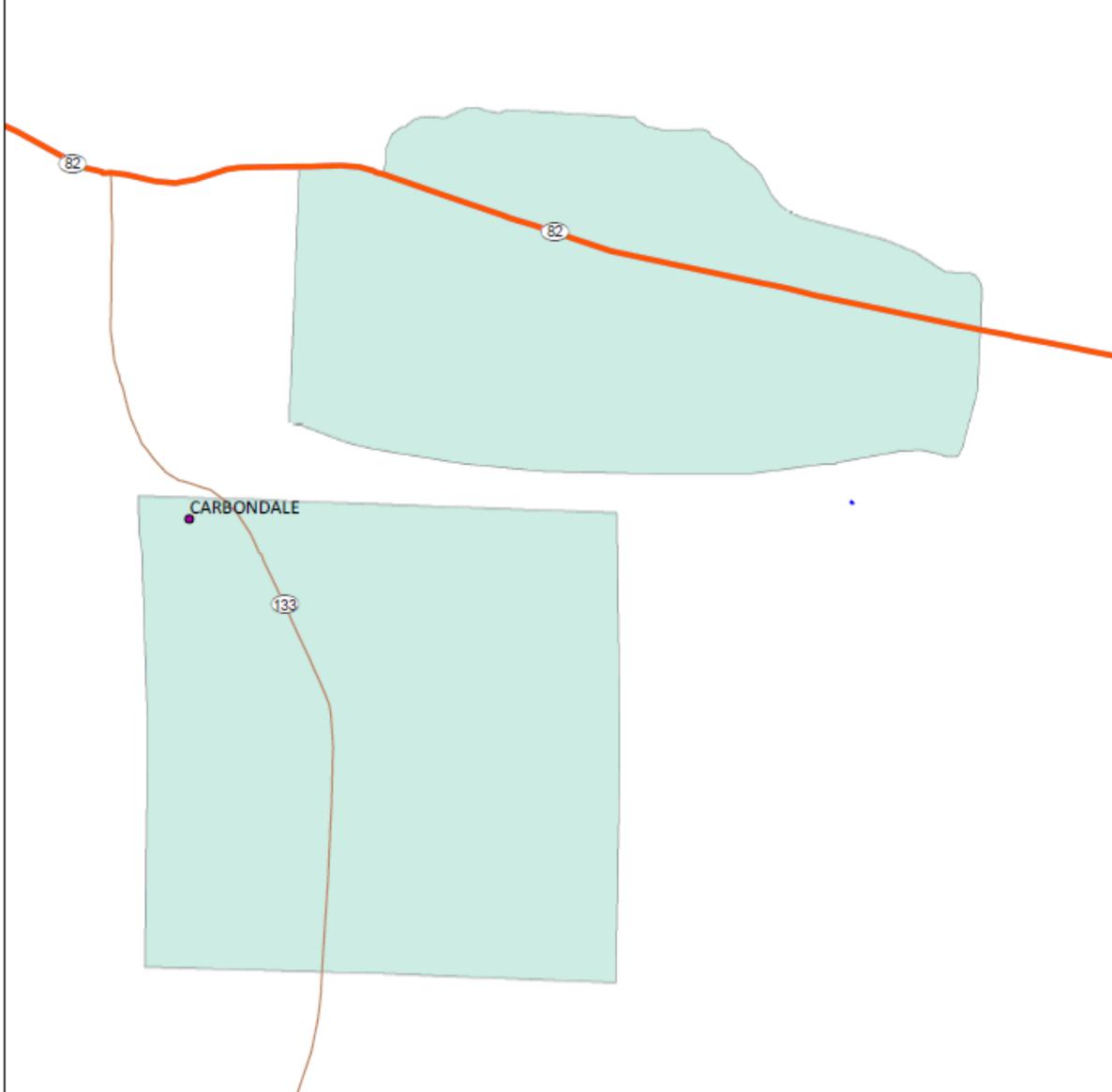


**Legend**

- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |



**Figure 13. Specified Area for Carbondale Wellfield.**



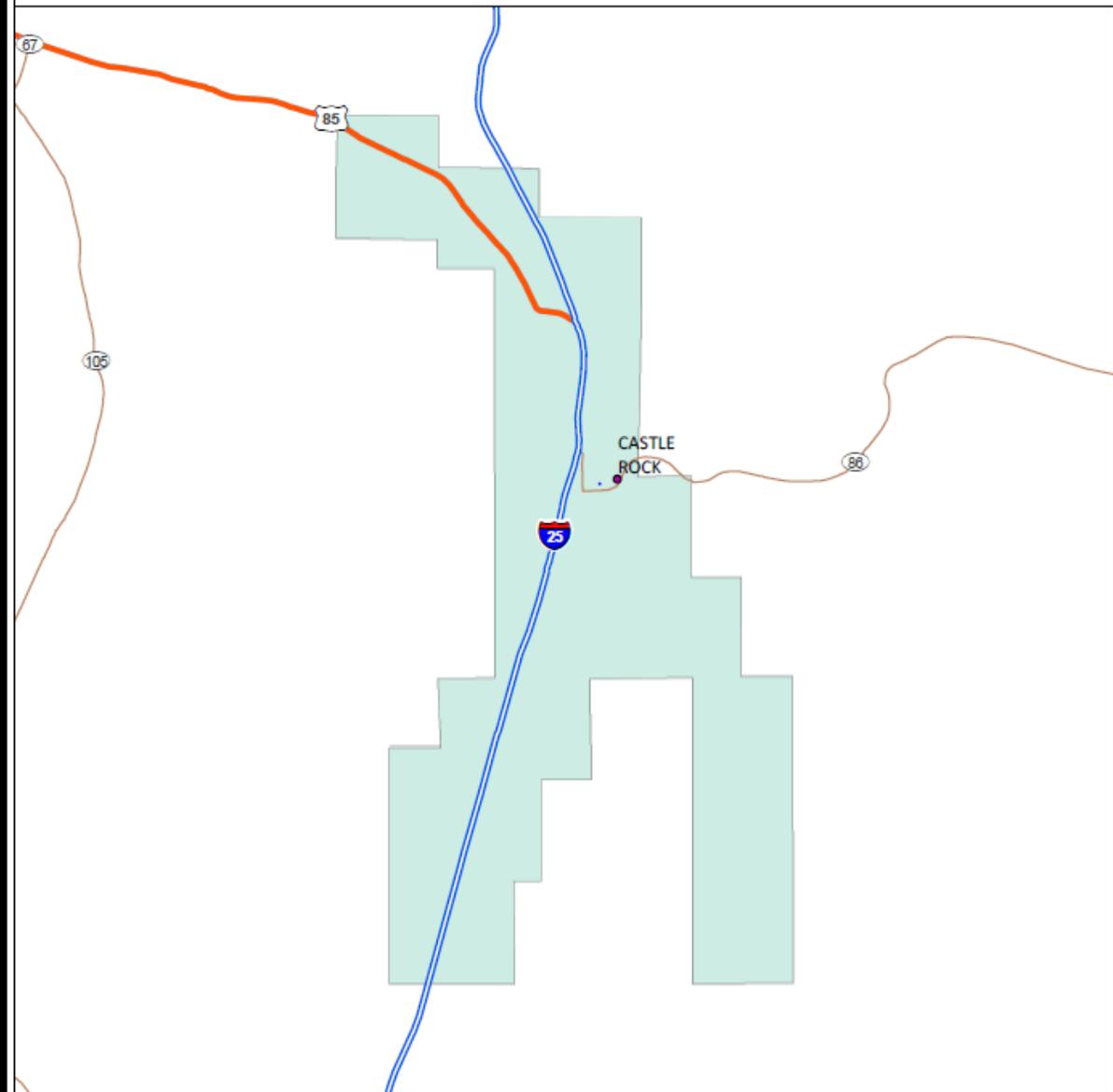
**Legend**

Limited Access	Local Road	Cities
Highway	Minor Road	Regulation 42 Specified Areas
Major Road		

N

0 0.5 1 Miles

**Figure 14. Specified Area for Castle Rock Wellfield.**



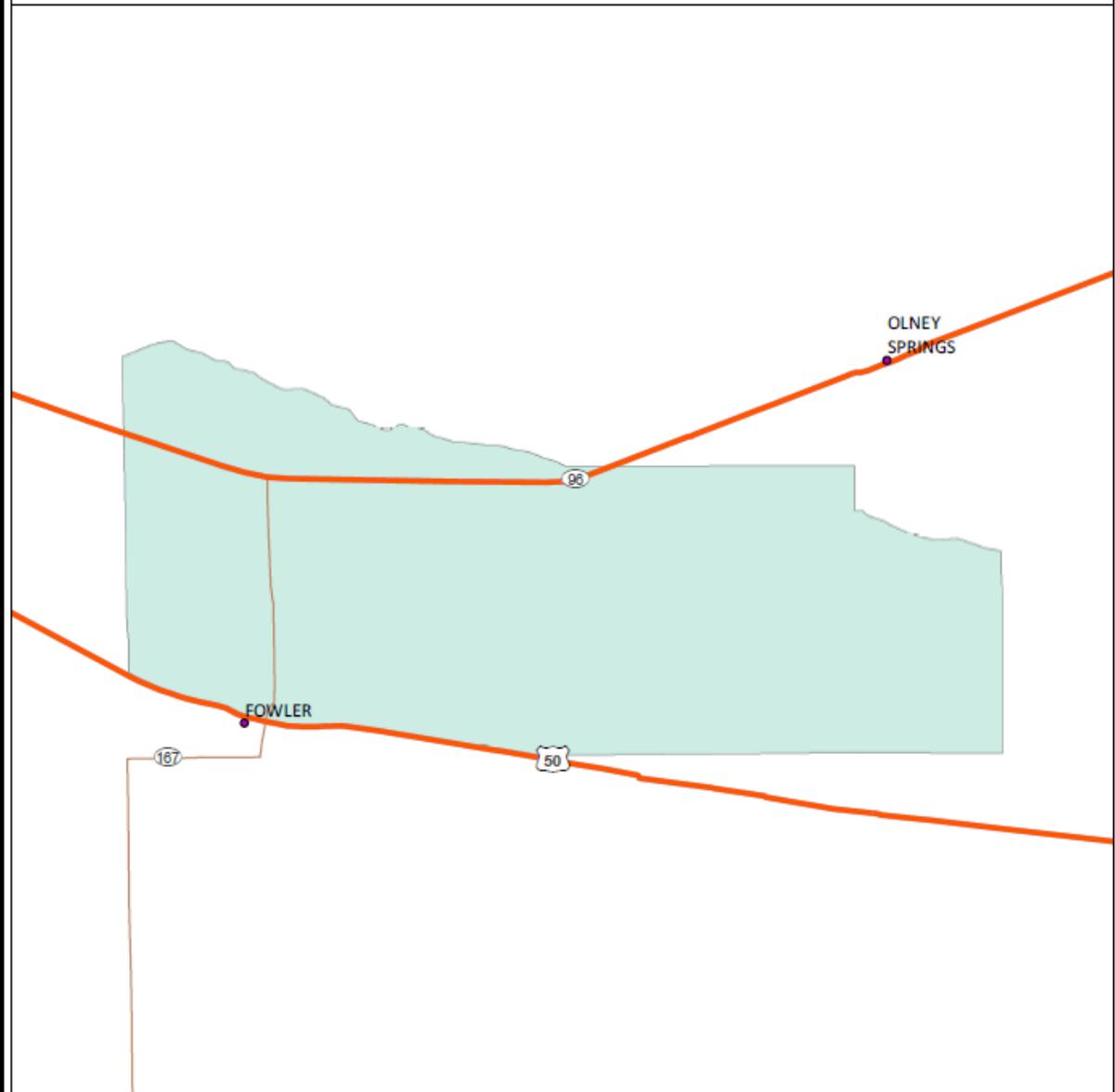
**Legend**

- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |



0 1 2 Miles

**Figure 15. Specified Area for Crowley County Water System Wellfield.**



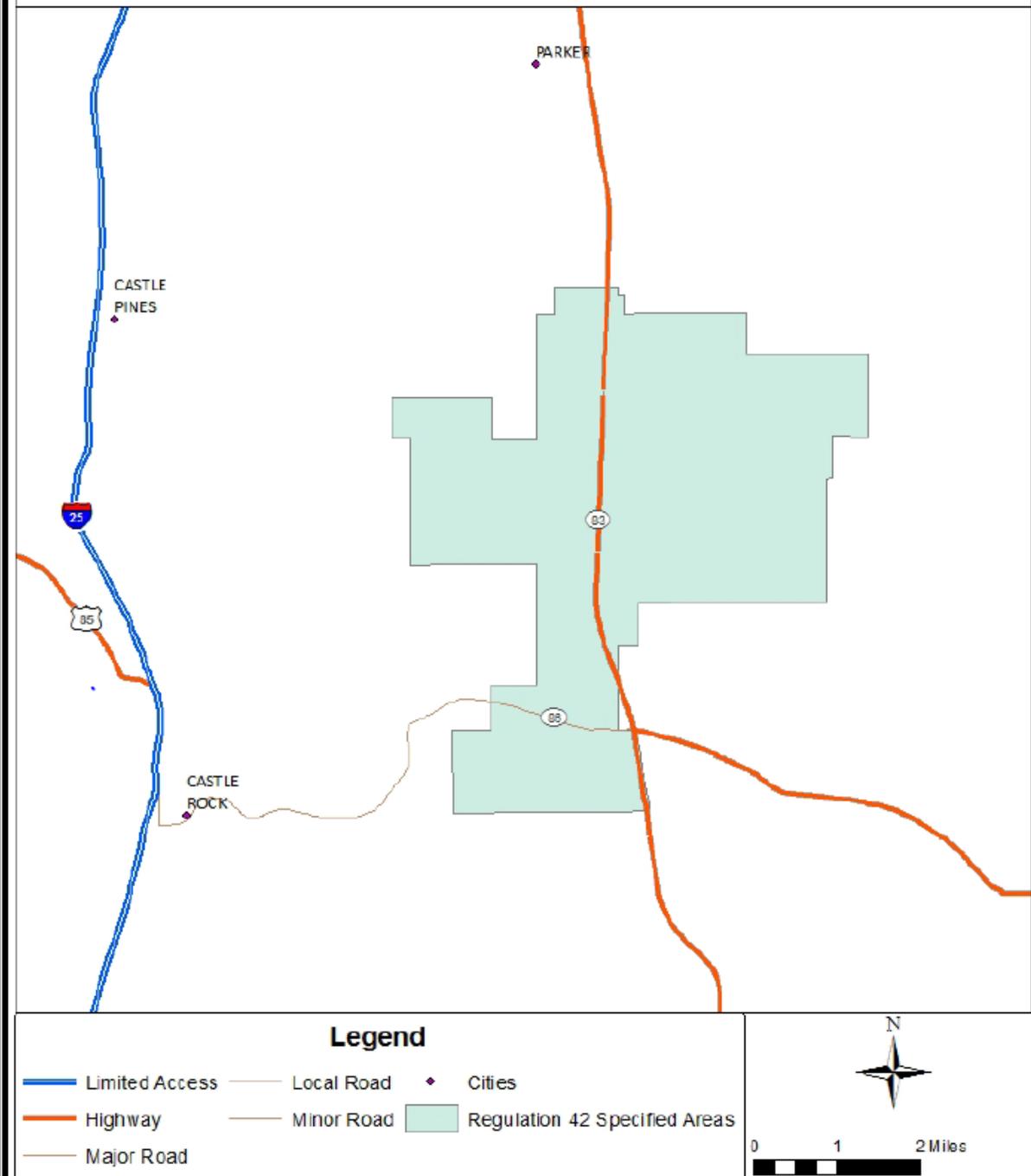
**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |

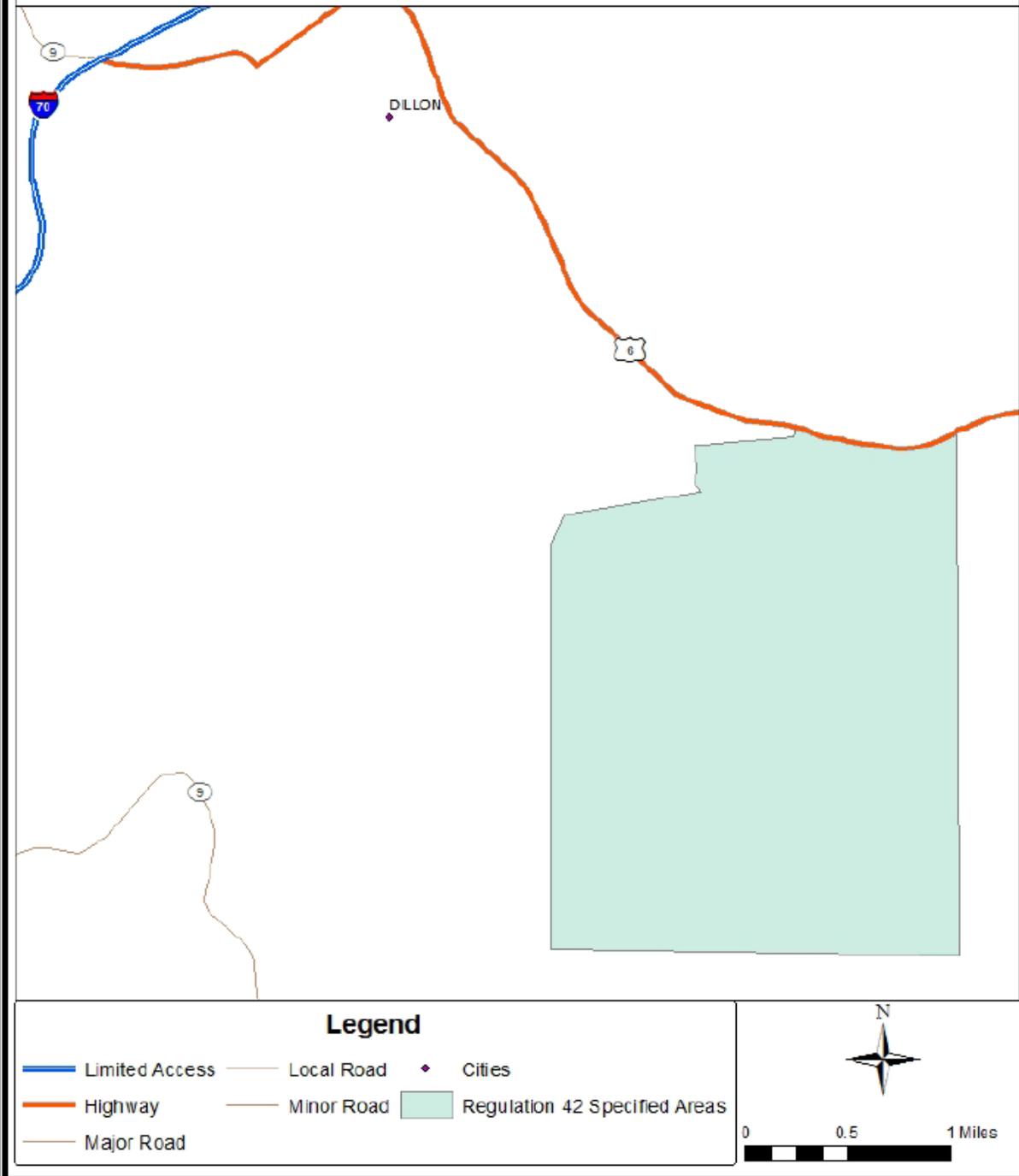


0 0.8 1.6 Miles

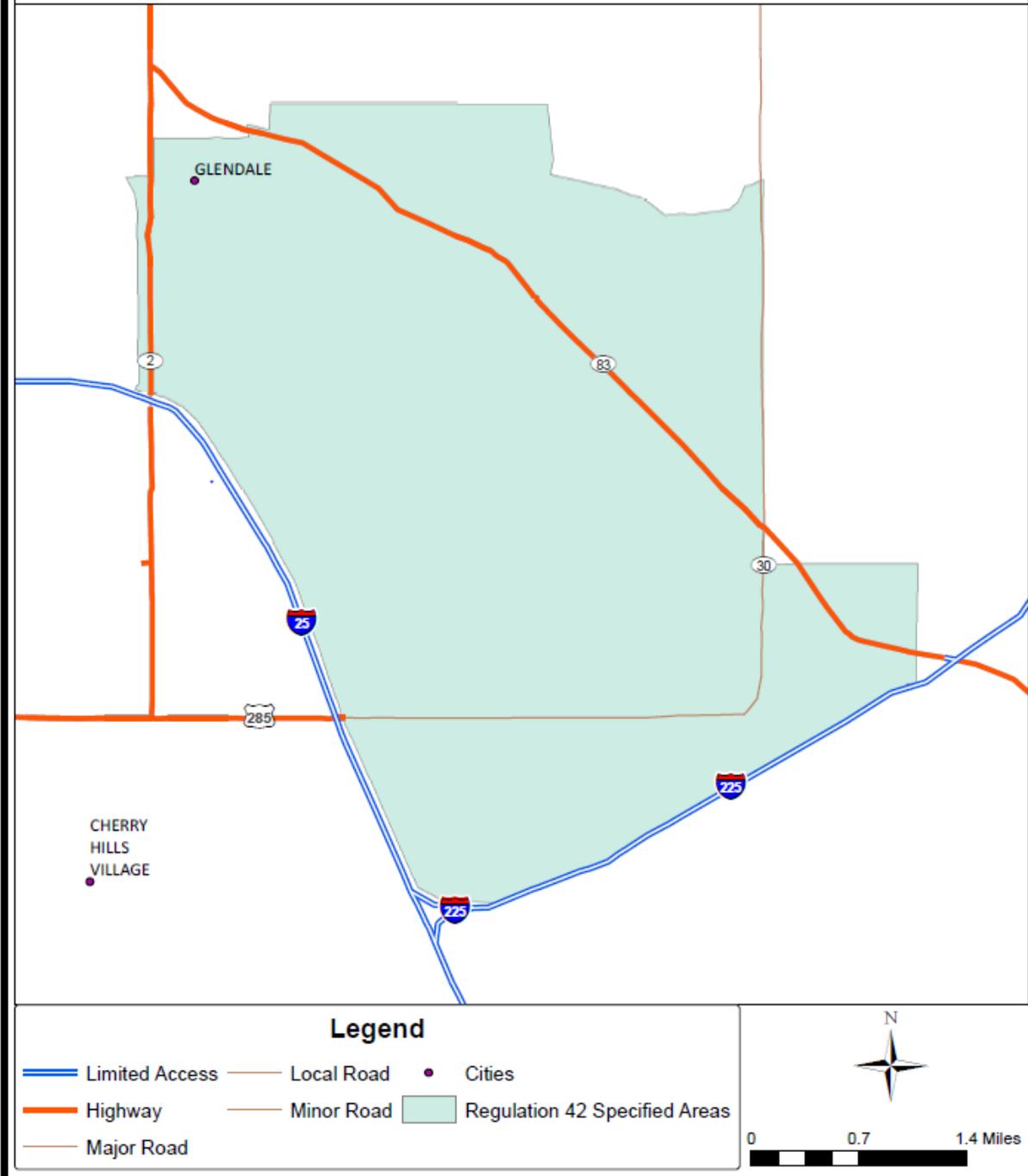
**Figure 16. Specified Area for Denver SE Suburban Water and Sanitation District Wellfield.**



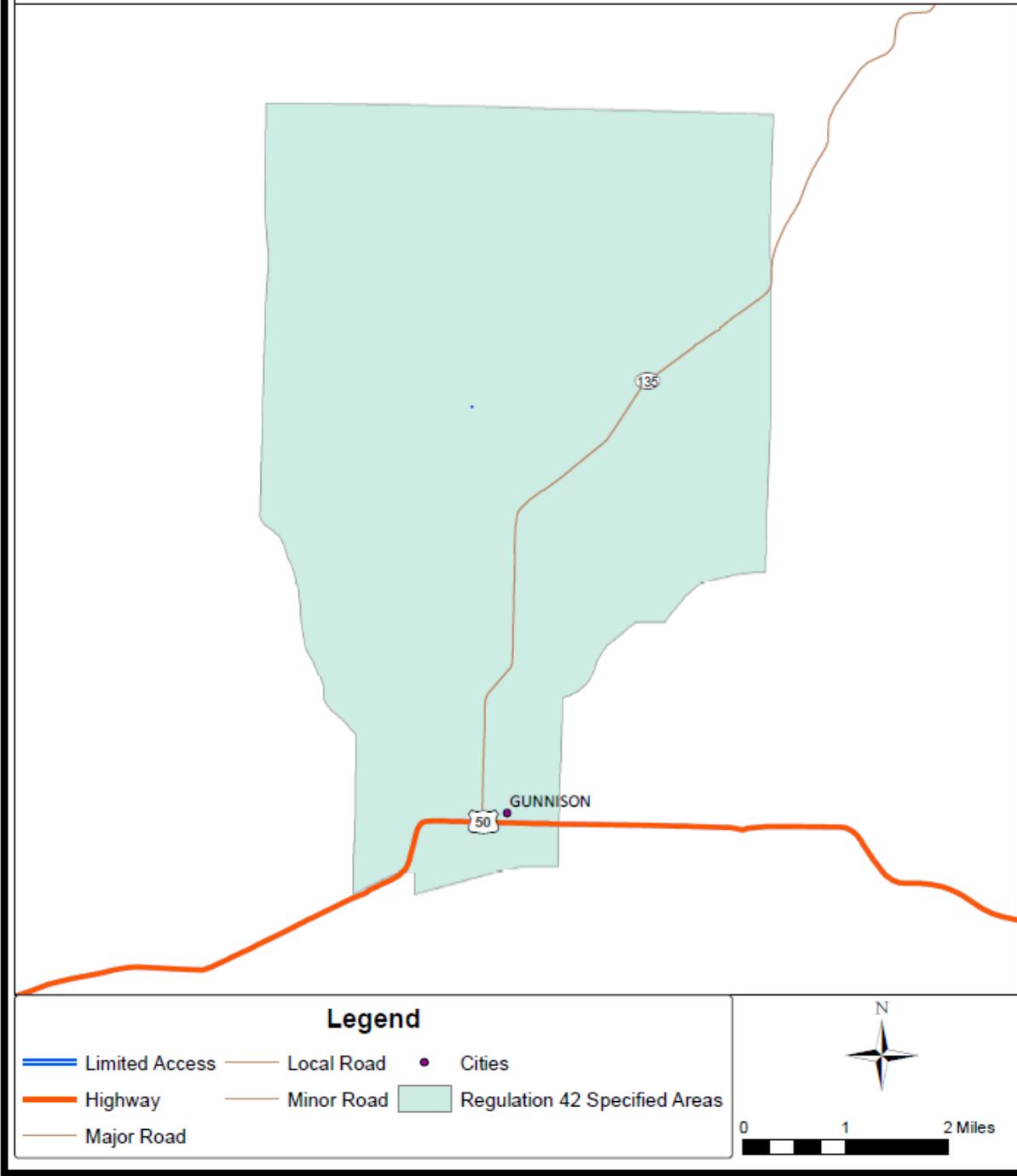
**Figure 17. Specified Area for East Dillon Water District Wellfield.**



