
Final Environmental Impact Statement
Thacker Pass Lithium Mine Project

Appendix A

Figures

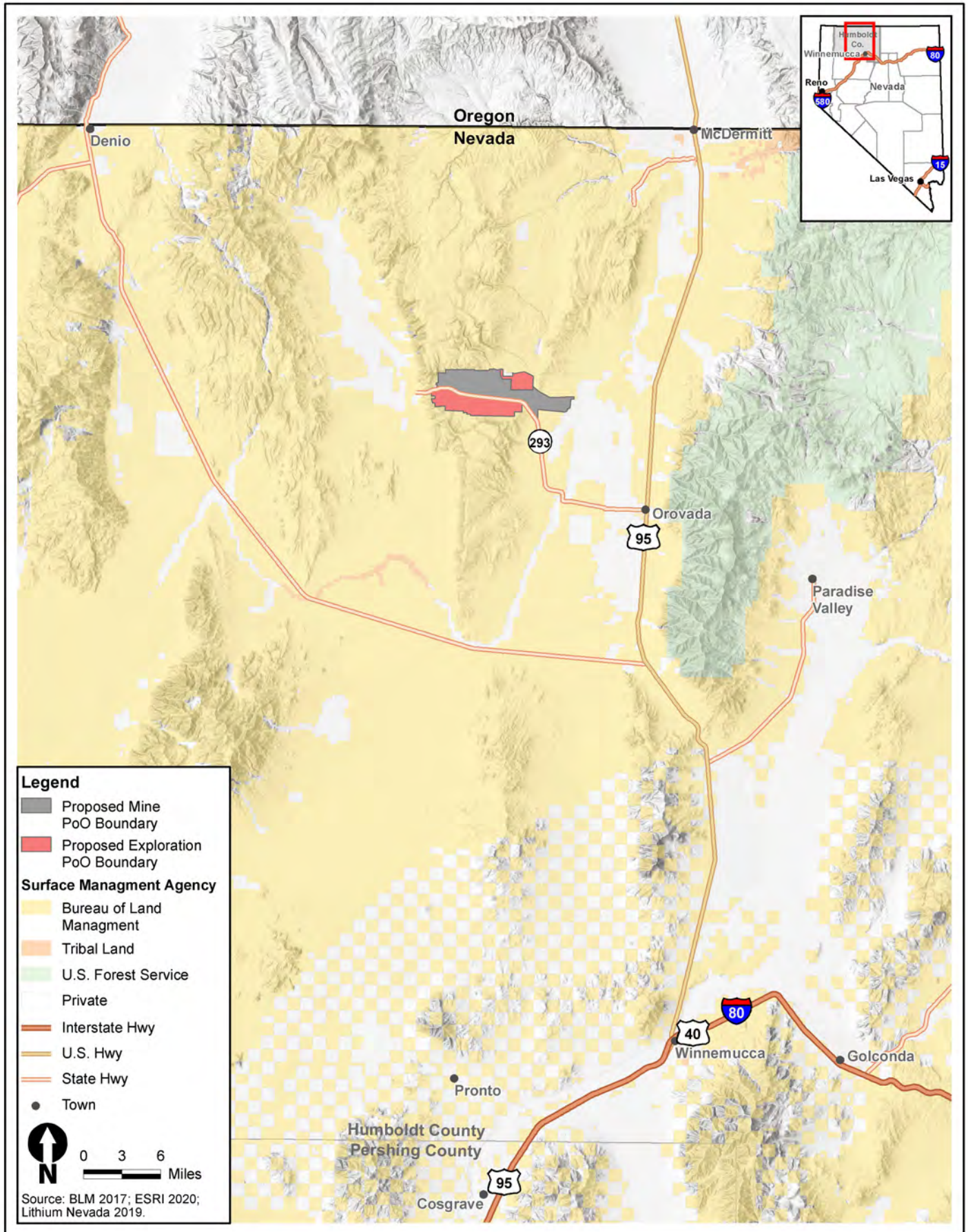
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APPENDIX A. FIGURES