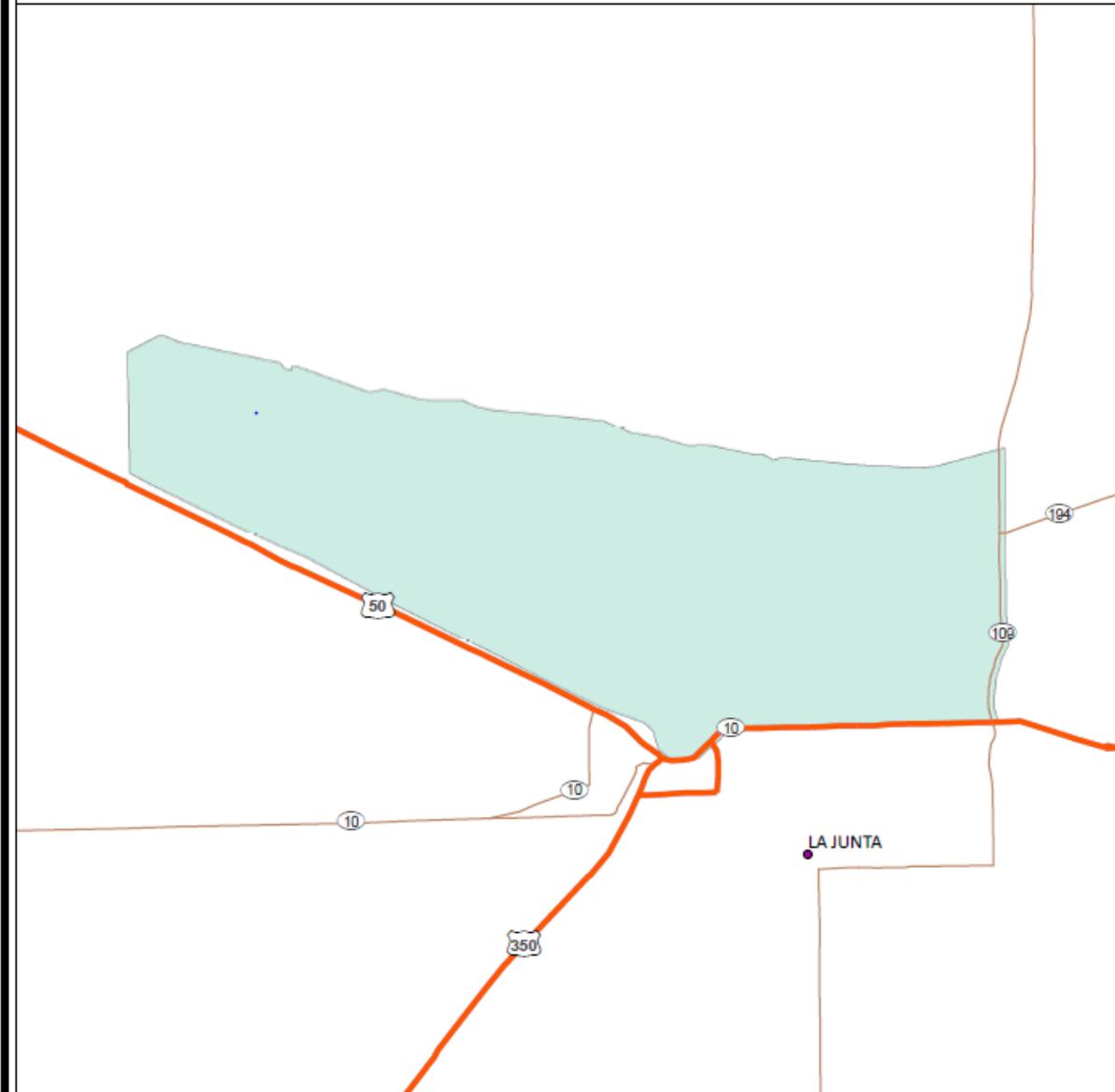
**Figure 18. City of Glendale and Cherry Creek Valley Water and Sanitation District Ground Water Classification Area.**



**Figure 19. Specified Area for the Gunnison Wellfield.**

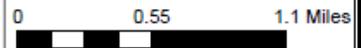


**Figure 20. Specified Area for La Junta Wellfield.**

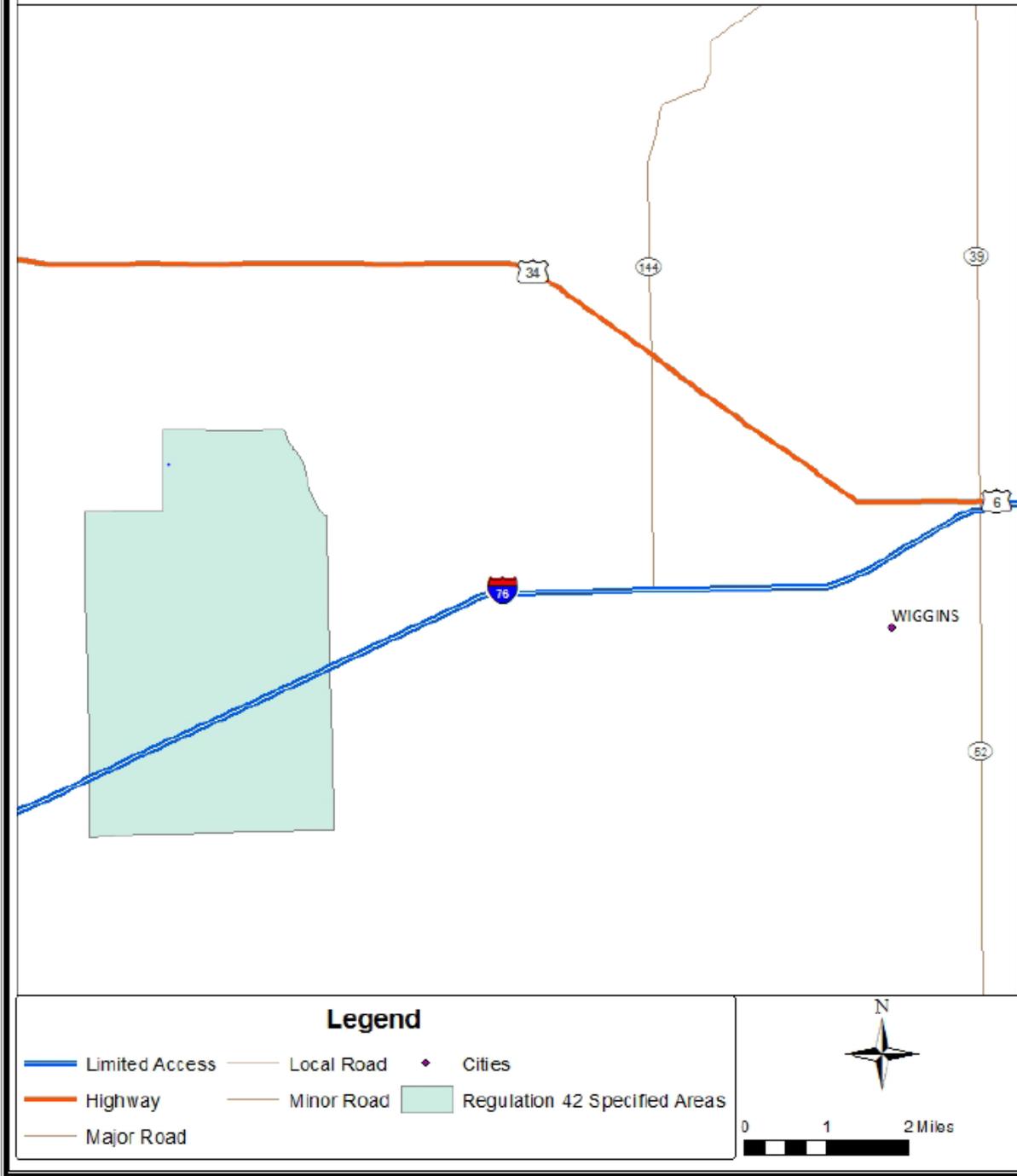


**Legend**

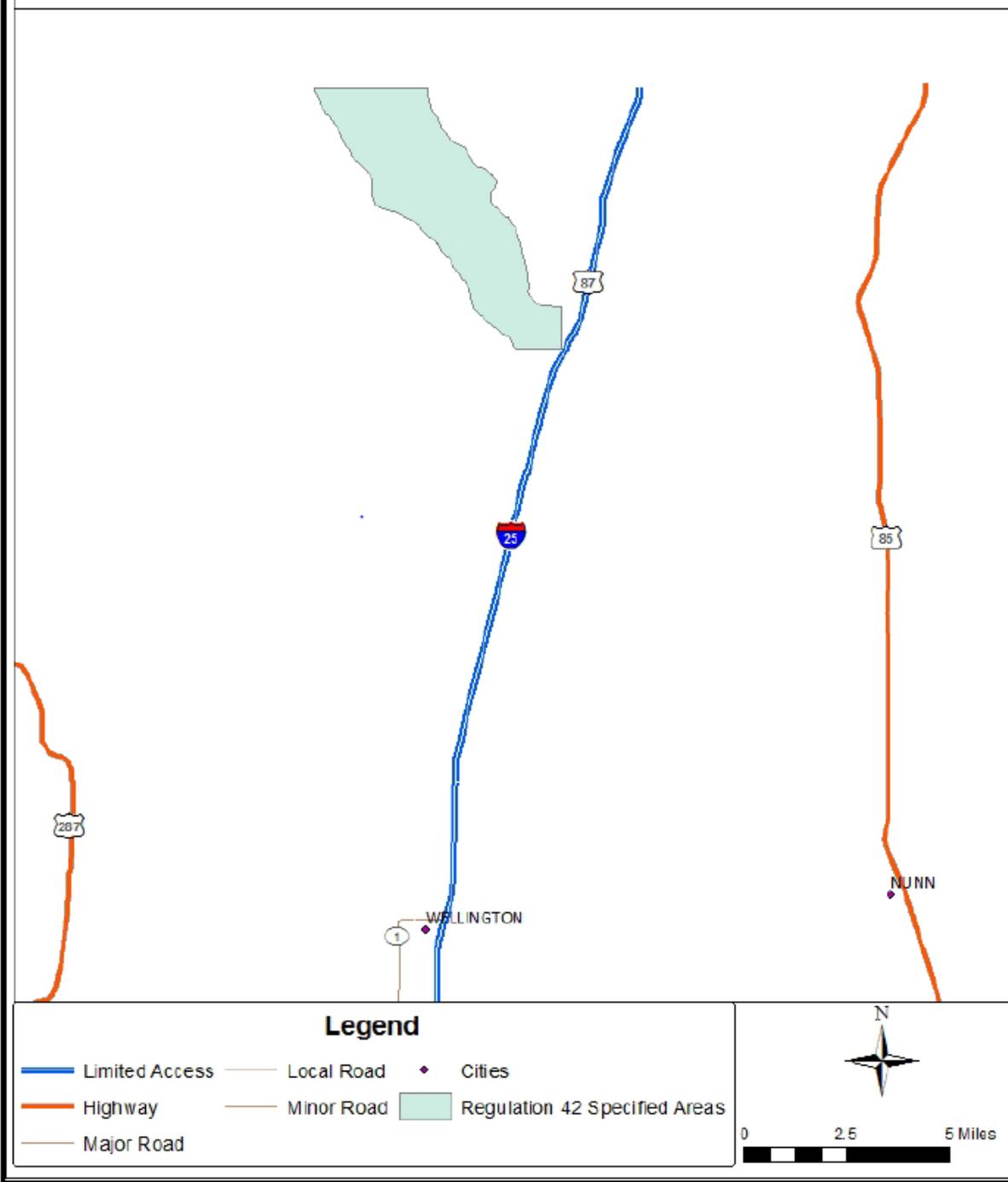
- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



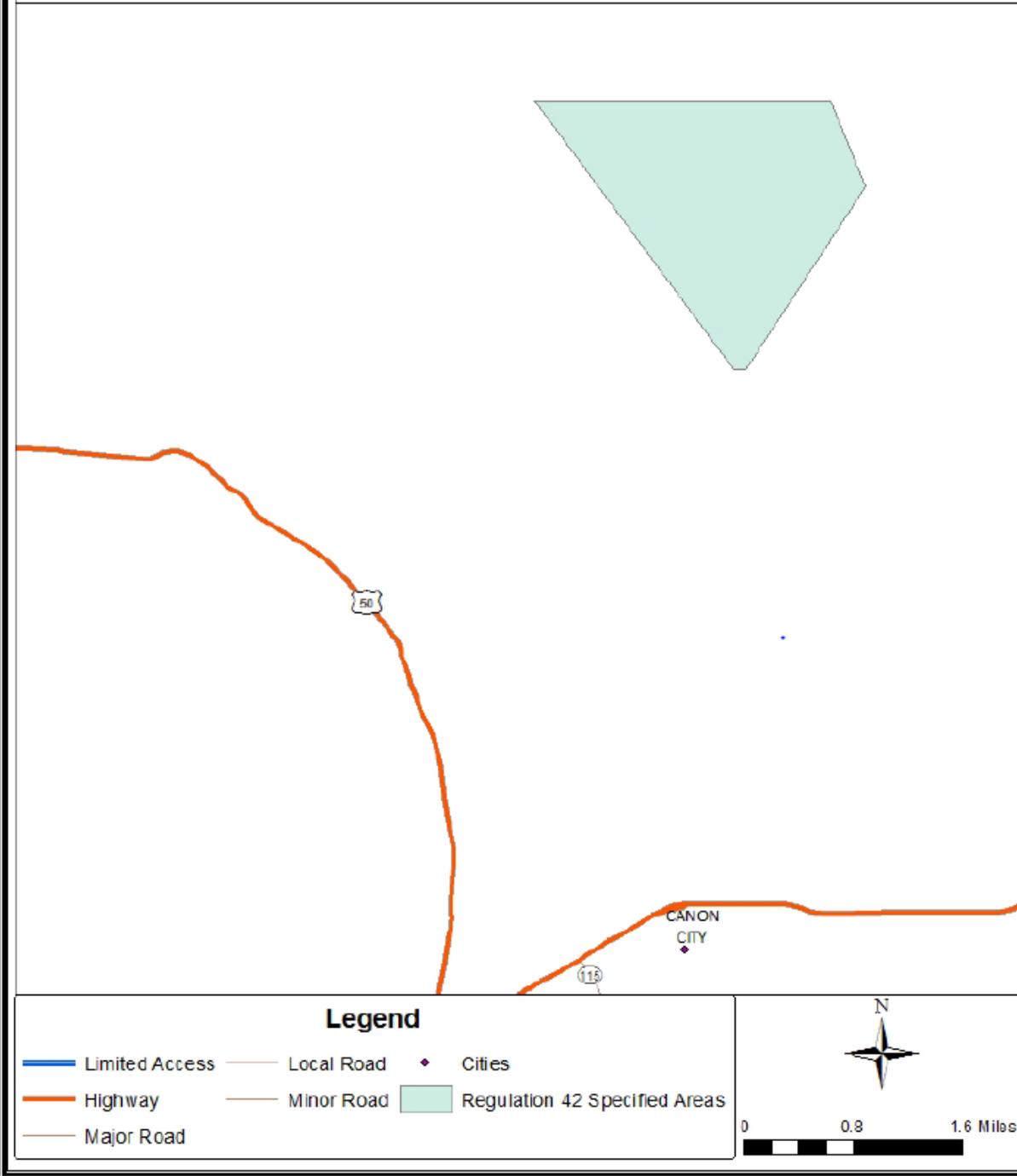
**Figure 21. Specified Area for Morgan County Quality Water District Wellfield.**



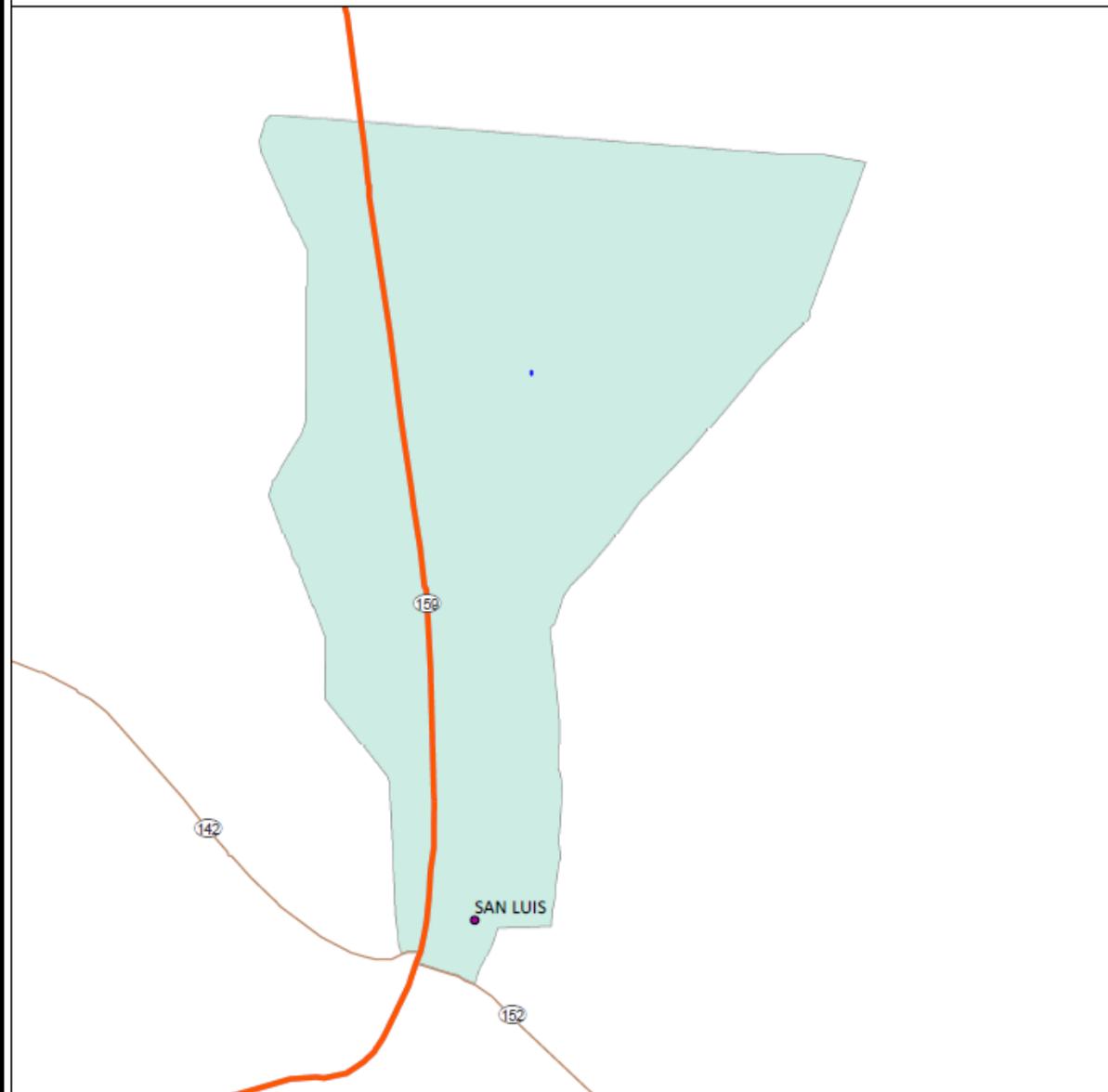
**Figure 22. Specified Area for Northern Colorado Water Association Wellfield.**



**Figure 23. Specified Area for Park Center Water District Wellfield.**

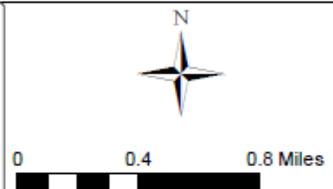


**Figure 24. Specified Area for San Luis Wellfield.**

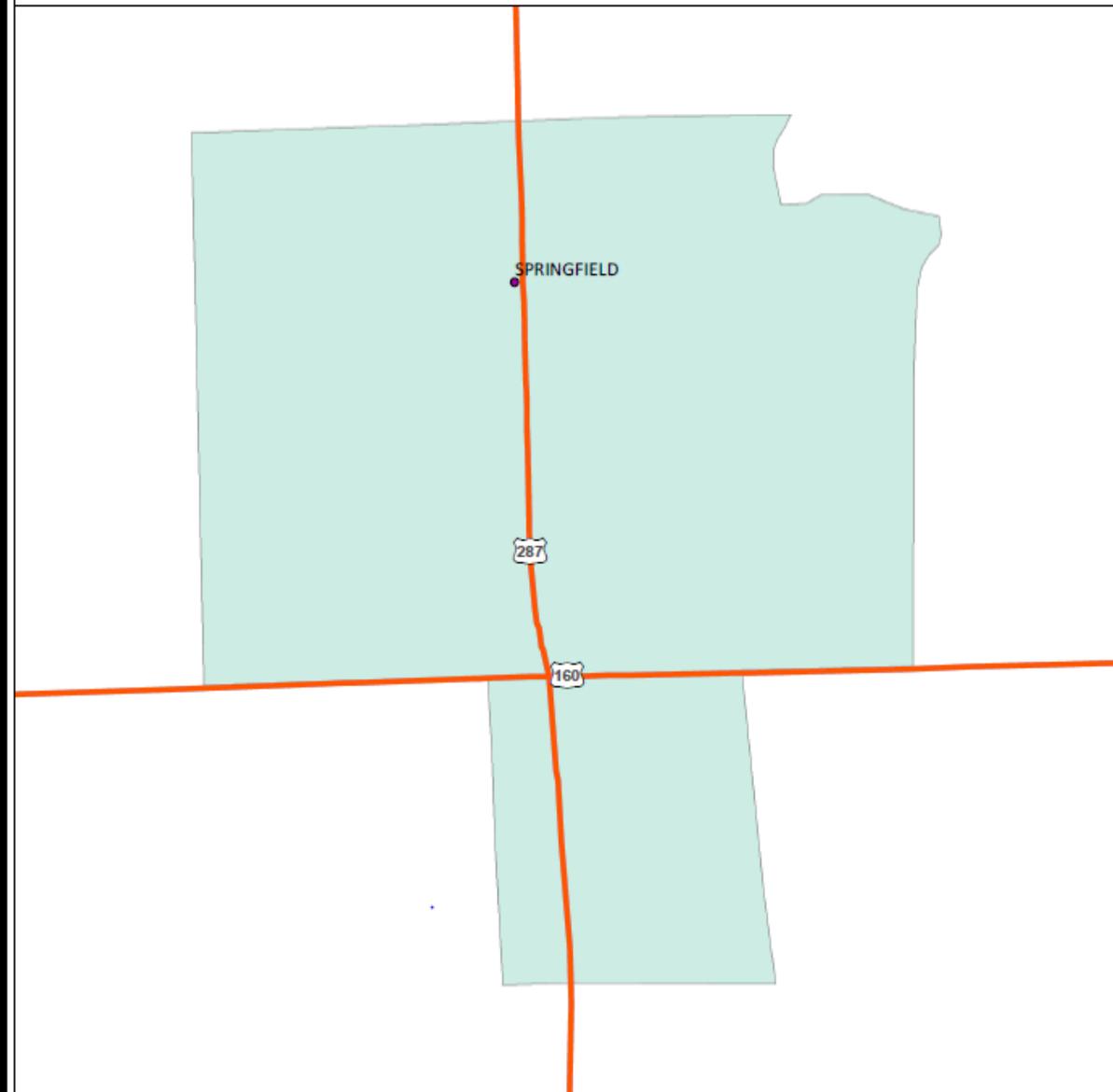


**Legend**

- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |



**Figure 25. Specified Area for Springfield, Colorado Wellfield.**



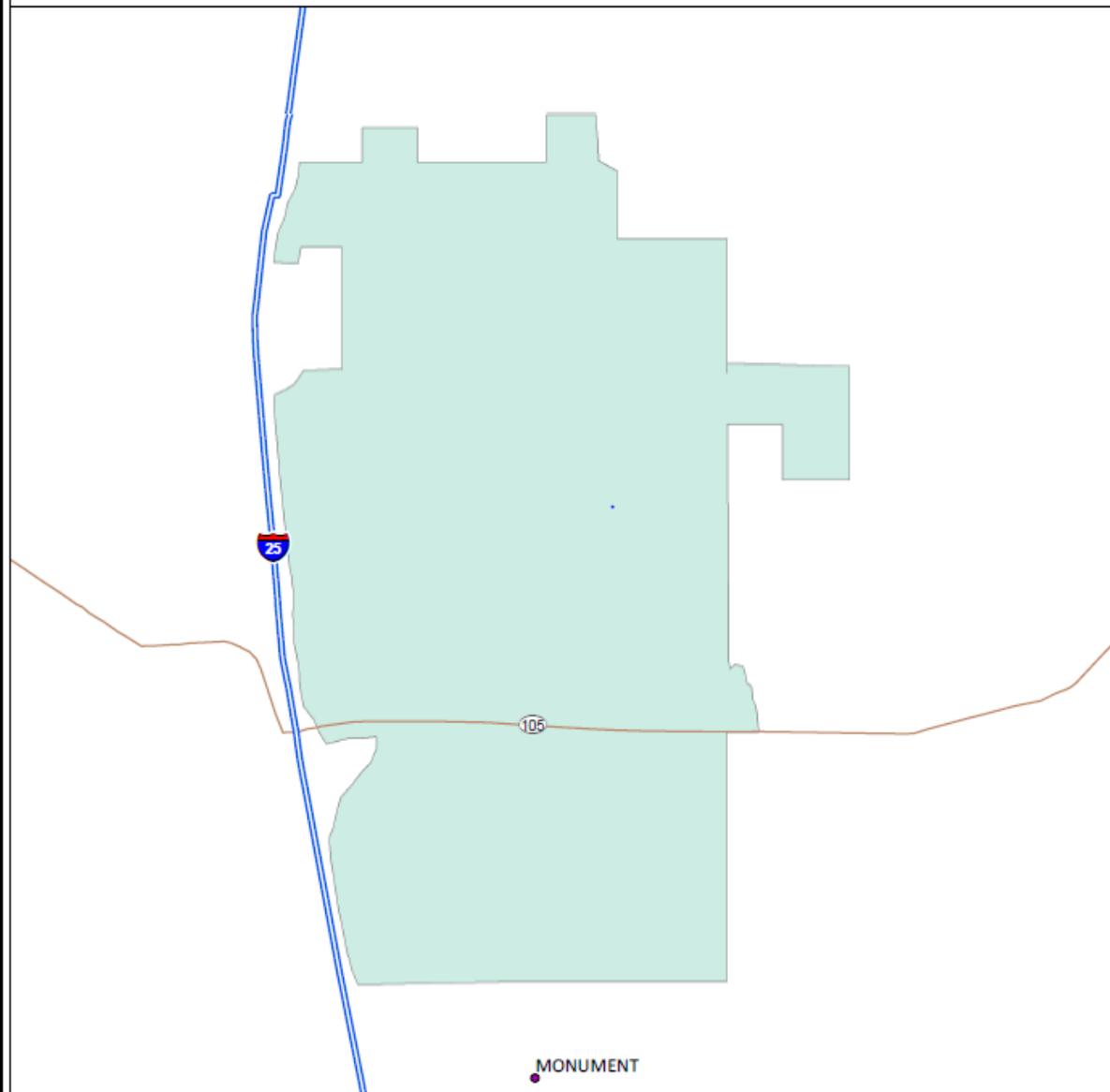
**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



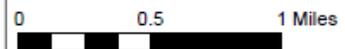
0 0.4 0.8 Miles

**Figure 26. Specified Area for Woodmoor Water and Sanitation District #1 Wellfield.**



**Legend**

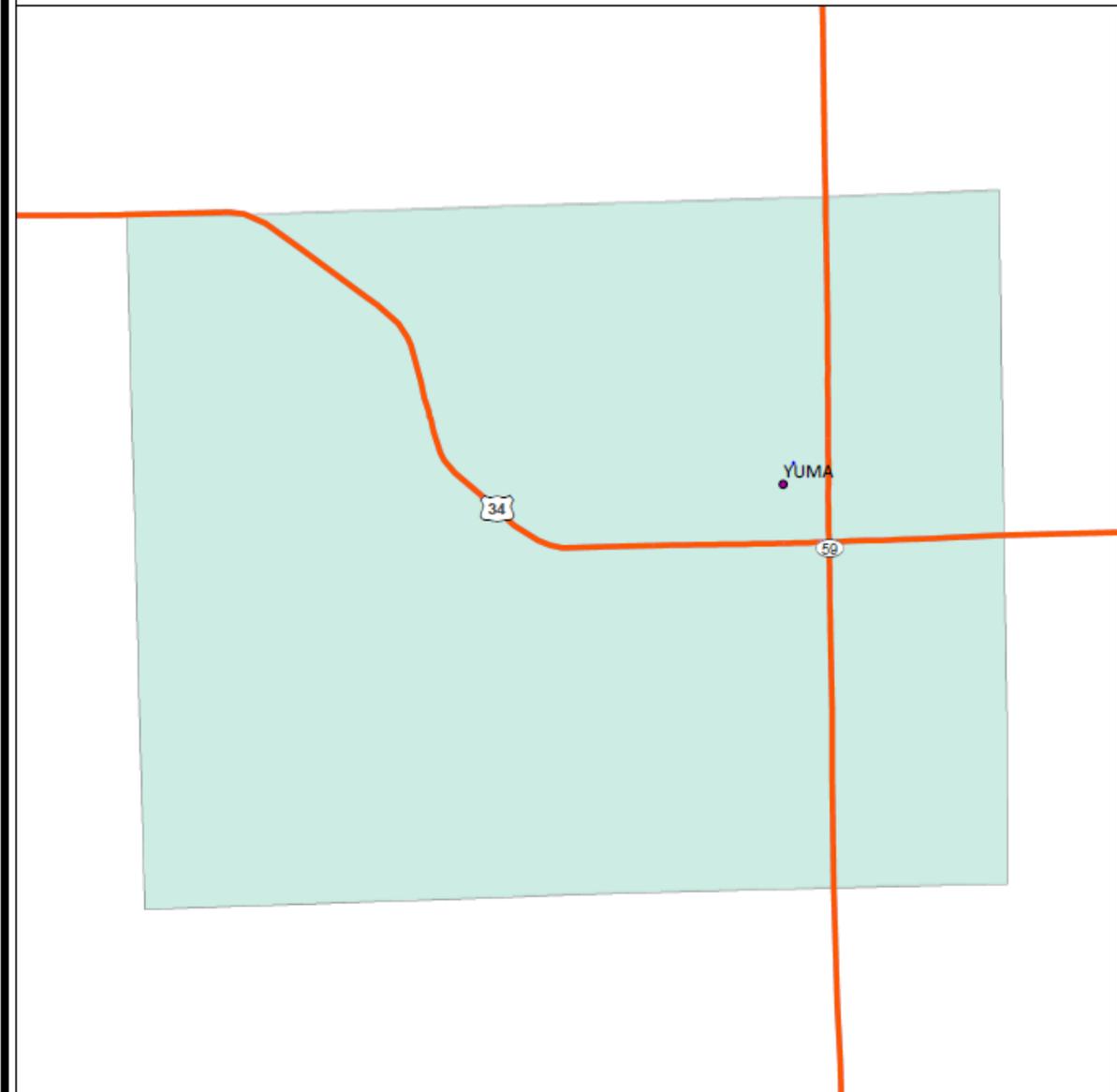
- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |



**Figure 27. Specified Area for Wray Wellfield #1 (south) and #2 (north)**



**Figure 28. Specified Area for Yuma, Colorado Wellfield.**



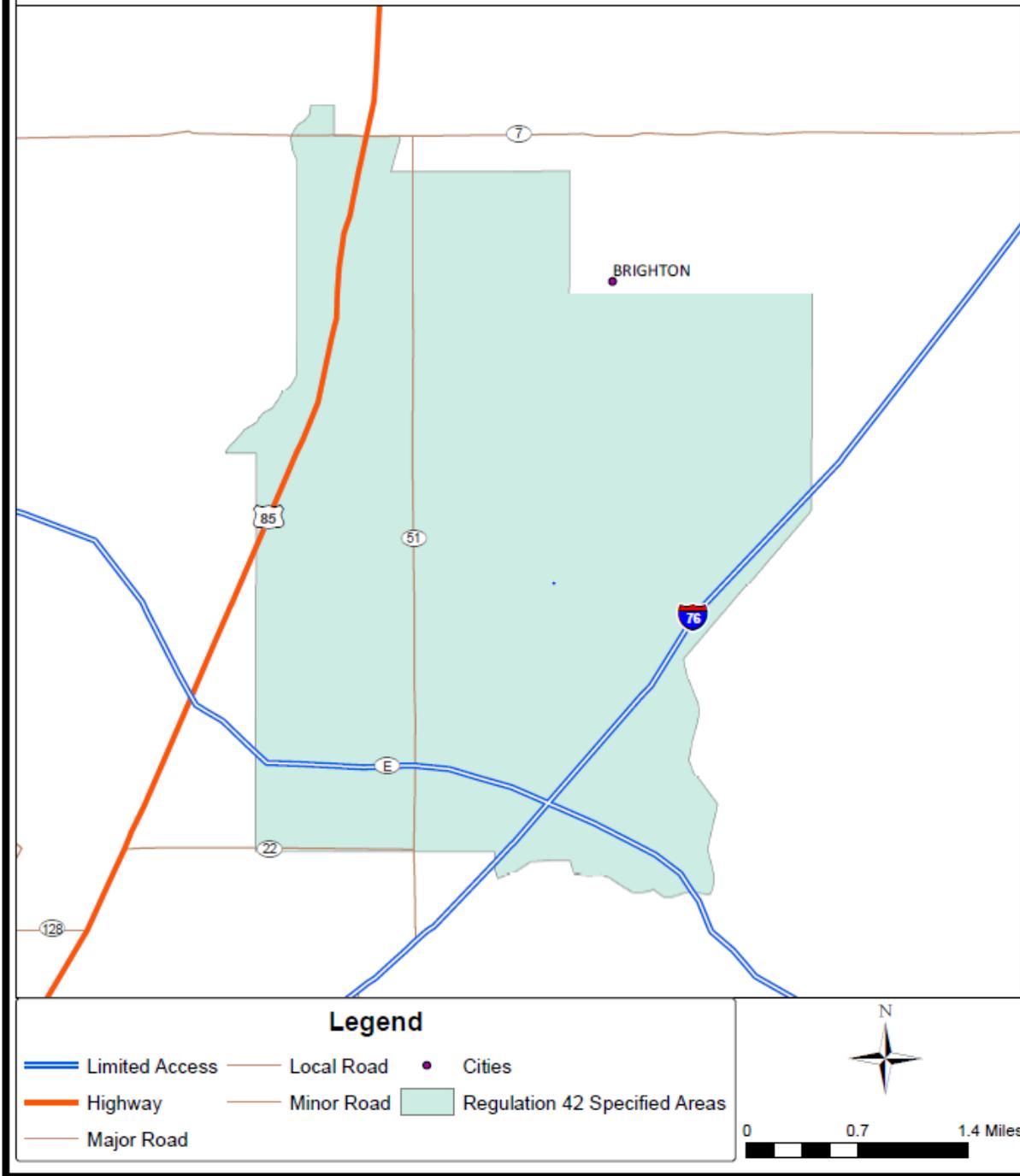
**Legend**

- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |

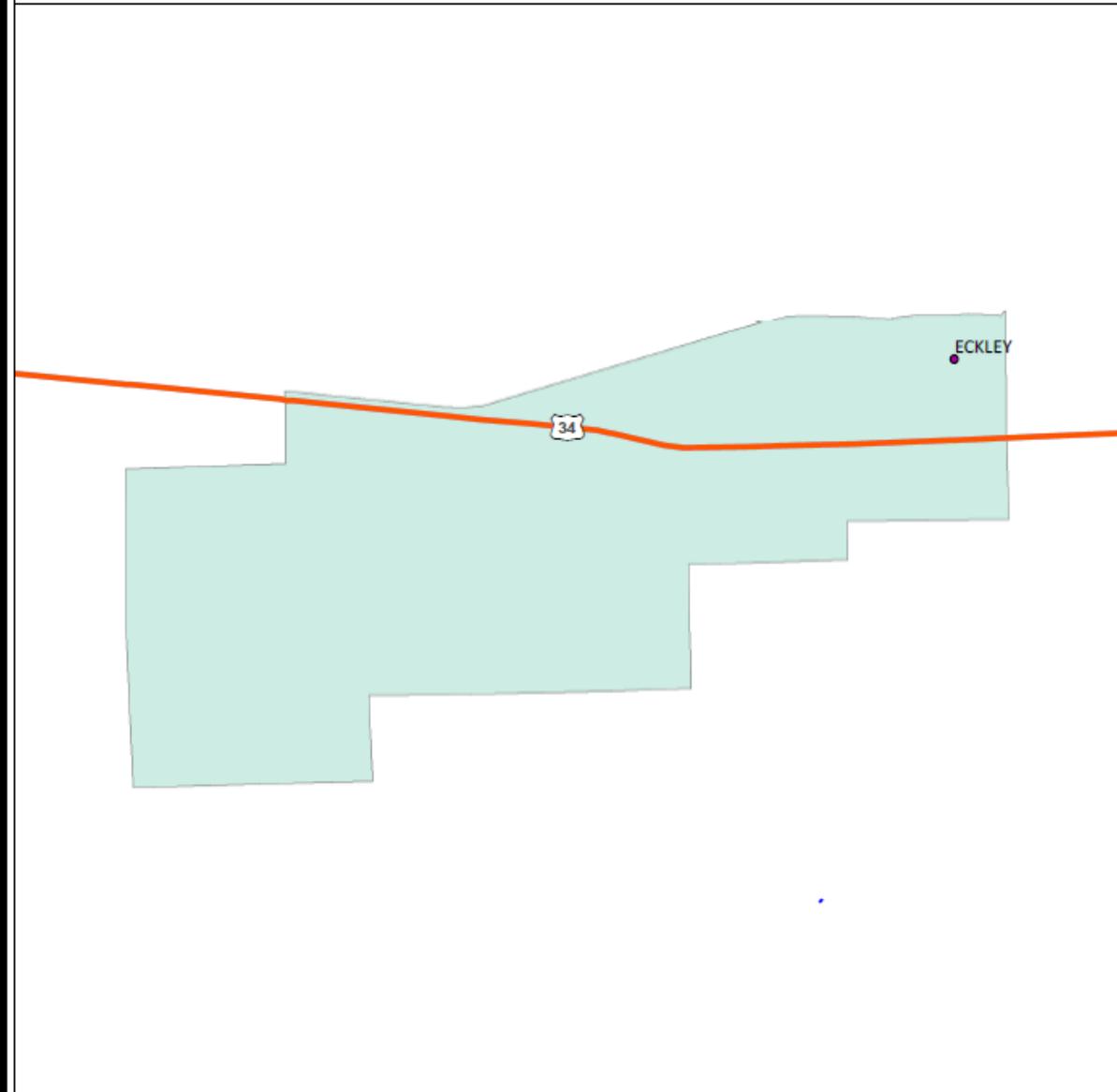


0 0.7 1.4 Miles

**Figure 29. Specified Area for the City of Brighton Wellfield.**

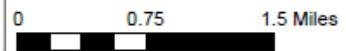


**Figure 30. Specified Area for the Town of Eckley Wellfield.**

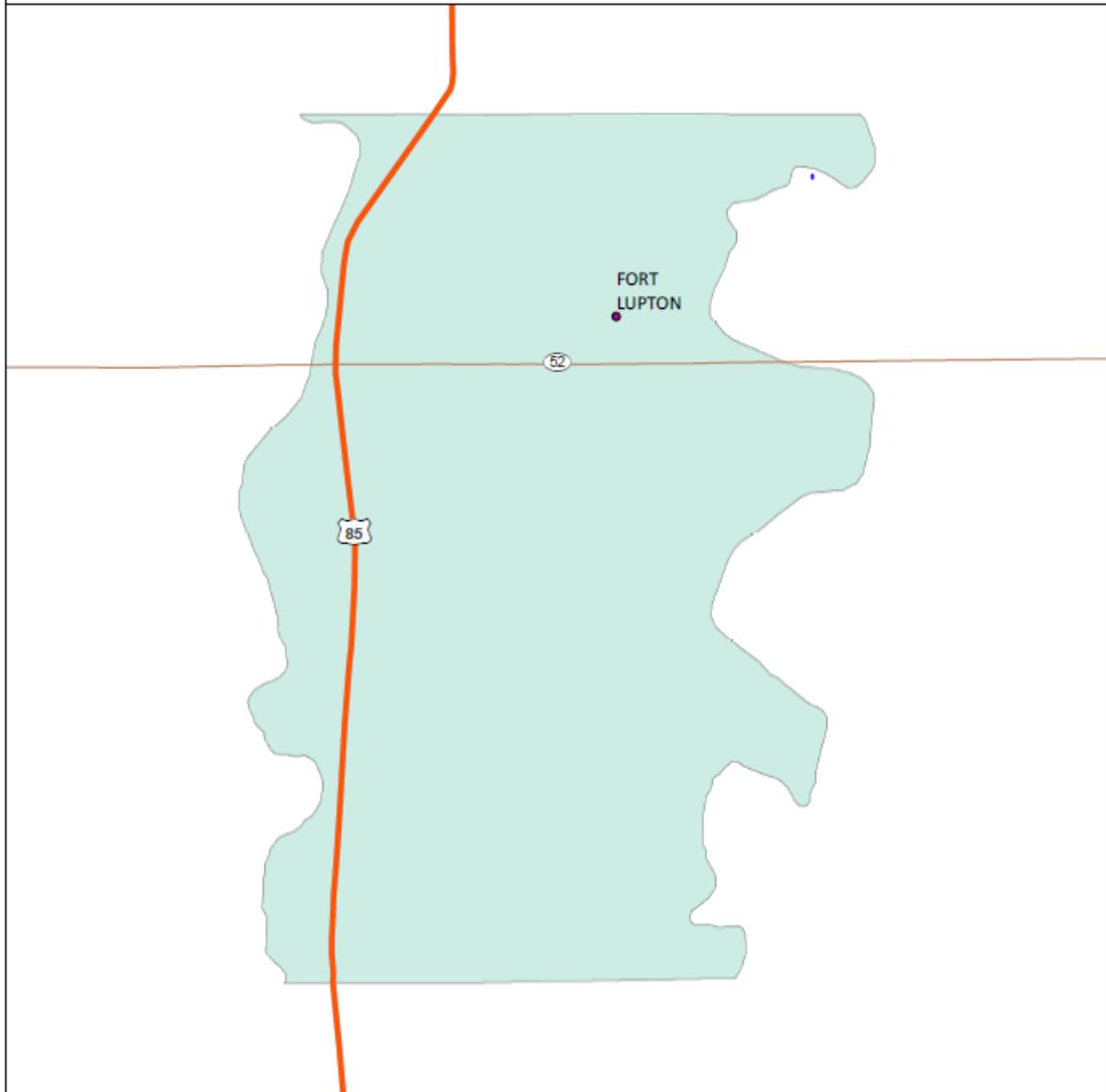


**Legend**

- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |

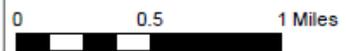


**Figure 31. Specified Area for the City of Fort Lupton Wellfield.**

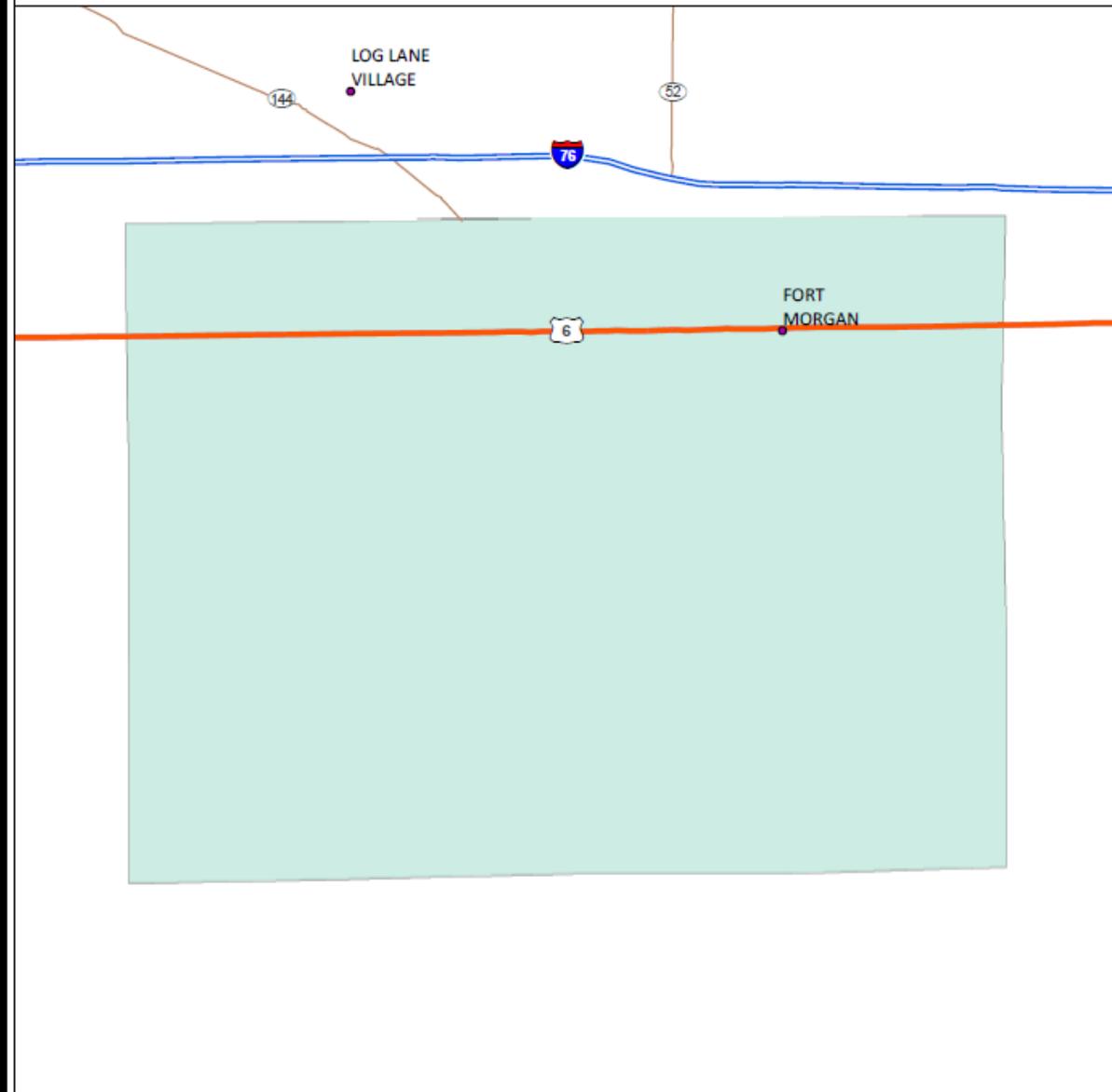


**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



**Figure 32. Specified Area for the City of Ft. Morgan Wellfield.**



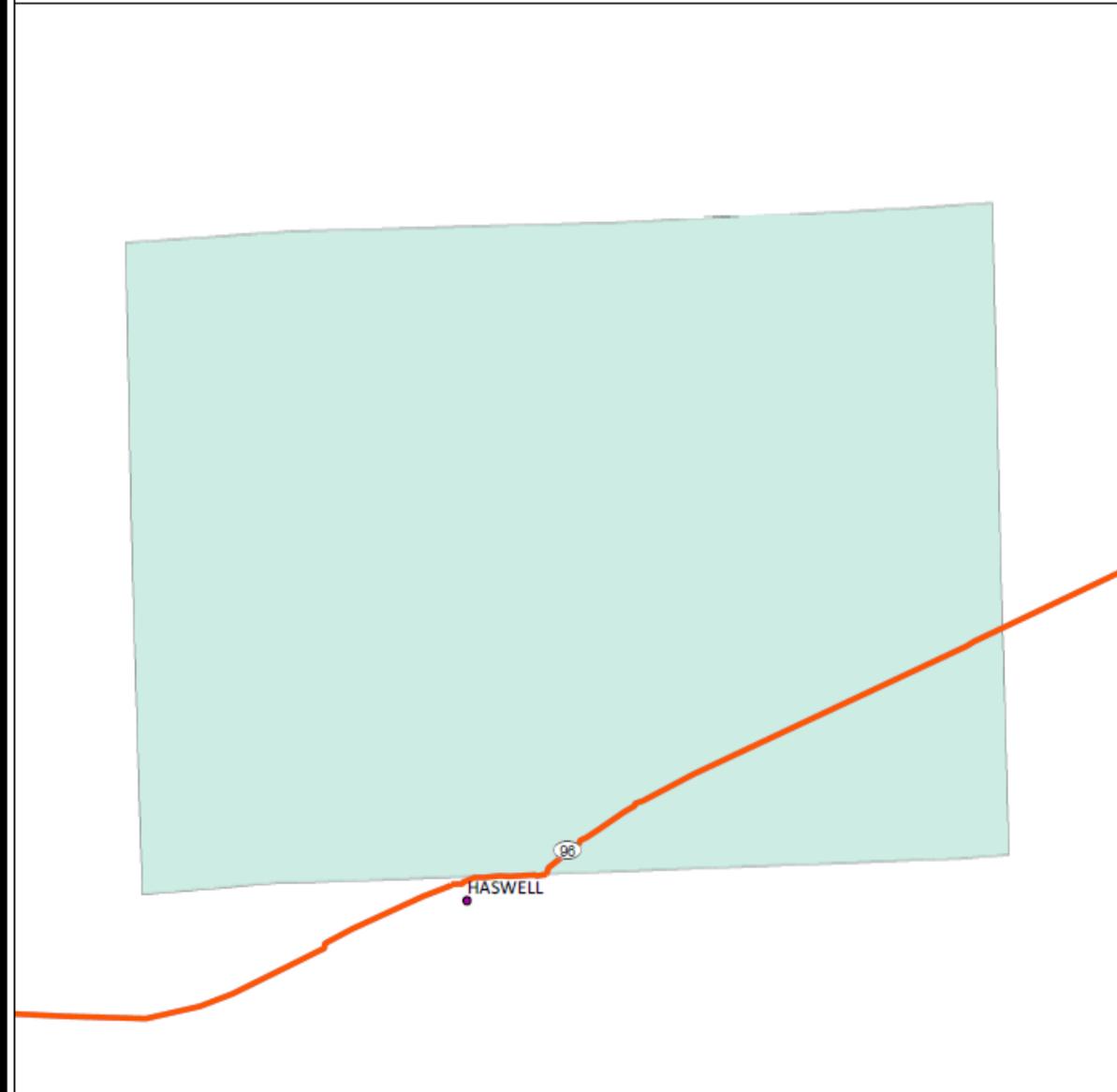
**Legend**

-  Limited Access
-  Local Road
-  Cities
-  Highway
-  Minor Road
-  Regulation 42 Specified Areas
-  Major Road



0 0.55 1.1 Miles

**Figure 33. Specified Area for Haswell, Colorado Wellfield.**



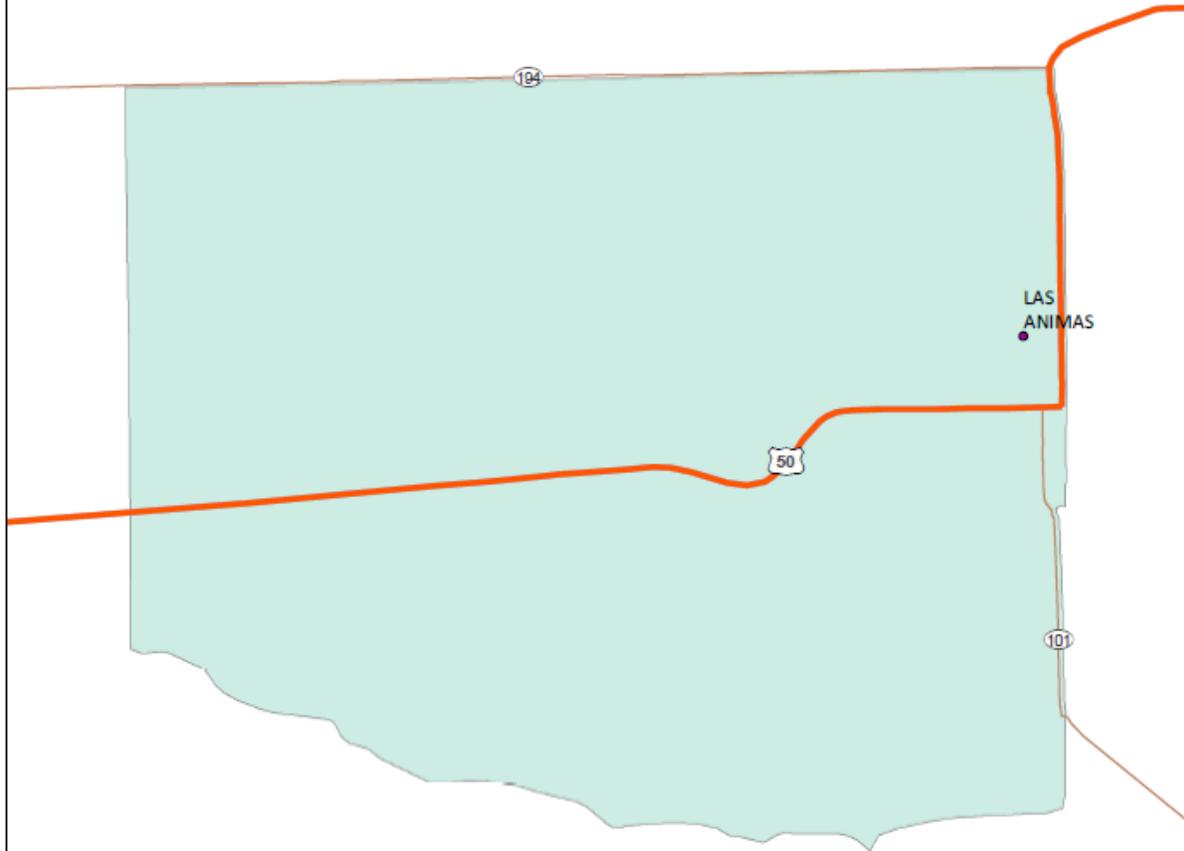
**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



0 0.35 0.7 Miles

Figure 34. Specified Area for Las Animas Wellfield.



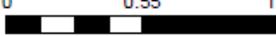
**Legend**

 Limited Access	 Local Road	 Cities
 Highway	 Minor Road	 Regulation 42 Specified Areas
 Major Road		

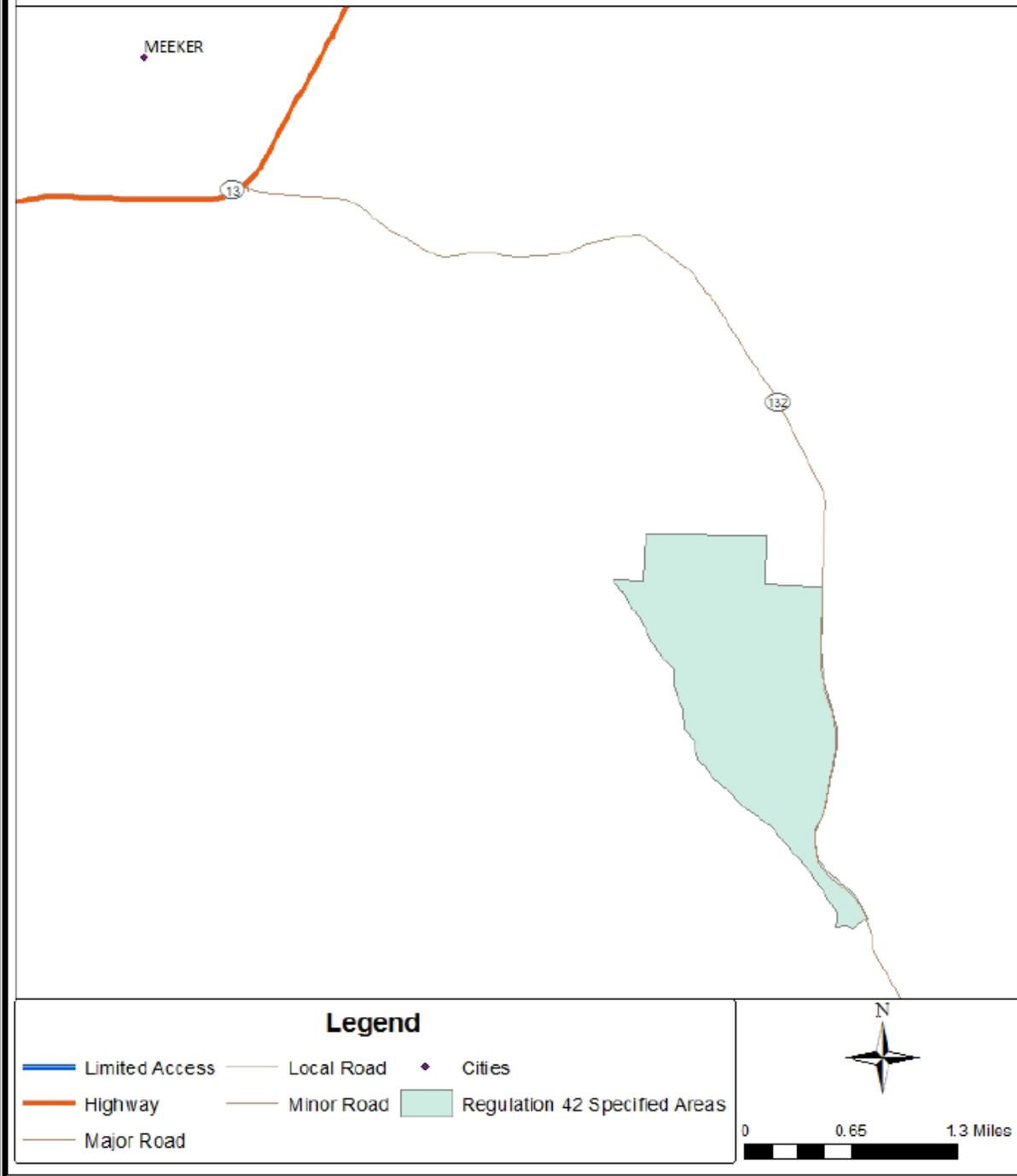
N



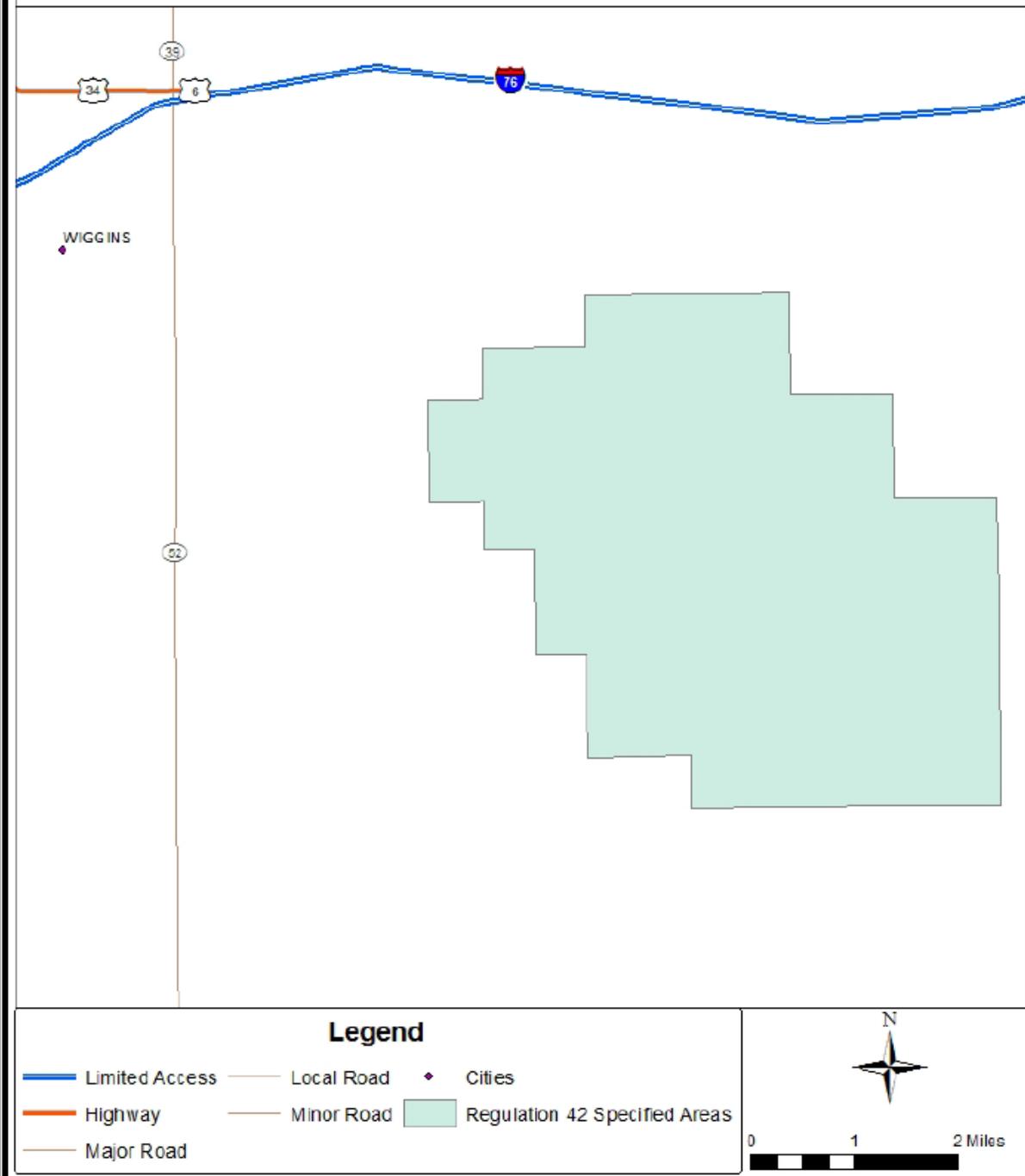
0 0.55 1.1 Miles



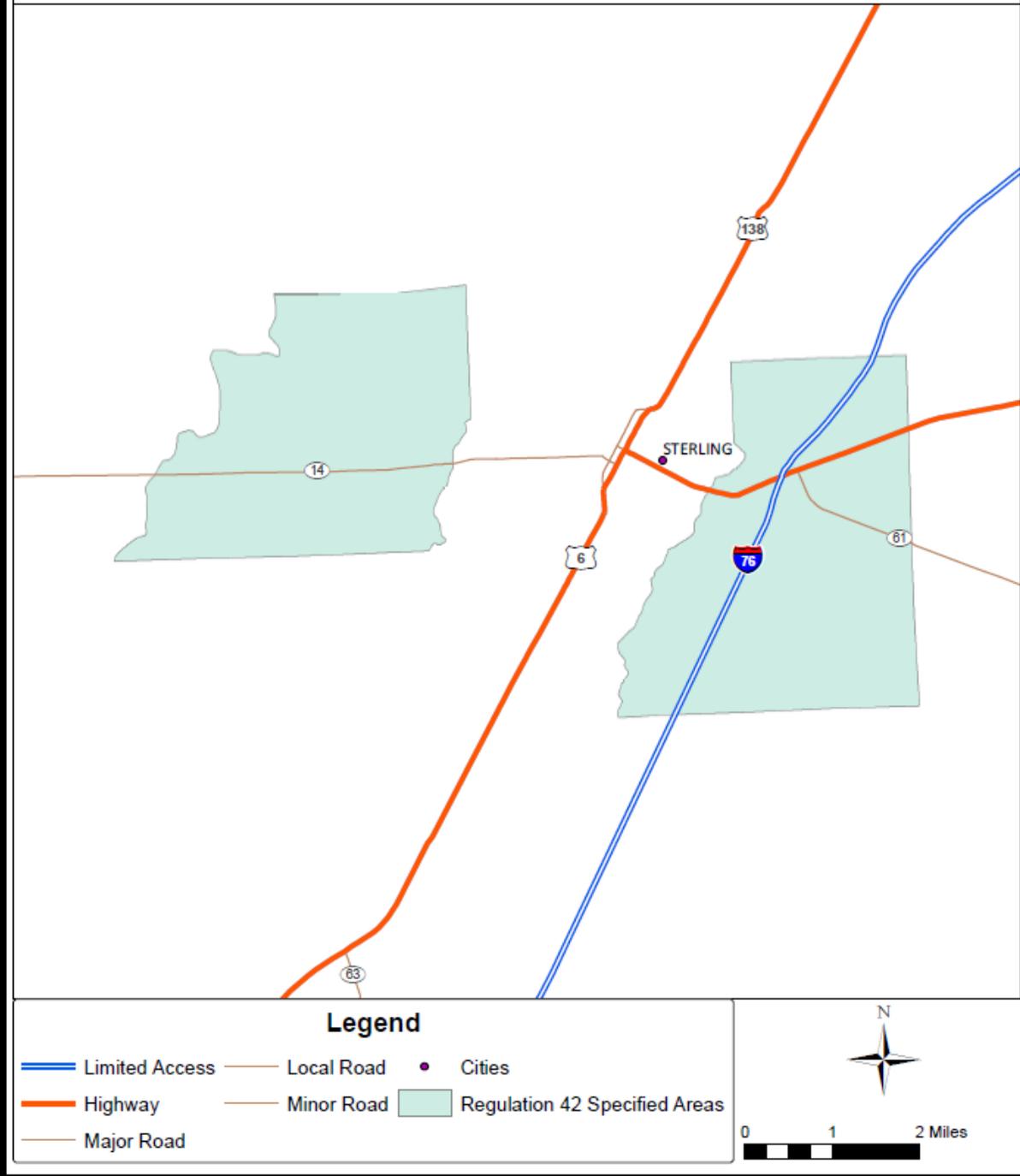
**Figure 35. Specified Area for the Town of Meeker Wellfield.**



**Figure 36. Specified Area for the Morgan County Quality Water District (San Arroyo Creek Basin)**



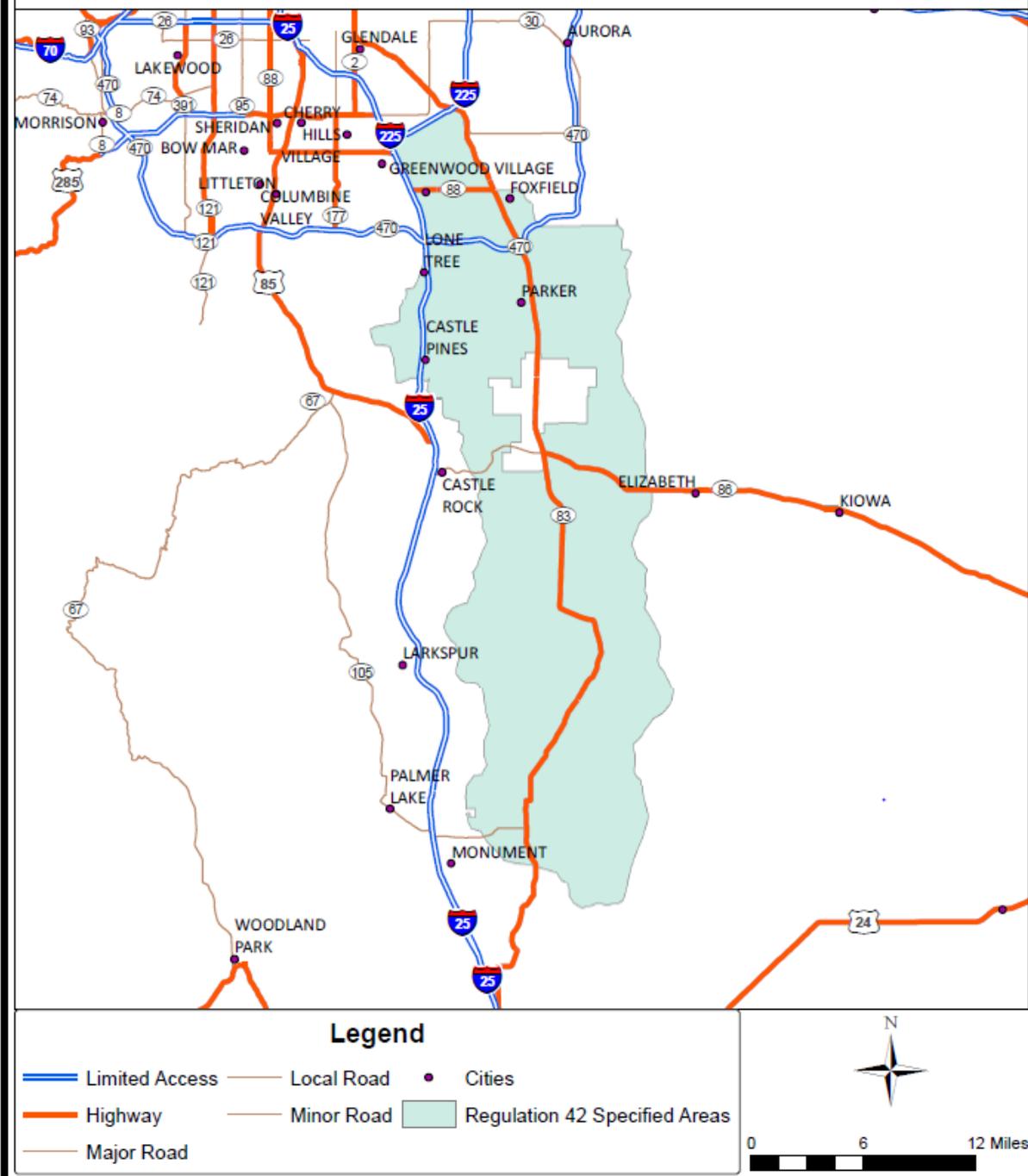
**Figure 37. Specified Area for Sterling East and West Wellfield.**



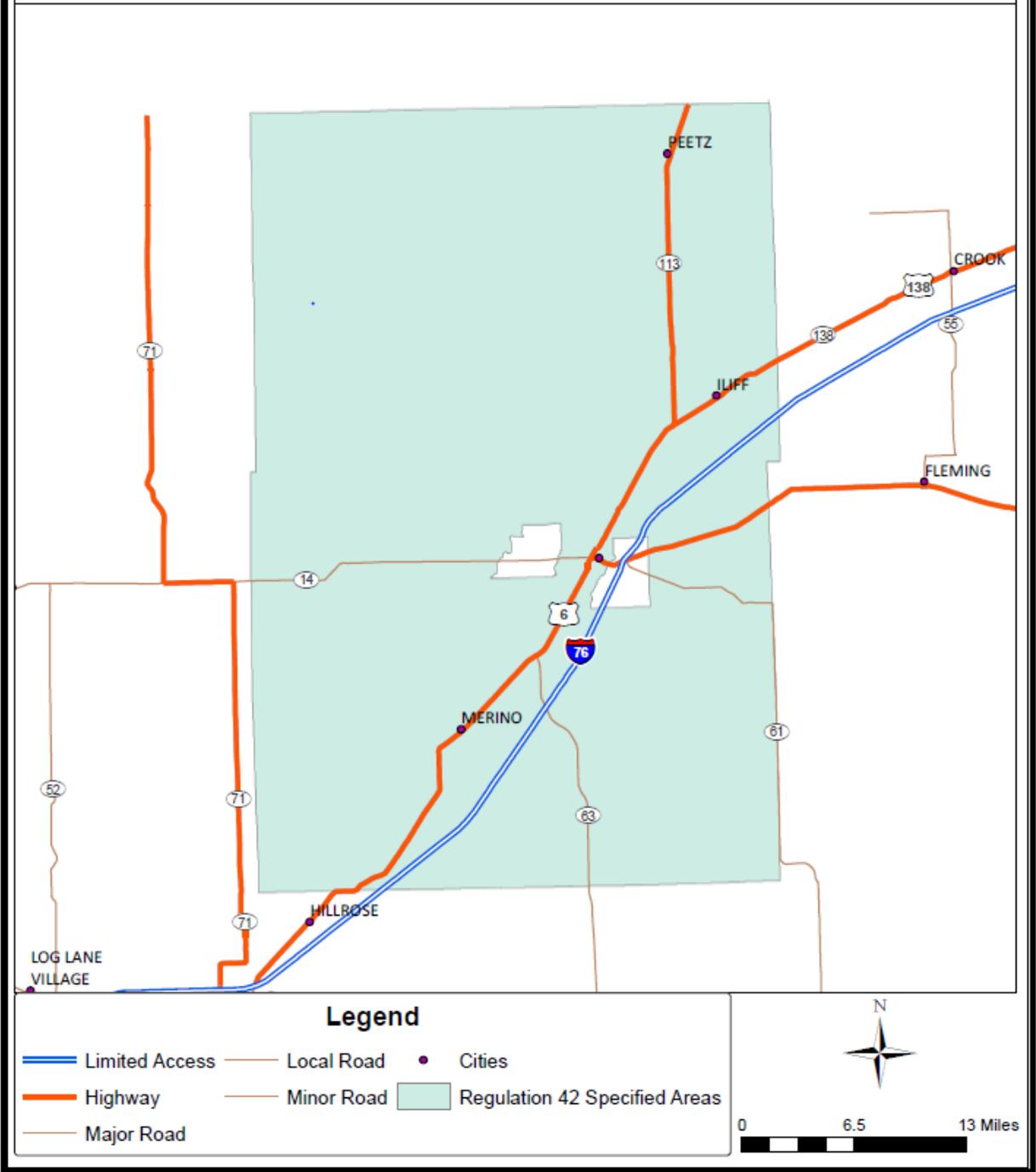
**Figure 38. Southwest Water Protection Area Kit Carson County.**



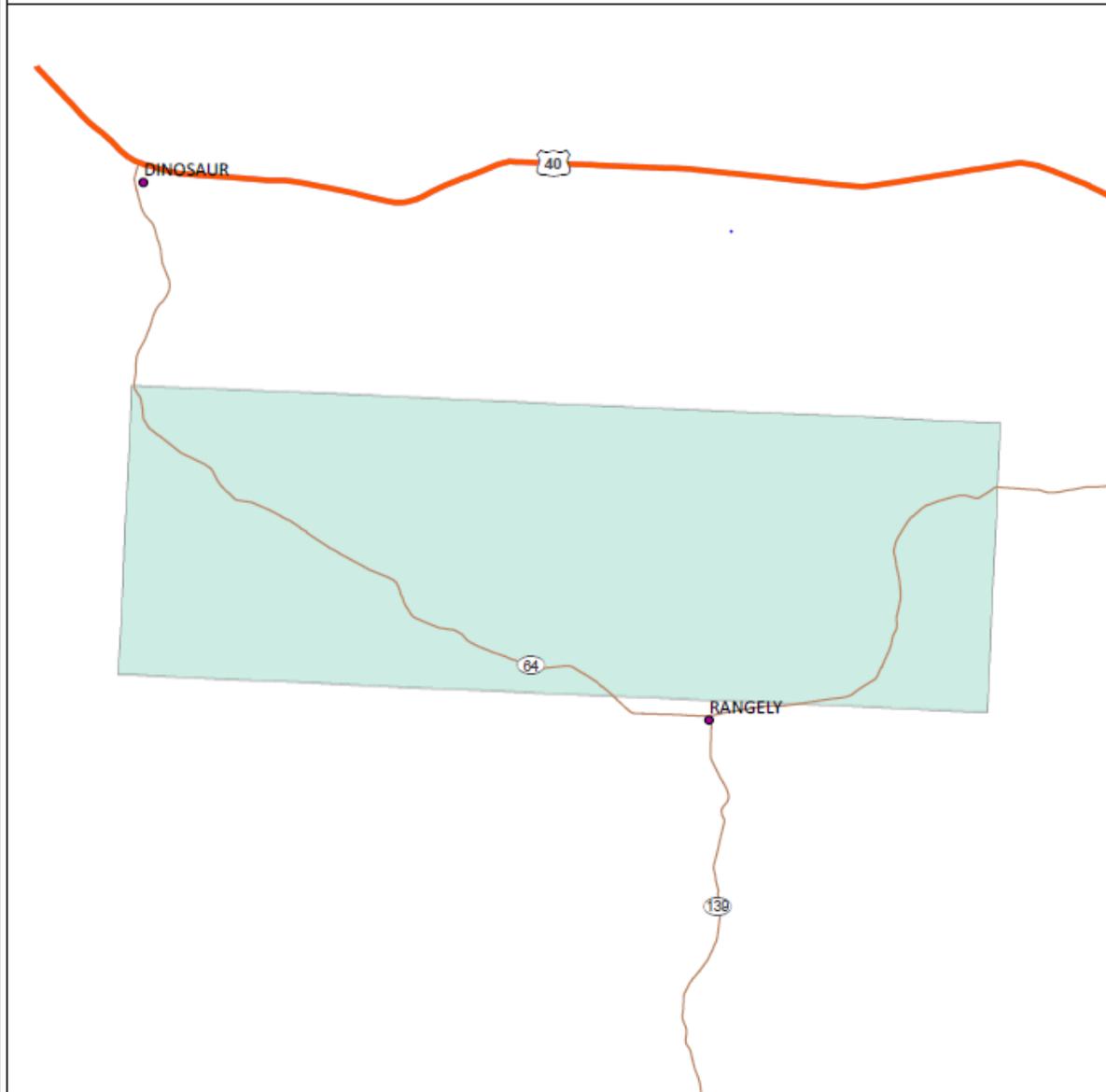
**Figure 39. Specified Area for the Upper Cherry Creek and Denver Basin Aquifers.**



**Figure 40. Specified Area for Colorado Oil and Gas Fields Logan, North Washington, and Northeast Morgan Counties.**

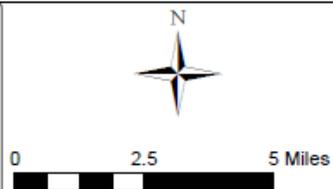


**Figure 41. Specified Area for Colorado Oil and Gas Fields, Rio Blanco County.**

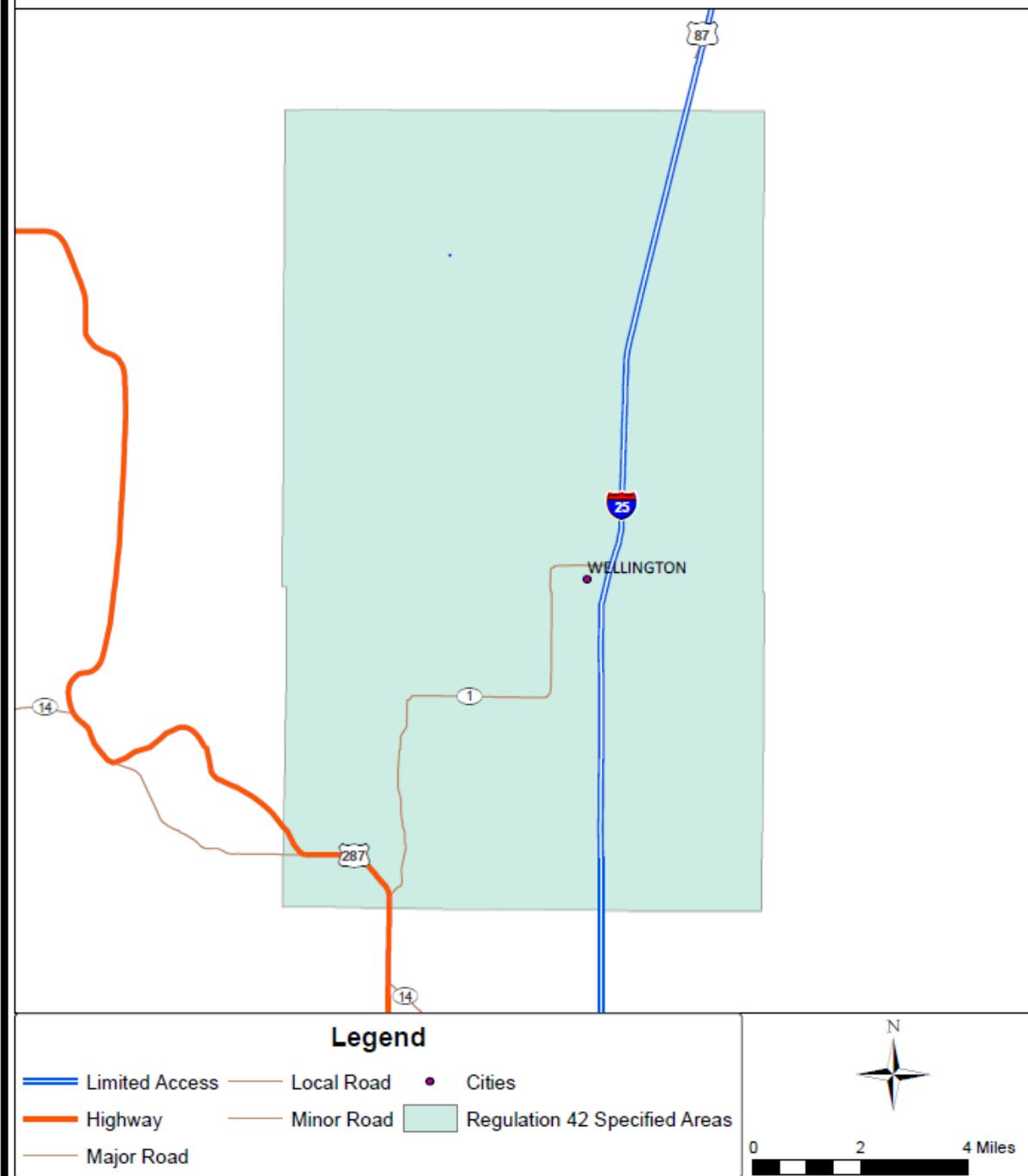


**Legend**

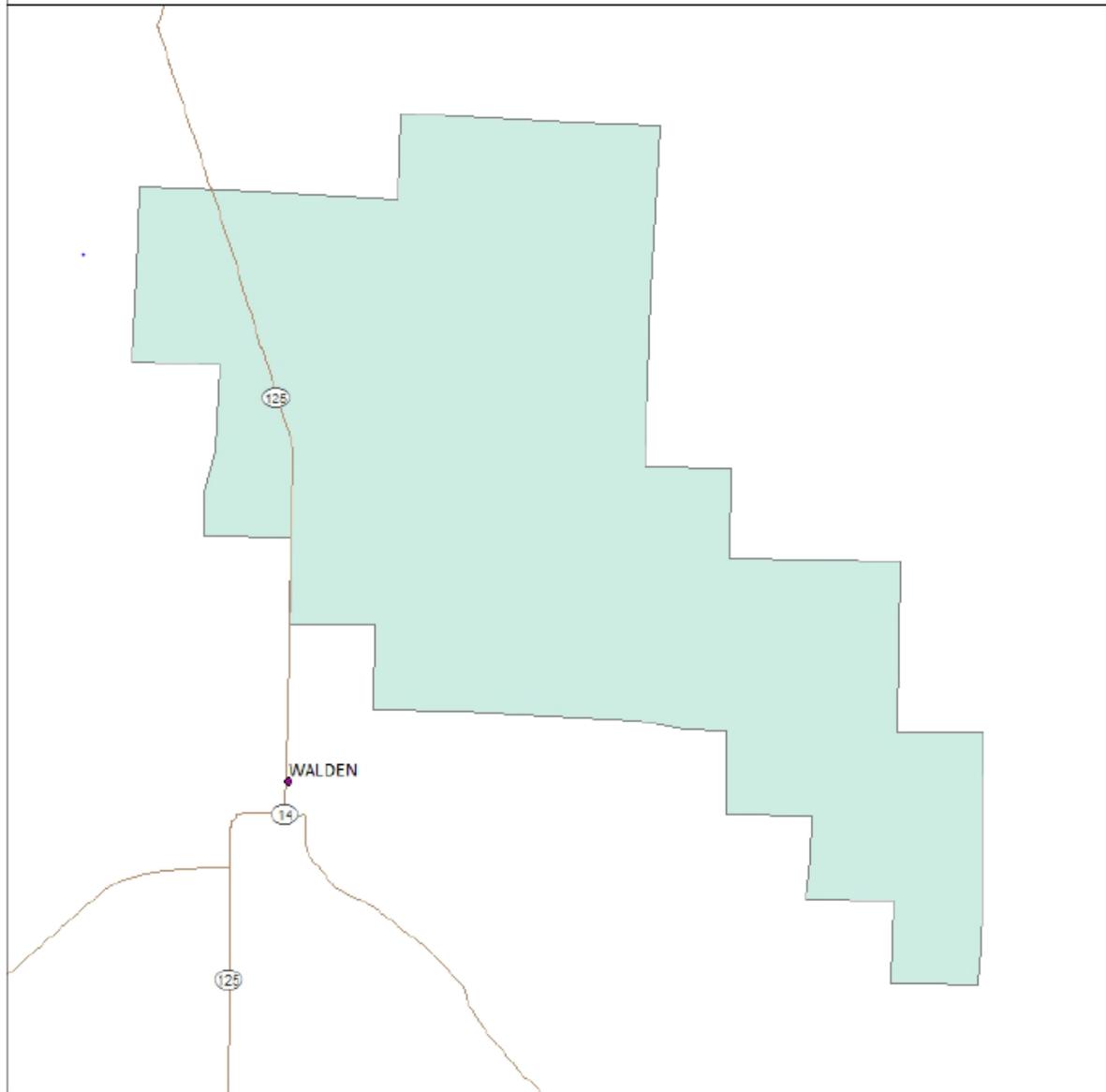
- Limited Access
- Highway
- Major Road
- Local Road
- Minor Road
- Cities
- Regulation 42 Specified Areas



**Figure 42. Specified Area for Colorado Oil and Gas Fields, Larimer County.**



**Figure 43. Specified Area for Colorado Oil and Gas Fields, Jackson County.**



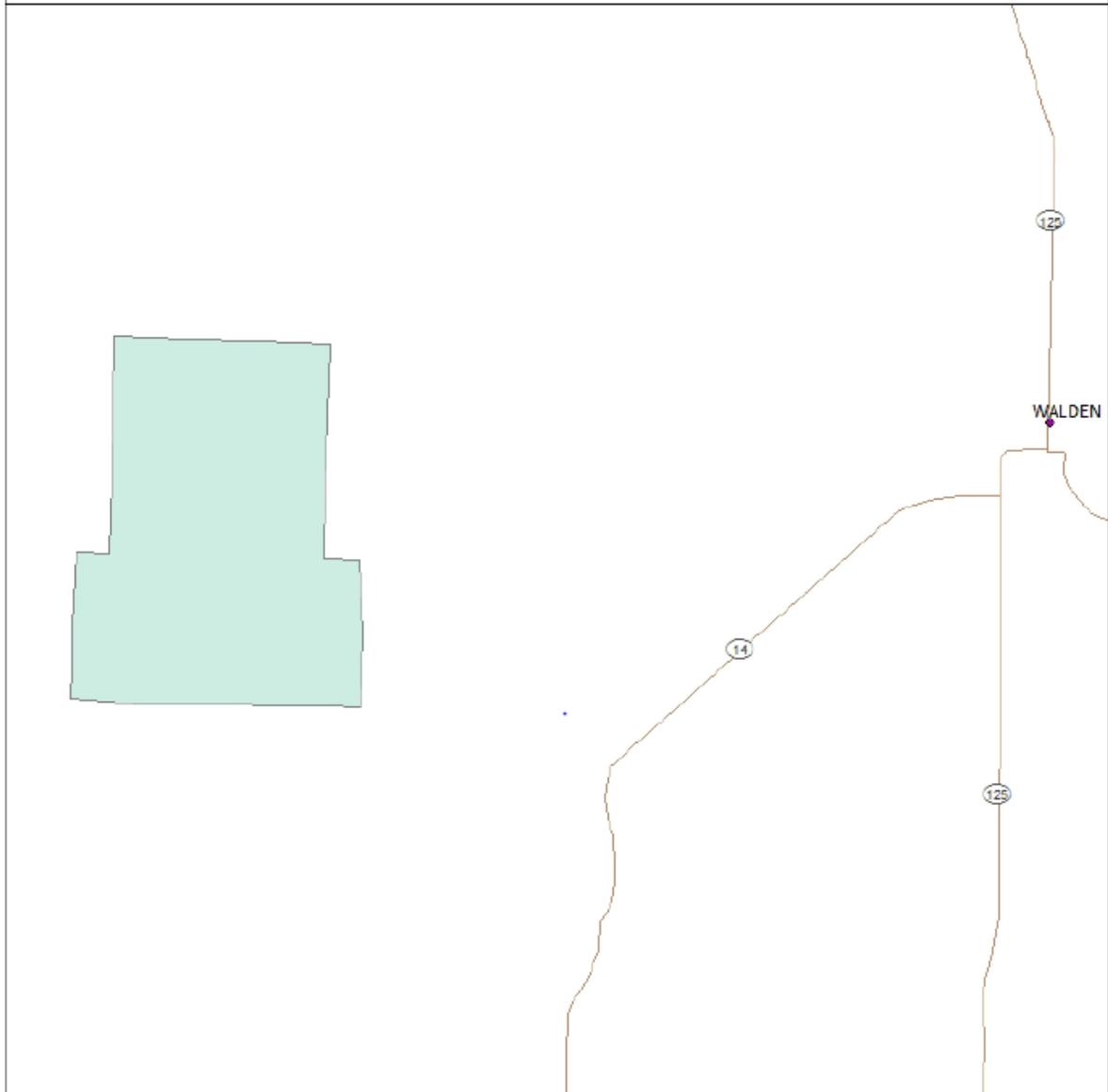
**Legend**

- Limited Access
- Highway
- Major Road
- Local Road
- Minor Road
- ◆ Cities
- Regulation 42 Specified Areas



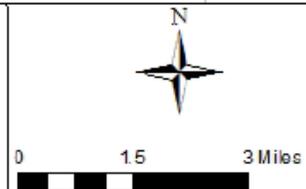
0 1 2 Miles

**Figure 44. Specified Area for Colorado Oil and Gas Fields, Jackson County.**

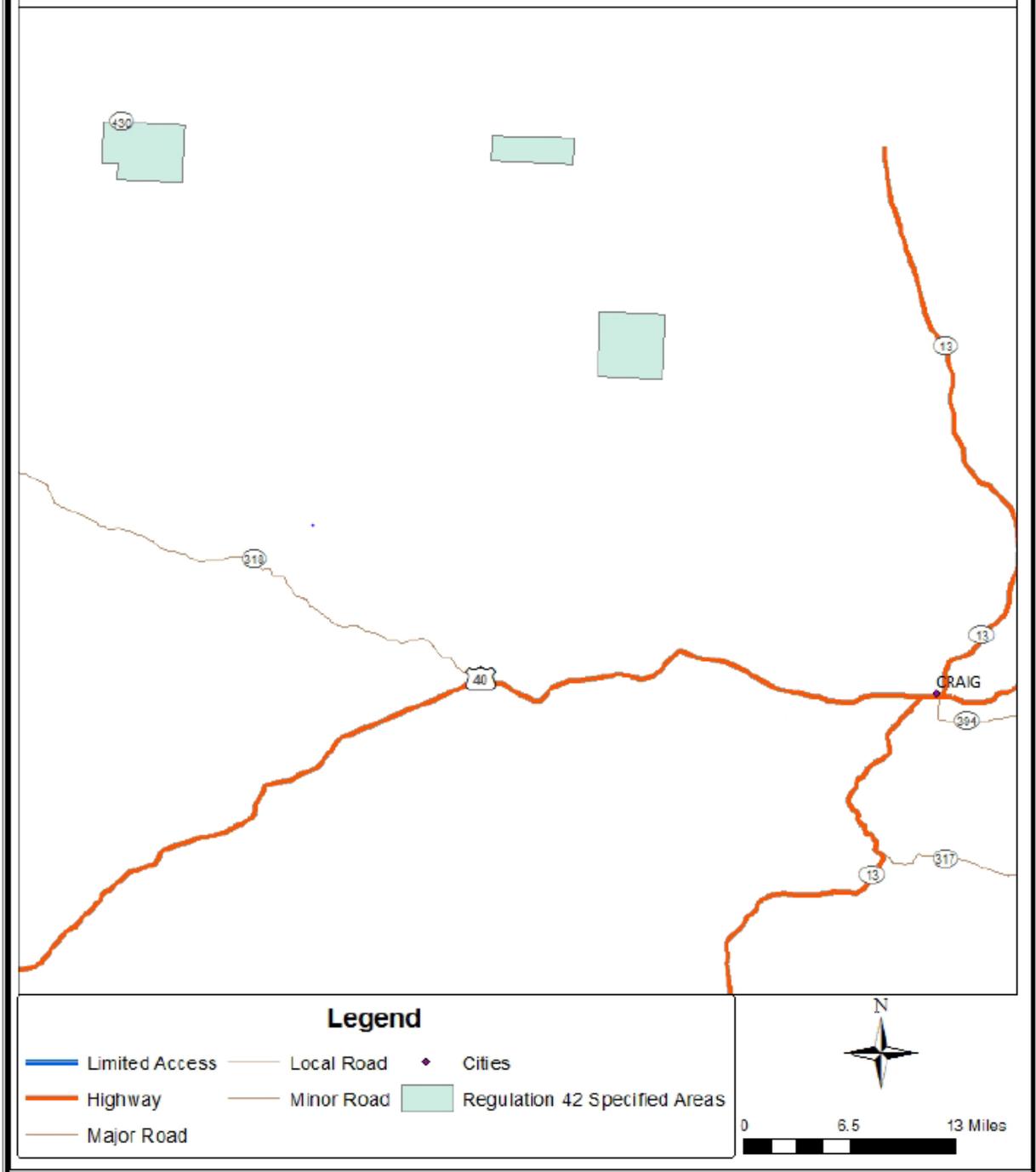


**Legend**

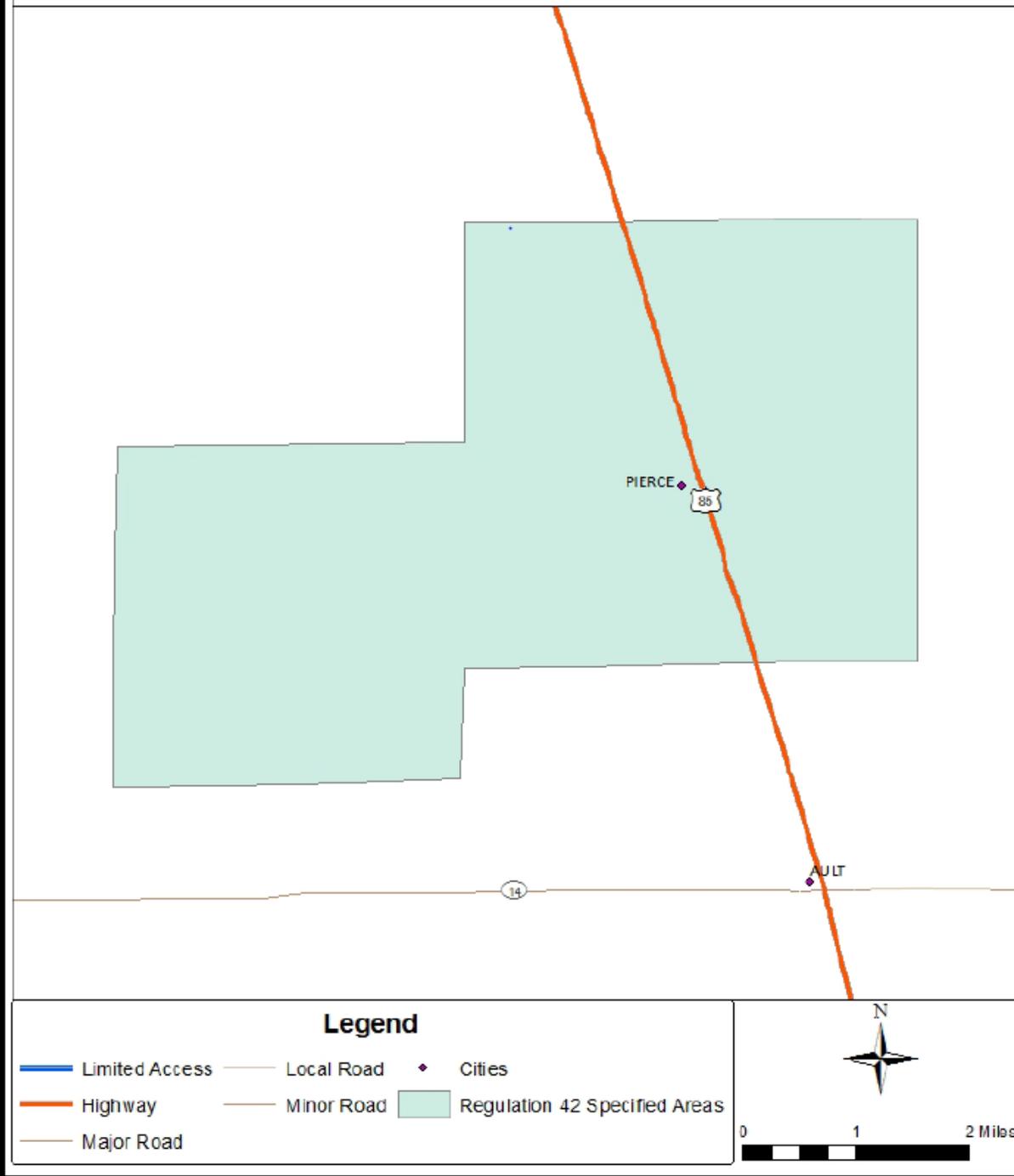
- |                |            |                               |
|----------------|------------|-------------------------------|
| Limited Access | Local Road | Cities                        |
| Highway        | Minor Road | Regulation 42 Specified Areas |
| Major Road     |            |                               |



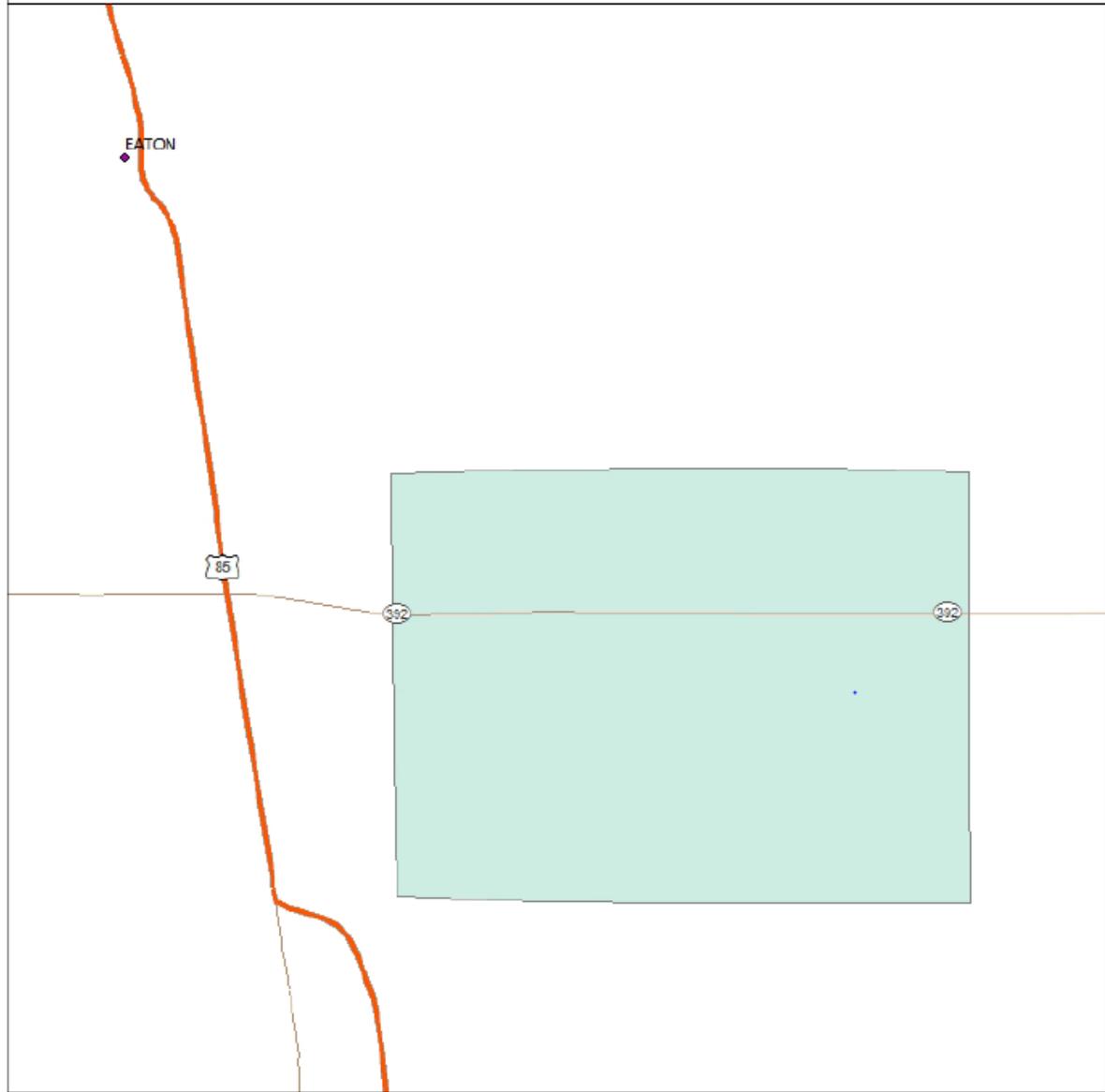
**Figure 45. Specified Area for Colorado Oil and Gas Fields, Moffat County.**



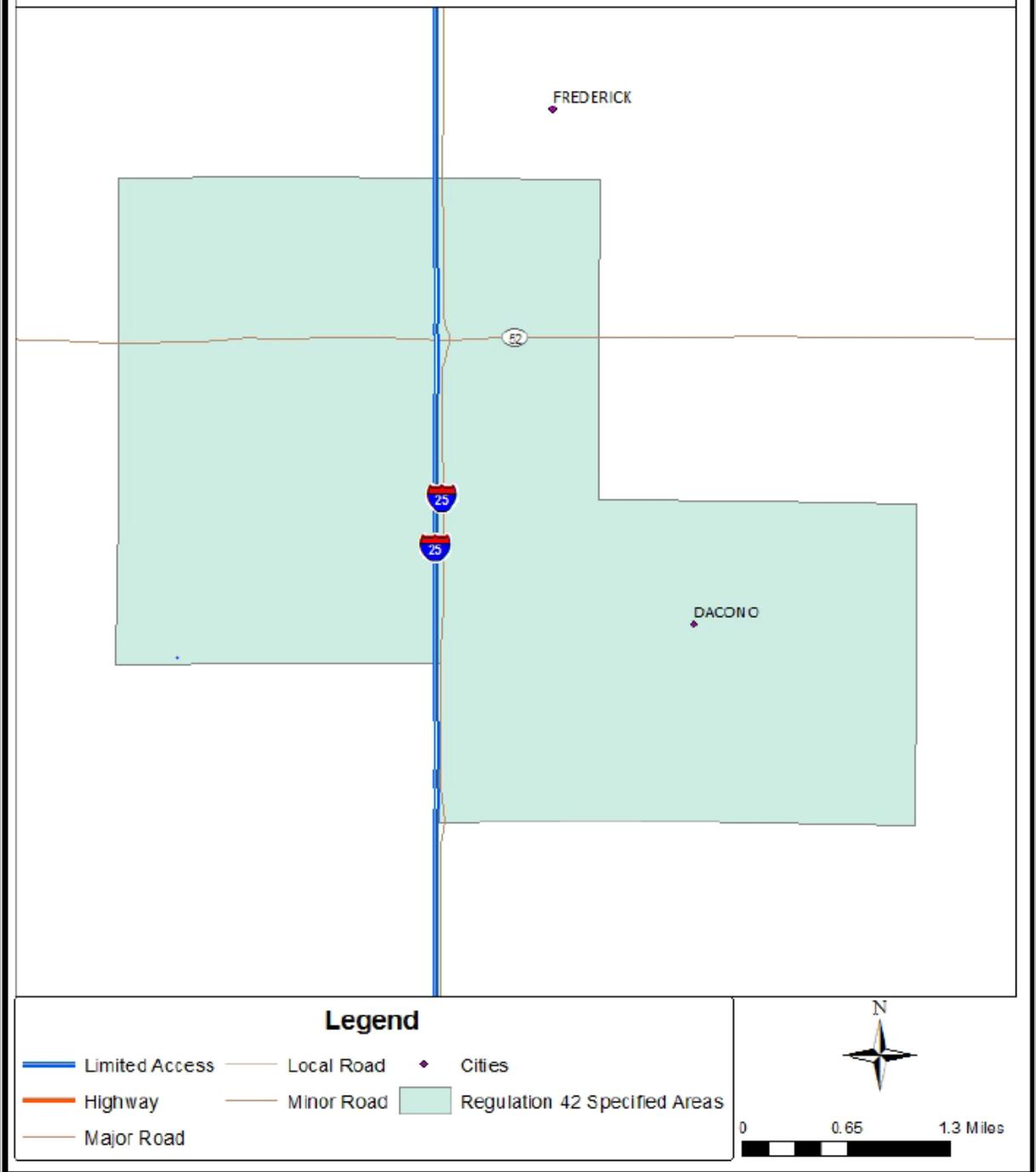
**Figure 46. Specified Area for Colorado Oil and Gas Fields, Weld County.**



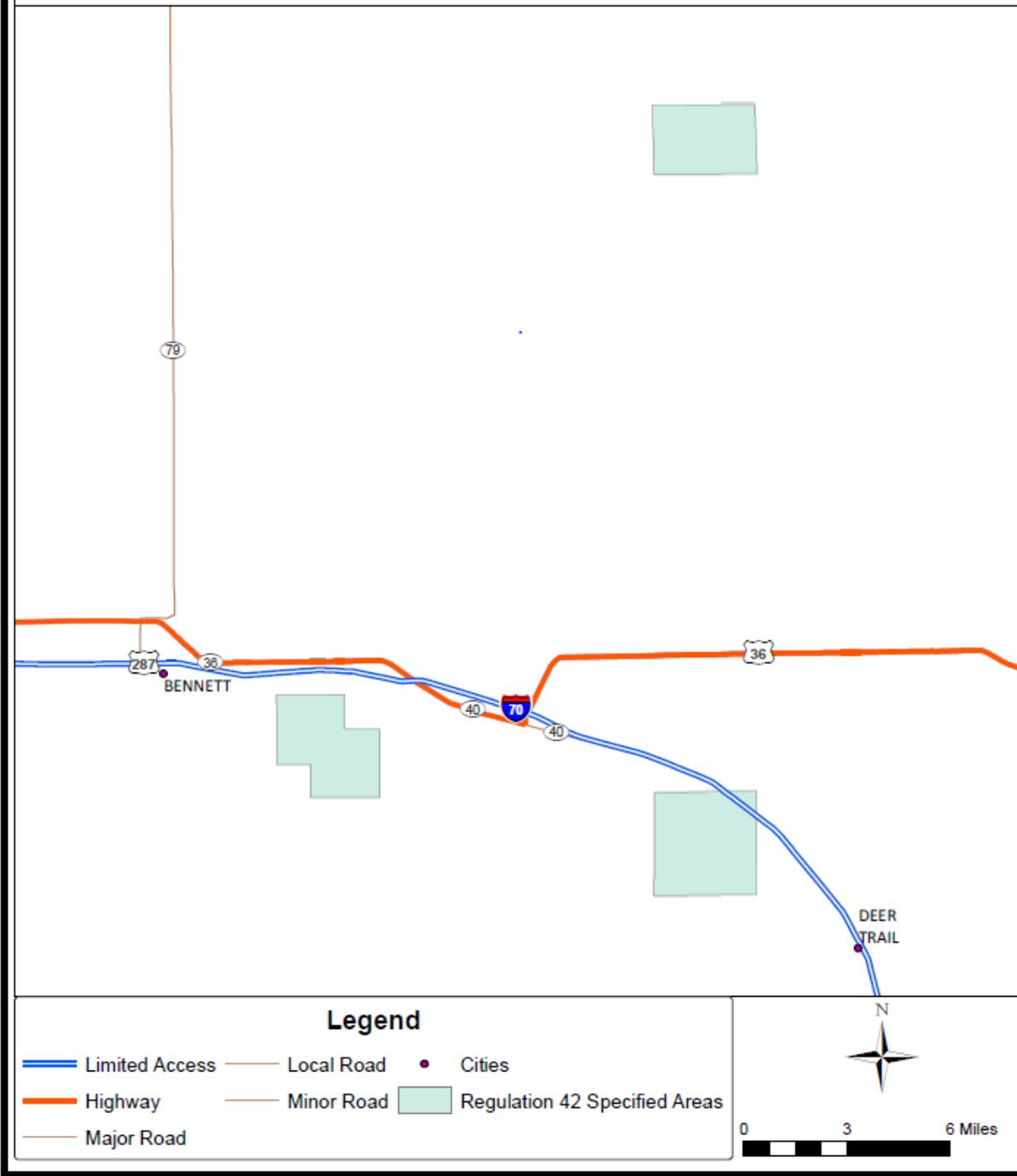
**Figure 47. Specified Area for Colorado Oil and Gas Fields, Weld County.**



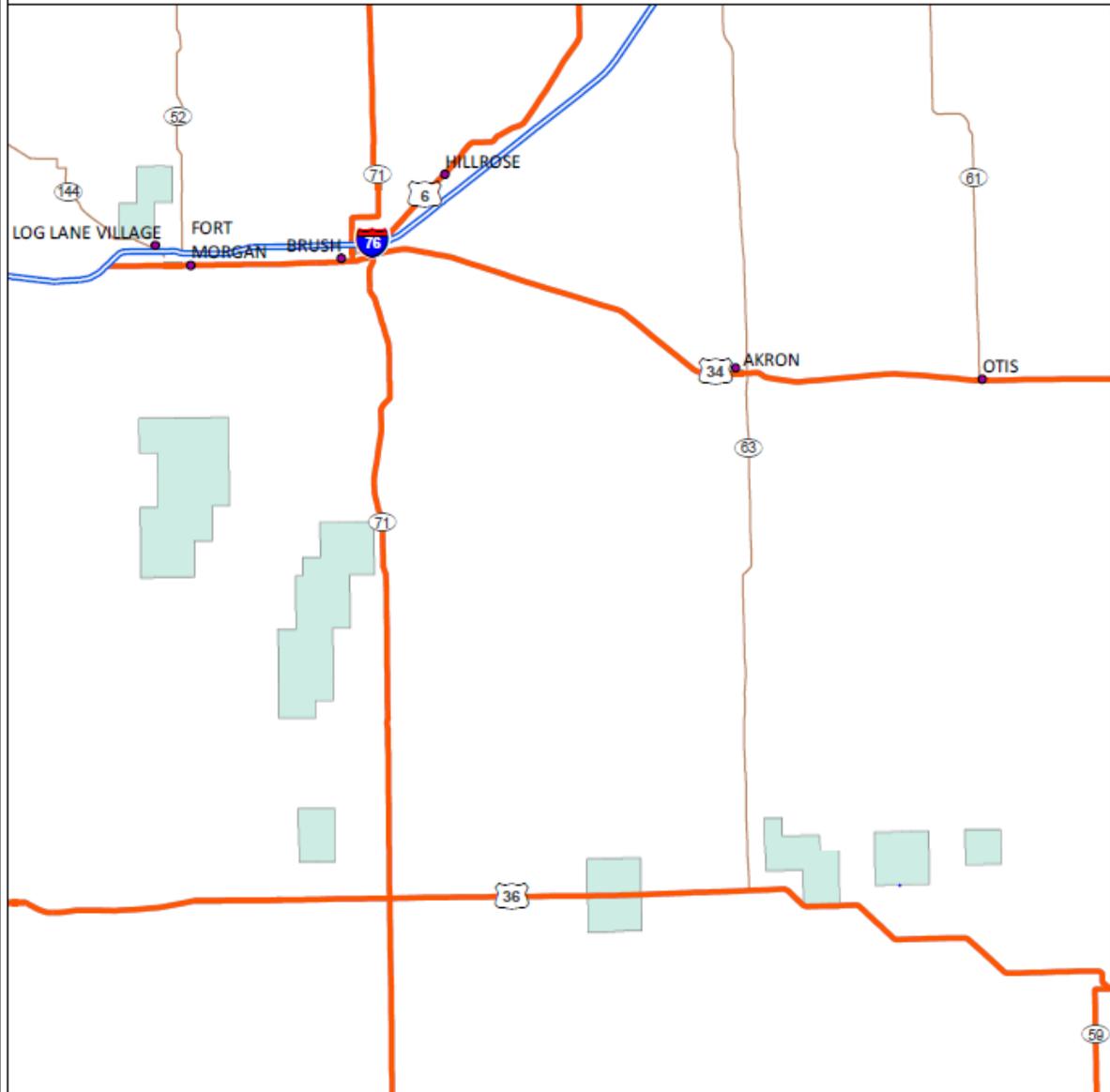
**Figure 48. Specified Area for Colorado Oil and Gas Fields, Weld County.**



**Figure 49A. Specified Area for Colorado Oil and Gas Fields, Arapahoe and Adams County.**



**Figure 49B. Specified Area for Colorado Oil and Gas Fields, Morgan and Washington County.**



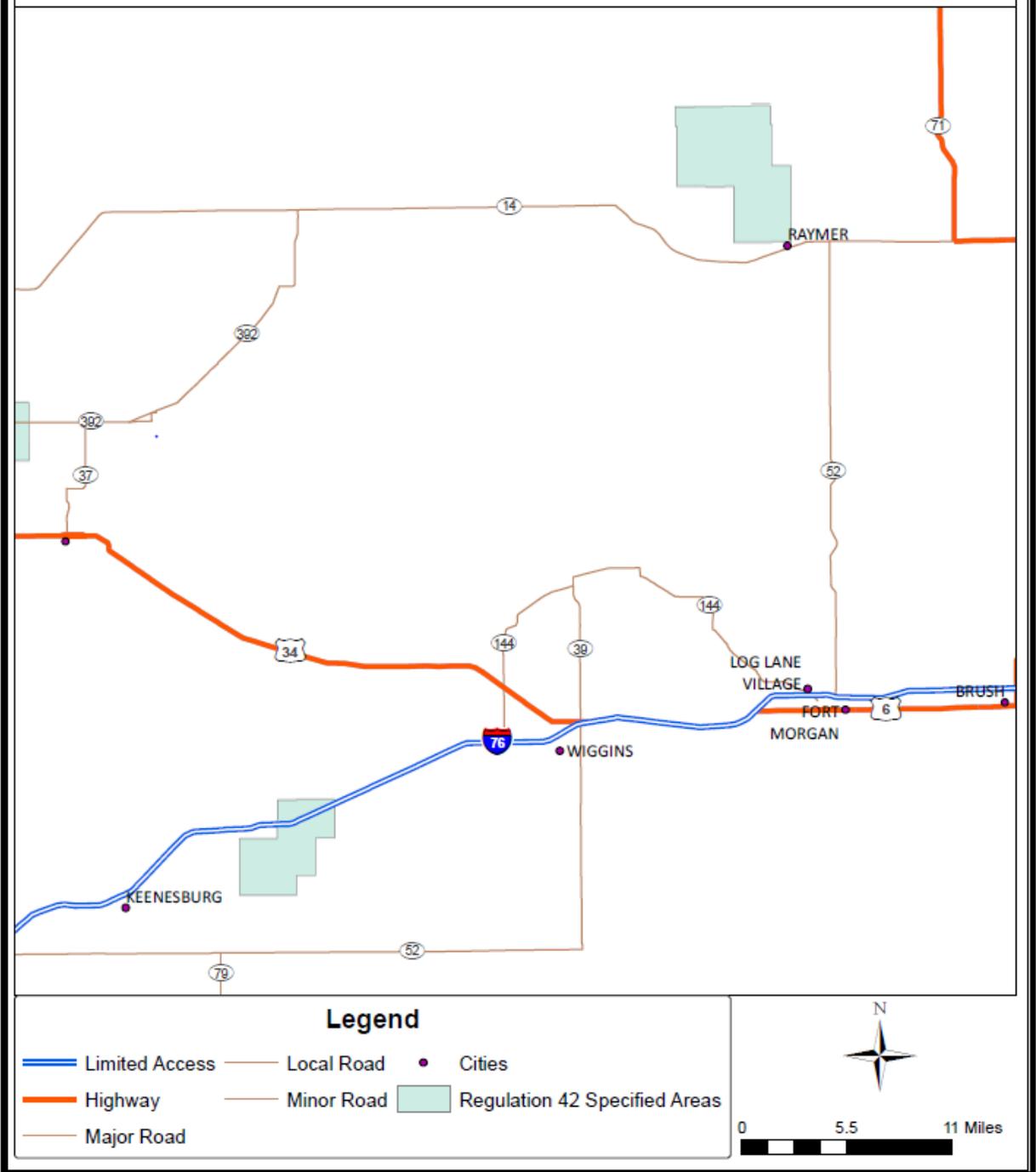
**Legend**

-  Limited Access
-  Highway
-  Major Road
-  Local Road
-  Minor Road
-  Cities
-  Regulation 42 Specified Areas

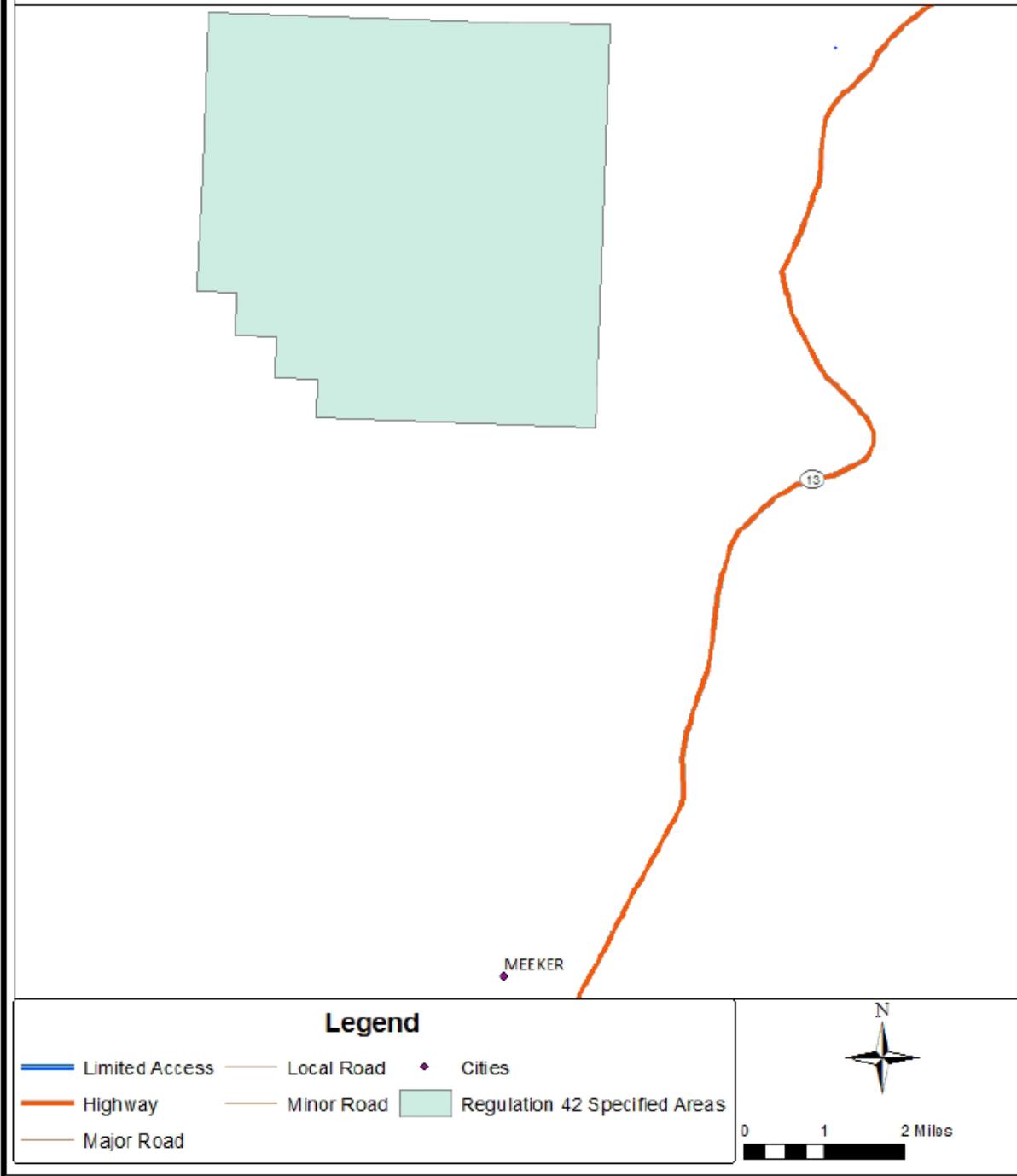


0 6.5 13 Miles

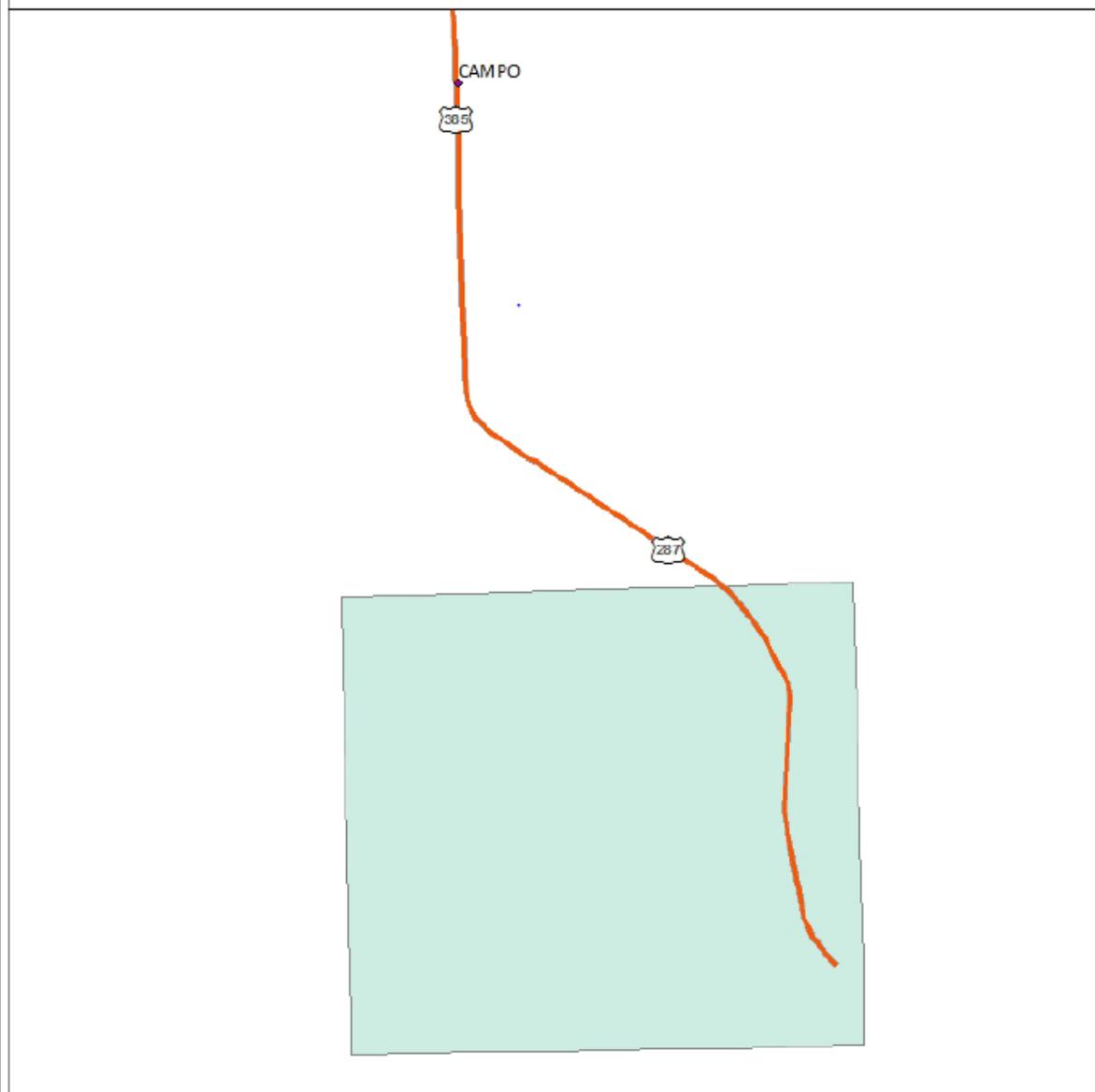
**Figure 49C. Specified Area for Colorado Oil and Gas Fields, Weld County.**



**Figure 50. Specified Area for the Wilson Creek Oil and Gas Field, Rio Blanco County, Colorado.**



**Figure 51. Specified Area for the Campo Oil and Gas Field, Baca County, Colorado.**

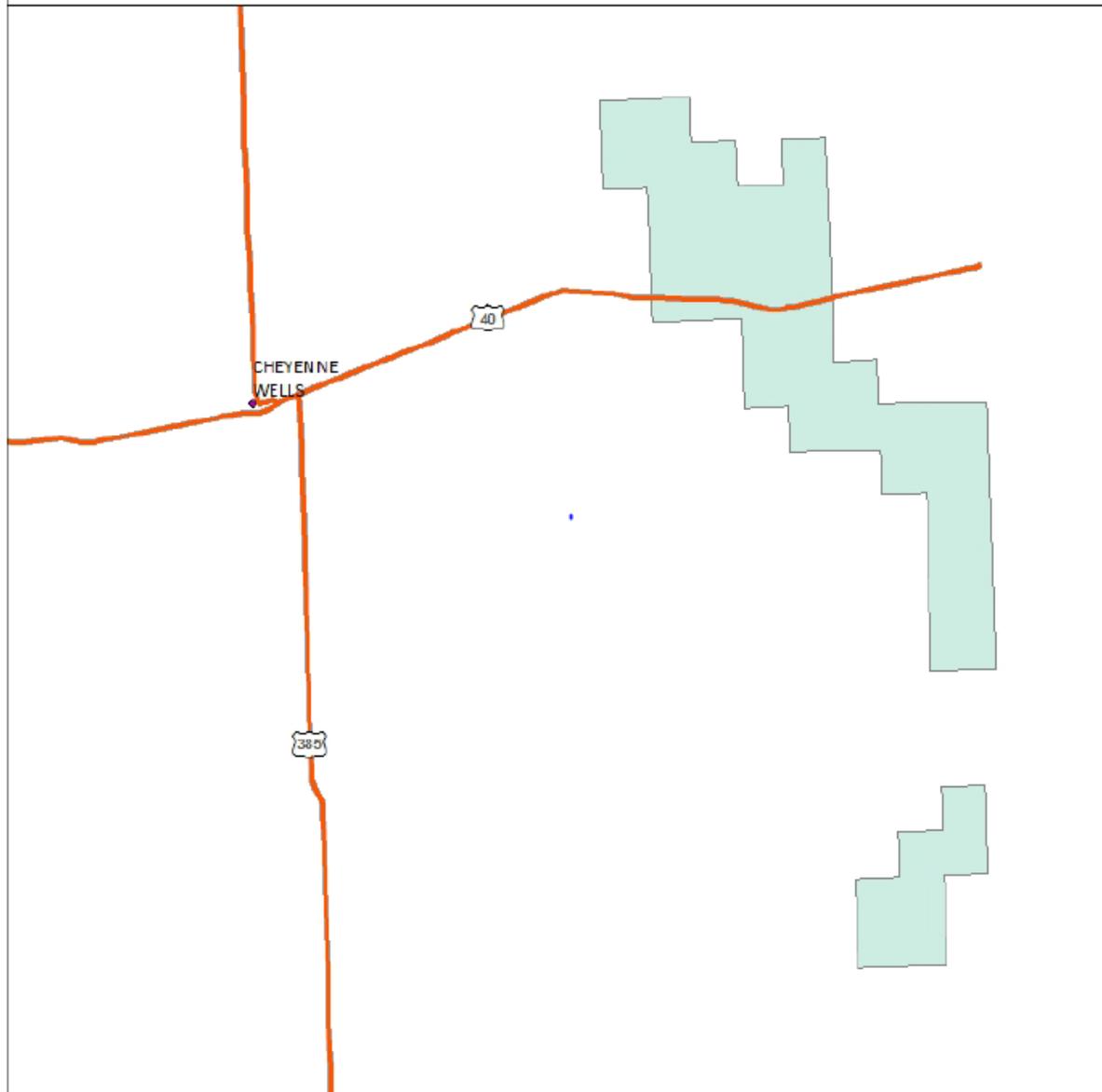


**Legend**

- |  |  |   |
|--|--|---|
|  Limited Access |  Local Road |  Cities                        |
|  Highway        |  Minor Road |  Regulation 42 Specified Areas |
|  Major Road     |  |   |



**Figure 52A. Specified Area for the Arapahoe Northwest, Arapahoe, Frontera, and Second Wind Fields Cheyenne County, Colorado.**



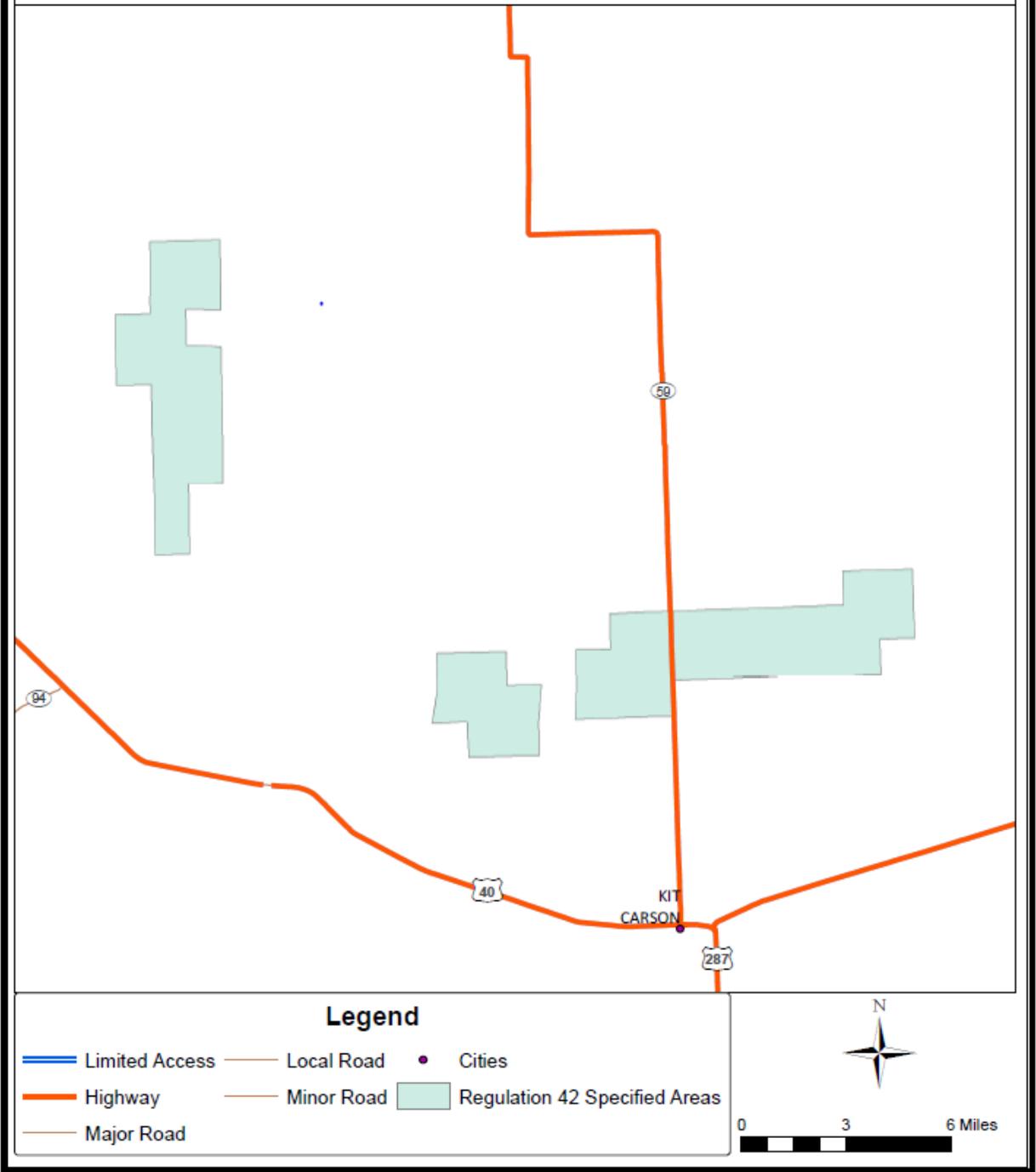
**Legend**

Limited Access	Local Road	Cities
Highway	Minor Road	Regulation 42 Specified Areas
Major Road		

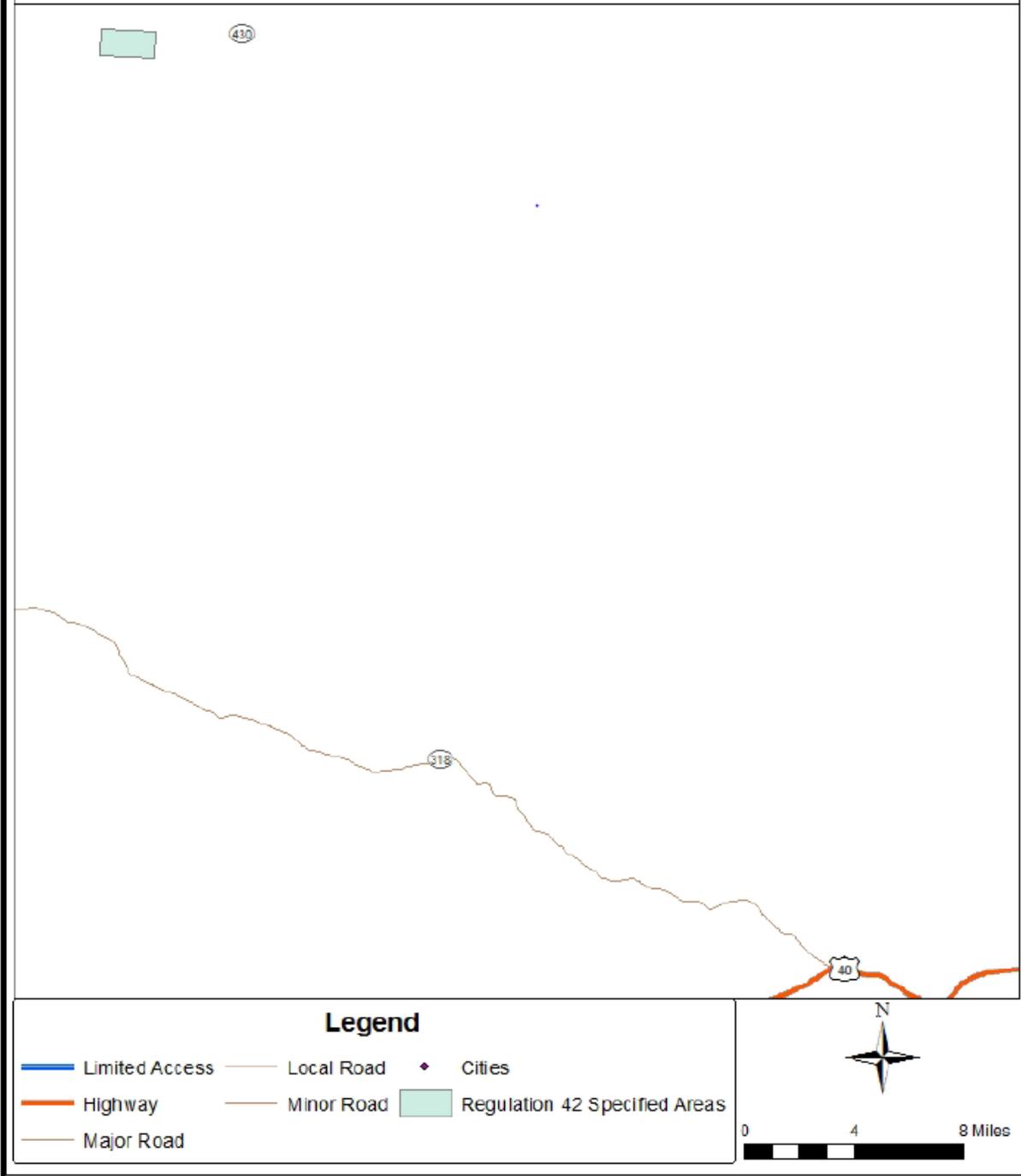
N

0 2.5 5 Miles

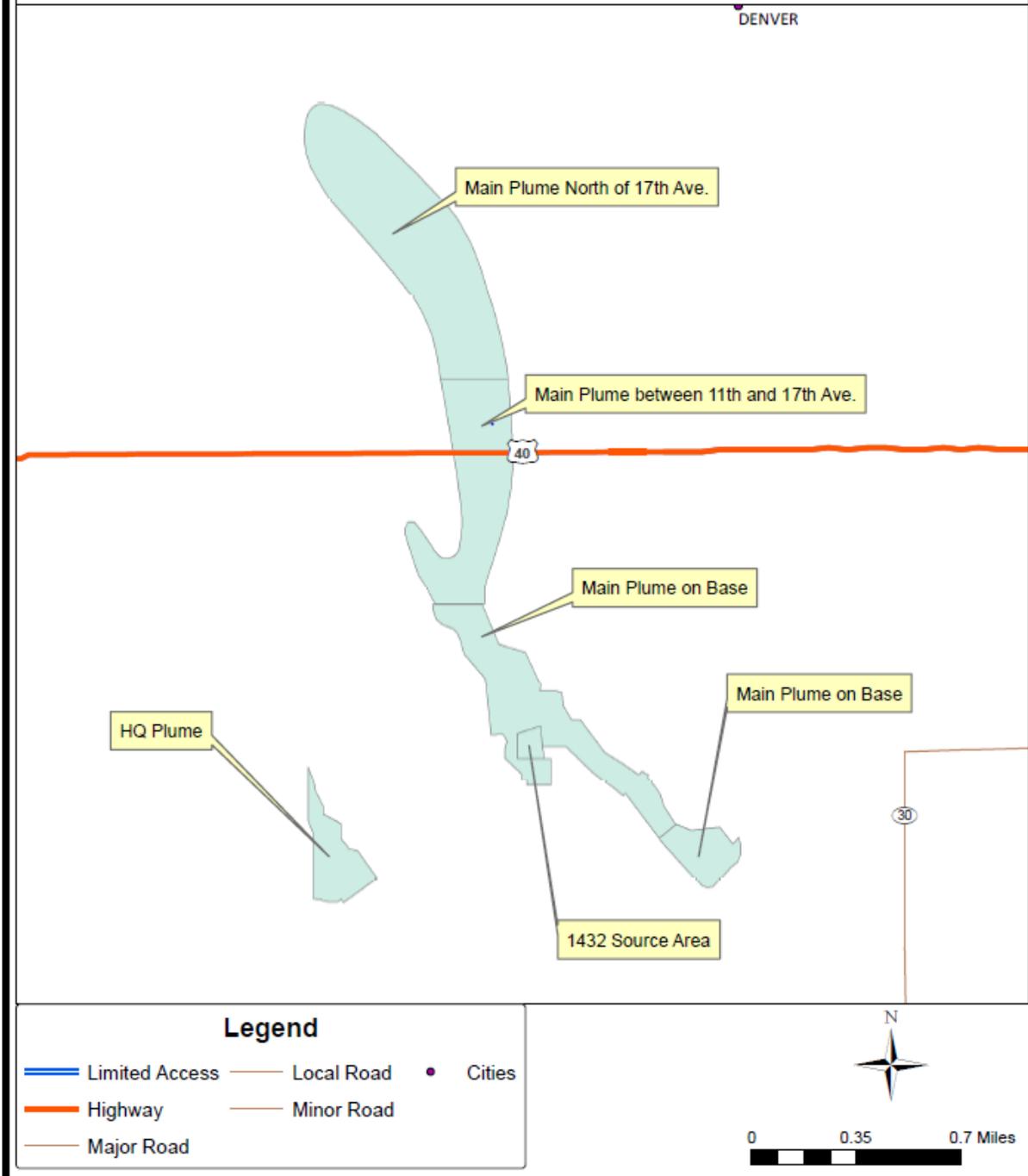
**Figure 52B. Specified Area for the Speaker, Bledsoe Ranch, Sorrento, and Mount Pearl Fields Kit Carson and Cheyenne Counties, Colorado.**



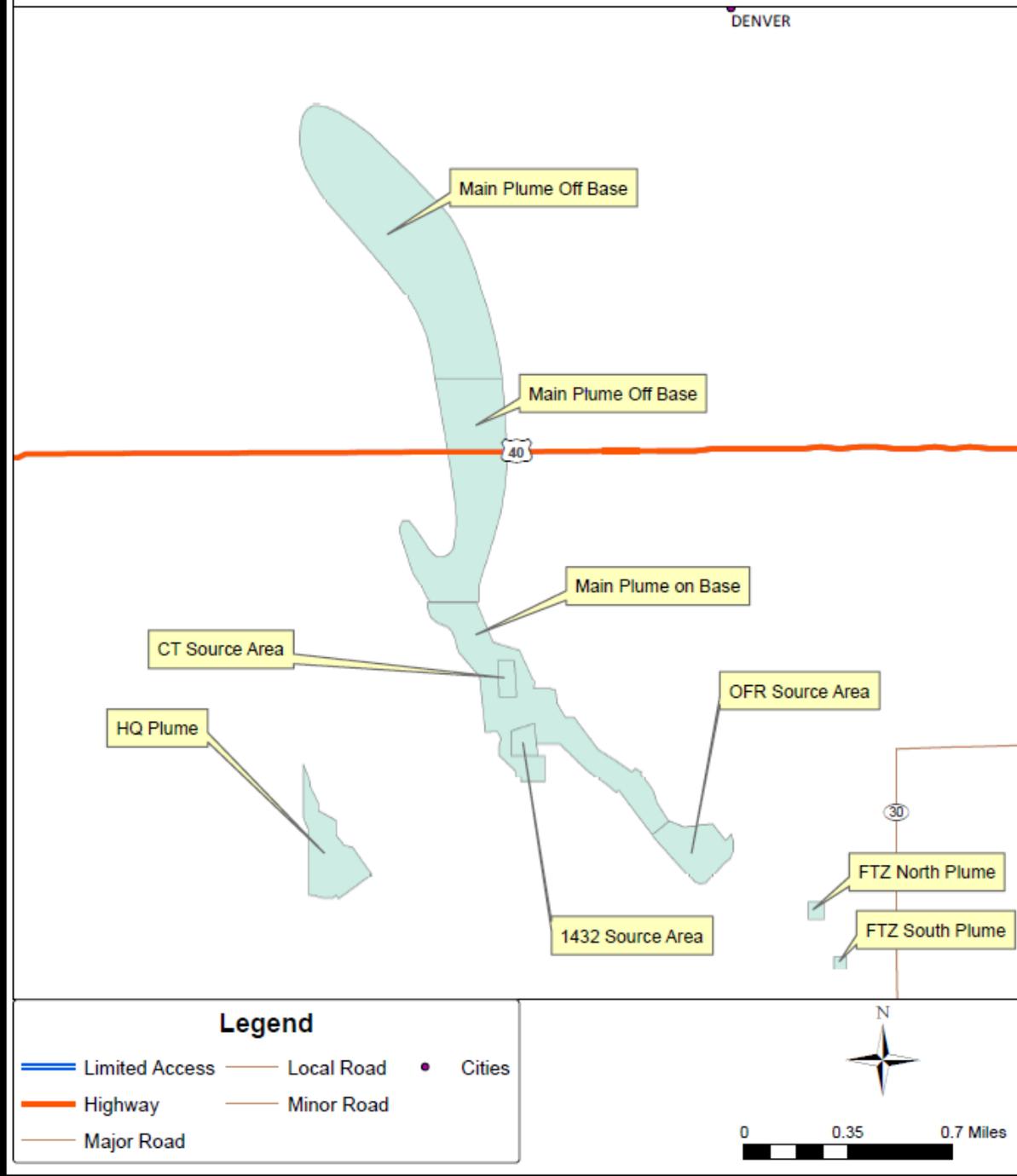
**Figure 53. Specified Area for the Hiawatha Oil and Gas Field  
Moffat County, Colorado.**



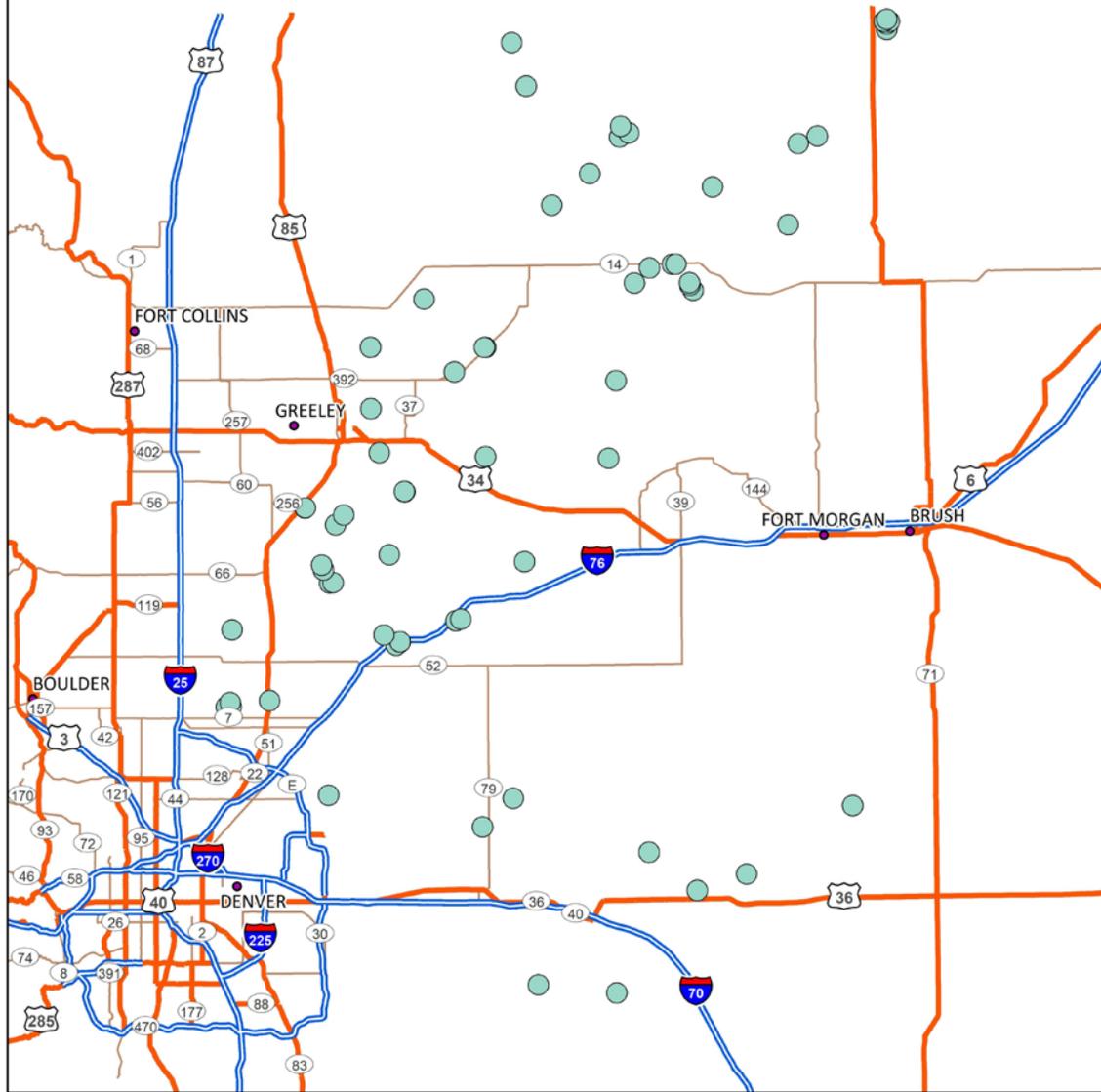
**Figure 54A. Specified Area for Lowry Alluvium Aquifers**



**Figure 54B. Specified Area for Lowry Bedrock Aquifers**



**Figure 55. Oil and Gas fields of Larimer, Weld, Boulder, Broomfield, Adams, Denver, Jefferson, and Arapahoe counties**



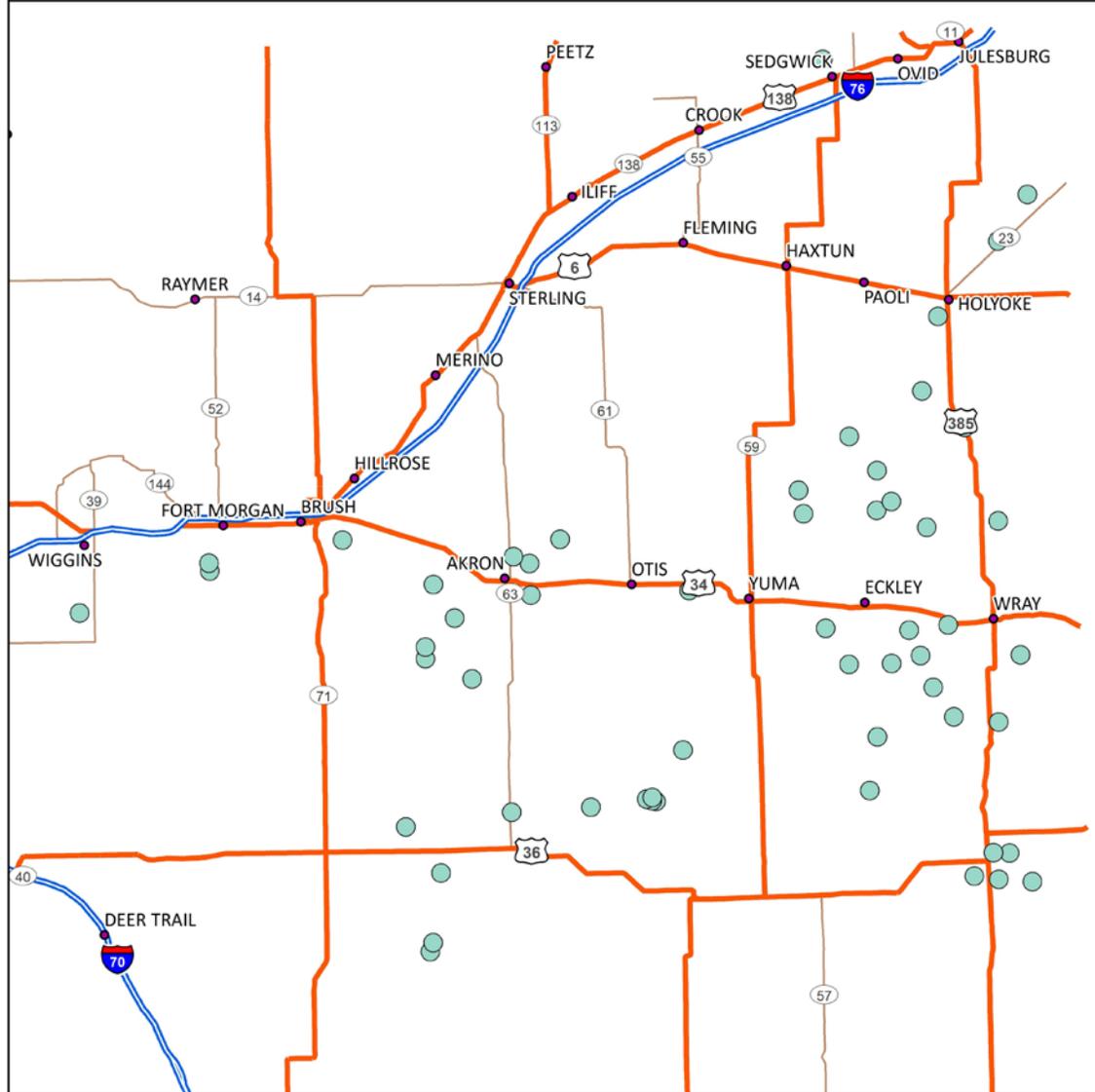
**Legend**

- Cities
- Major Road
- Limited Access
- Highway
- Local Road
- Minor Road
- Specified Area 55



0 10 20 Miles

**Figure 56. Oil and Gas fields of Morgan, Logan, Sedgwick, Phillips, Washington, and Yuma counties**



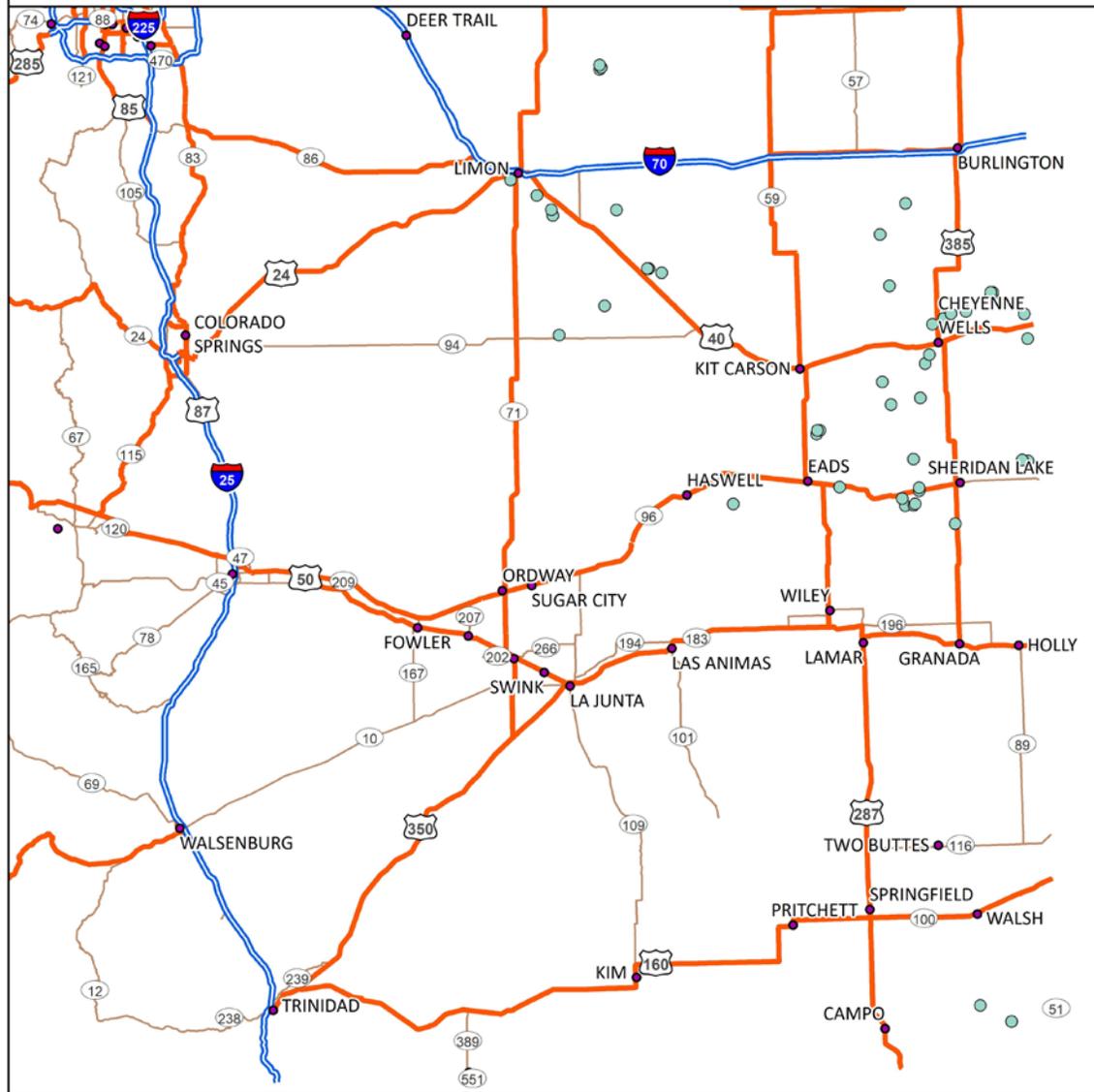
**Legend**

- Cities
- Major Road
- Limited Access
- Highway
- Local Road
- Minor Road
- Specified Area 56



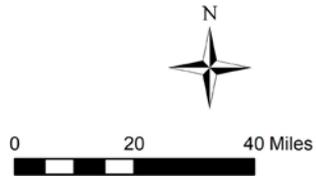
0 10 20 Miles

**Figure 57. Oil and Gas fields of Douglas, Elbert, Lincoln, Kit Carson, El Paso, Cheyenne, Pueblo, Fremont, Crowley, Kiowa, Otero, Bent, Prowers, and Baca counties**



**Legend**

- Cities
- Major Road
- Limited Access
- Highway
- Local Road
- Minor Road
- Specified Area 57



**Figure 58. Oil and Gas fields of Sauguache, Rio Grande, Alamosa, Huerfano, Costilla, and Las Animas counties**

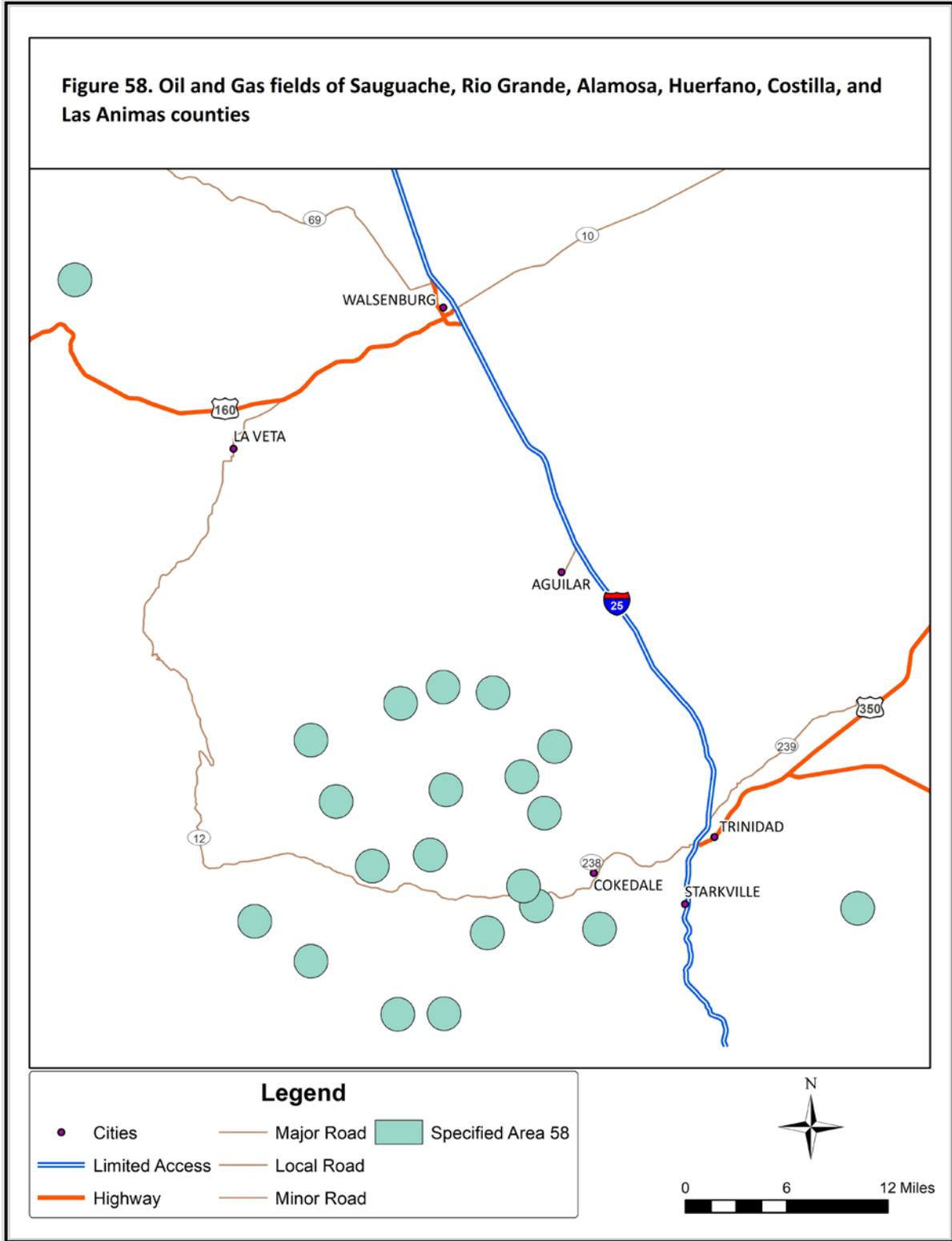
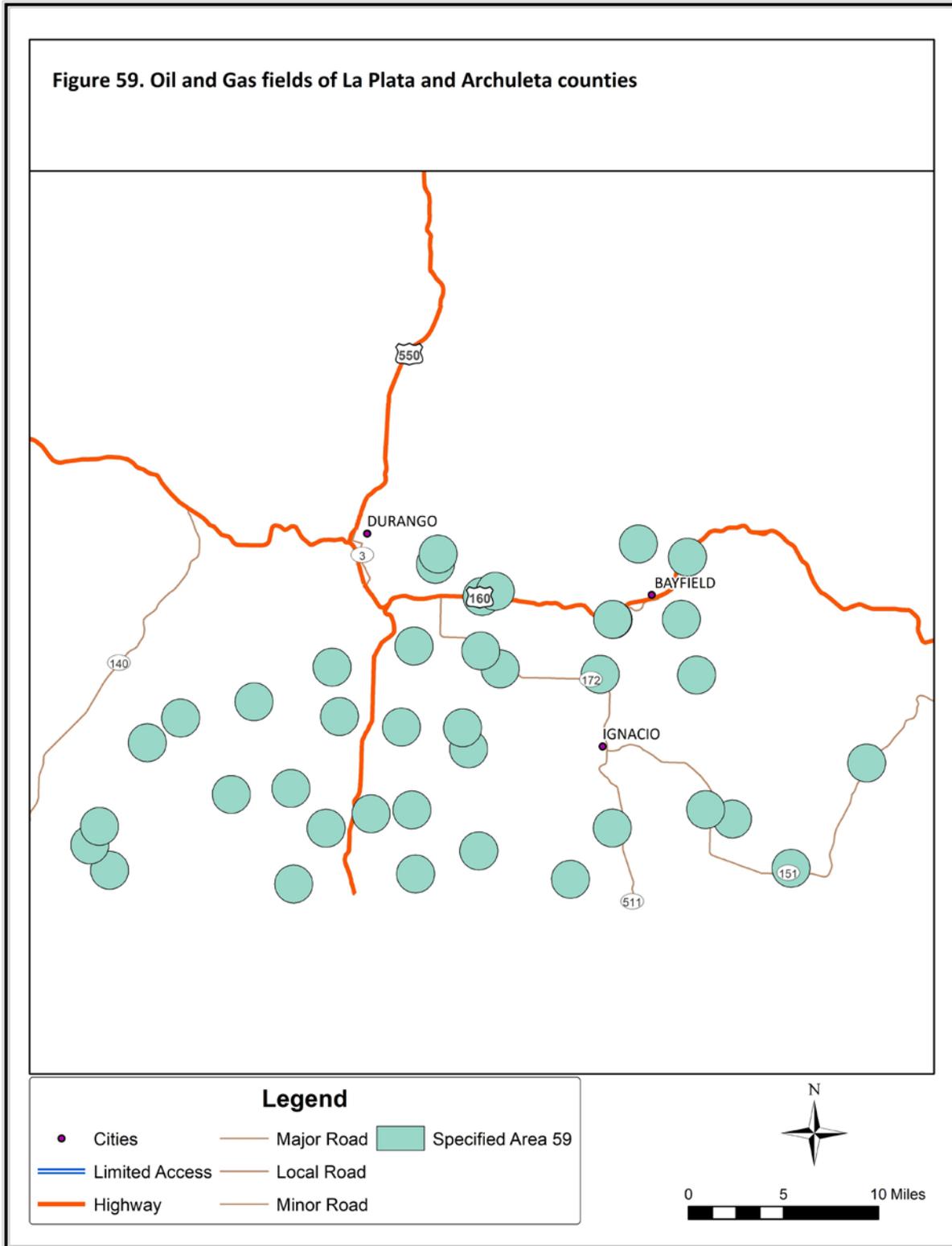
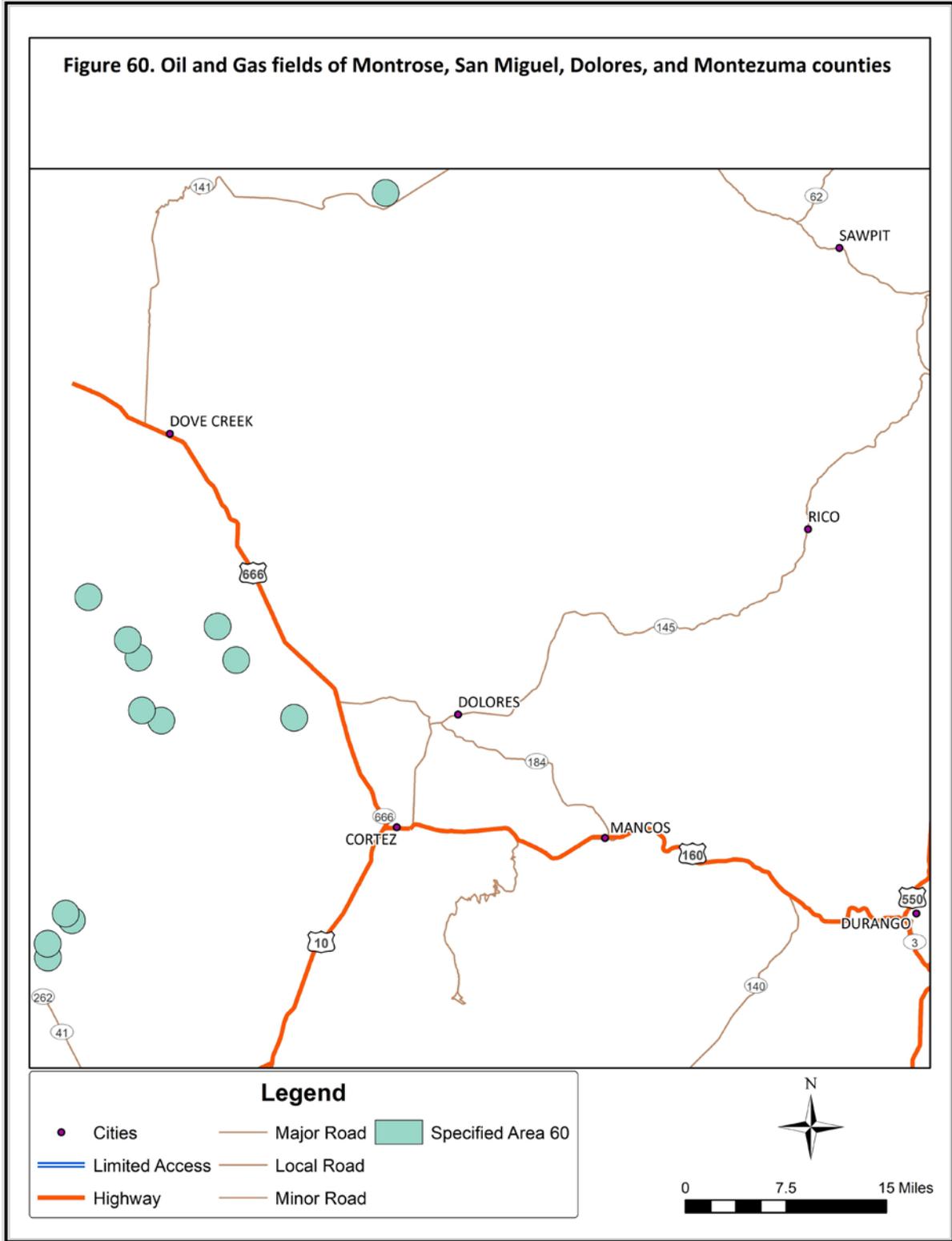


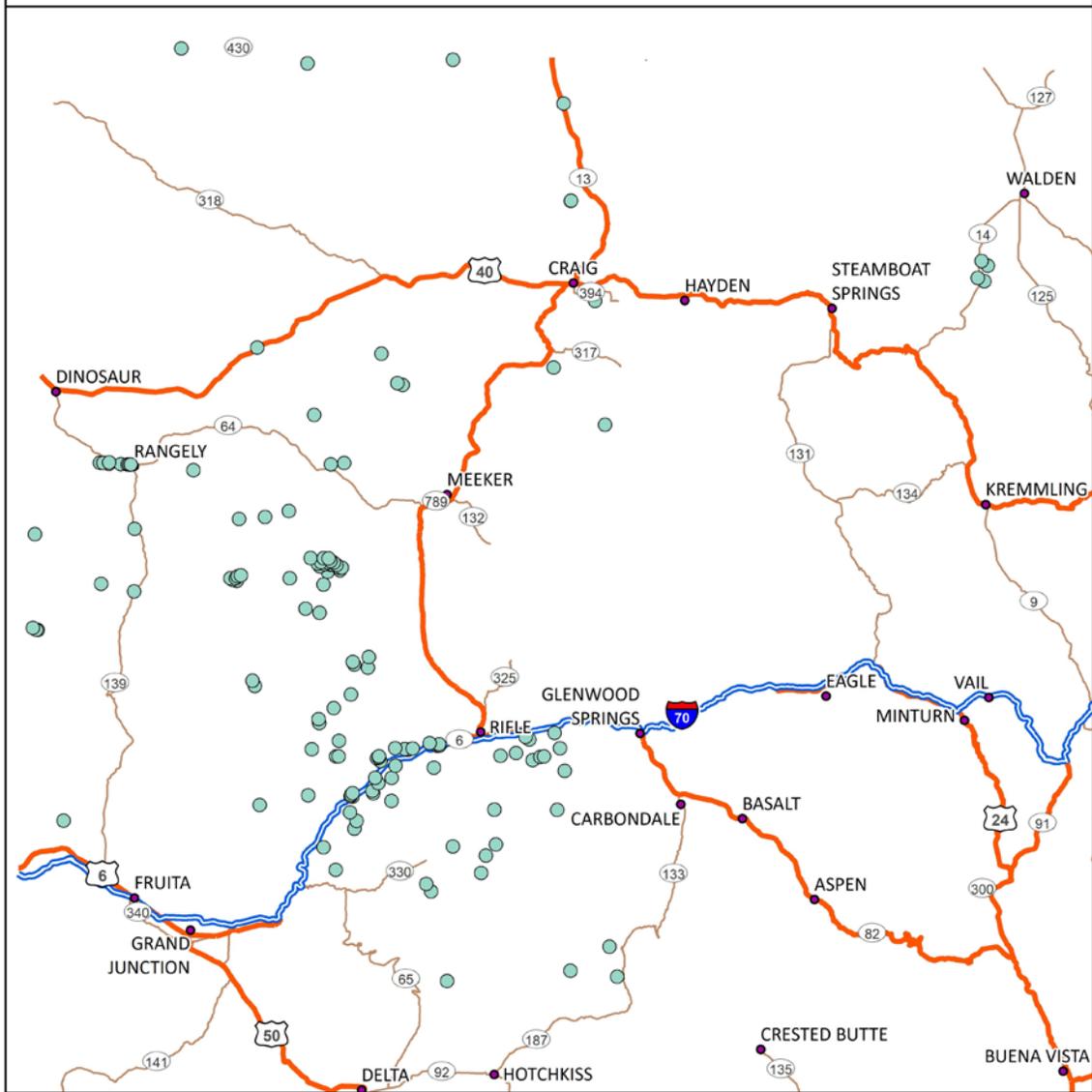
Figure 59. Oil and Gas fields of La Plata and Archuleta counties



**Figure 60. Oil and Gas fields of Montrose, San Miguel, Dolores, and Montezuma counties**



**Figure 61. Oil and Gas fields of Moffat, Routt, Jackson, Grand, Rio Blanco, Garfield, Mesa, Delta, Pitkin, and Gunnison counties**



**Legend**

● Cities	— Major Road	■ Specified Area 61
— Limited Access	— Local Road	
— Highway	— Minor Road	

N

0 20 40 Miles

## 42.9 RESERVED

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### 42.38 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: APRIL 13, 2020 RULEMAKING; FINAL ACTION MAY 11, 2020; EFFECTIVE DATE JUNE 30, 2020.

The provisions of C.R.S. sections 25-8-202; 25-8-203; 25-8-204; 25-8-402, provide the specific statutory authority for adoption of this regulation. The Commission also adopted, in compliance with section 24-4-103(4) the following statement of basis and purpose.

#### **BASIS AND PURPOSE:**

The Commission has adopted, in compliance with section 24-4-103(4) C.R.S. the following statement of basis and purpose.

#### A. Background

The commission applied the classification of limited use and quality to the groundwaters contained within oil and gas bearing formations of Colorado in which injection wells have been established under Colorado Oil and Gas Conservation Commission's (COGCC) 324(B) rules. It should be noted that groundwater in formations above those identified in the specified areas are not designated, and therefore have the interim narrative standard applied to them. The approach the commission has taken is to buffer the well locations by a mile. The commission did this in order to add a margin of protection around the maximum permitted area of these injection wells of 1/2 of a mile. Each of these new areas have specific strata that these designations apply to and are generally well below any depths used for the production of drinking water. The strata that were used in the specified areas were extracted from the COGCC well database. Each strata named in the specified area has at least one well permitted for it as identified by COGCC. The latitude and longitude of each well was used to define the centroid on multiple smaller polygons. Because Specified Areas 55-61 cover multiple counties, the commission used this approach instead of large polygons in order to minimize the area located in specified areas with limited standards. By placing the latitude and longitude into the description of the specified area, the regulation will be easier to update as new injection wells come online in the appropriate specified area. The vast majority of this produced water is placed back into the formations from which it comes by injection into wells.

Hydrogeologic information including produced water quality, depths of these formations, and COGCC data indicate that the groundwater in these formation is of limited use and quality. Regulation 41.4(B)(5)(a) states that when the groundwater within the area has TDS equal to or greater than 10,000 mg/L TDS or (b) when the groundwater has been exempted under Rule 324(B) of COGCC, that shall be classified as "Limited Use and Quality". All of the injection wells within Specified Areas 55-61 meet the criteria of either 41.4(B)(5)(a) or 41.4(B)(5)(b). The commission, therefore, concluded that the application of the "Limited Use and Quality" classification to the groundwater within these specified areas is appropriate. This classification and the application of site-specific standards for organic chemicals ensures consistency between implementation of Underground Injection Control (UIC) Program requirements and WQCC Standards and Classification.

## B. Site-Specific Classification and Standards Setting

Site-specific classification of groundwater begins with the identification of the use of the water. The groundwater in these oil and gas basins is co-produced with oil and gas and is considered a waste. It is not currently used nor can it be reasonably expected to be used in the future for domestic or agricultural purposes. It is not in communication with any surface water bodies within the specified area so that water quality standards of any classified surface water bodies are not affected by this groundwater.

COGCC permits injection wells under one of two frameworks which are guided by total dissolved solids (TDS) concentrations. COGCC Rule 324(B) governs wells that are completed in formations that have TDS concentrations between 3,000 mg/L and 10,000 mg/L. These wells go through an aquifer exemption process which involves consultation between the division and COGCC in order to approve these wells. The other framework is for wells that have a TDS concentration greater than 10,000 mg/L. These wells are approved under the EPA UIC rules delegated to COGCC and do not require consultation with WQCD (40 CFR § 144.16 and COGCC Rule 325). Groundwater that has TDS greater than 10,000 mg/L fall outside of the EPA definition of Underground Source of Drinking Water (USDW)(40 CFR § 144.3).

Consistent with the classification, the groundwater quality standards in Tables 1 through 4 of the Basic Standards for Groundwater, Regulation No. 41 and the statewide standards for certain specified organic chemicals associated with oil and gas production activities will not apply within the specified area. However, to provide some protection of the potential future use of water resources in the specified area, the Commission's action provides that the statewide standard for radionuclides, as well as the statewide organic chemical standards, other than those for benzene, toluene, ethylbenzene, xylenes, and benzo(a) pyrene, will continue to apply to this groundwater.

## C. Change of Ground Water to Groundwater

The commission adopted a change from we "ground water" to "groundwater". This change is consistent with common technical usage and usage in the Water Quality Control Act. This change is part of a broad initiative to change the spelling program-wide, and to increase consistency.

PARTIES TO THE RULEMAKING HEARING April, 2020

1. XXX
2. XXX
3. XXX