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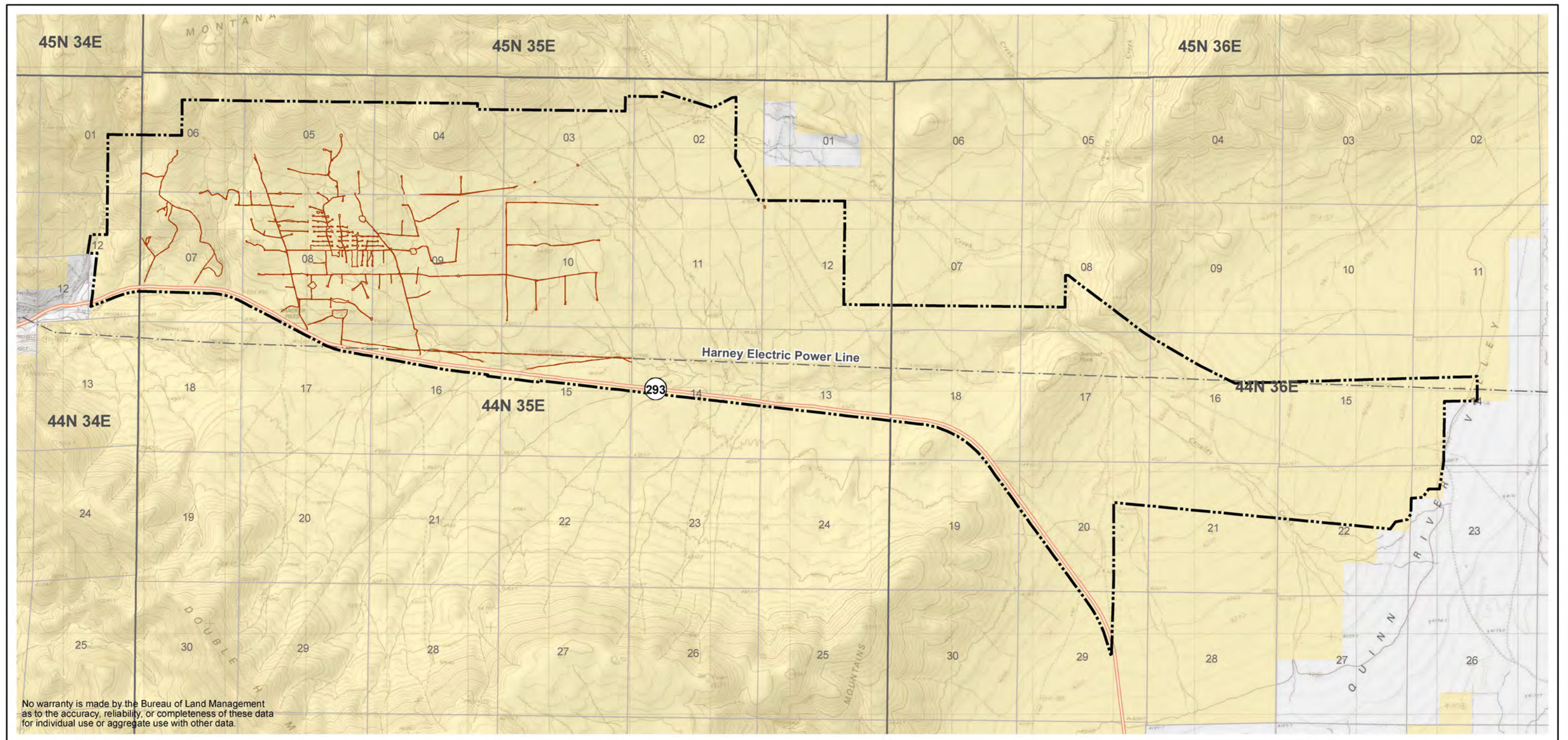
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Figure 1-1
Project Location



Legend

- | | | |
|----------------------|----------------------------------|----------|
| PoO Boundary | Surface Management Agency | Township |
| Existing Disturbance | Bureau of Land Management | Section |
| Existing Powerline | Private | |
| State Highway | | |

Source: Lithium Nevada 2019; Nat'l Geographic 2013.



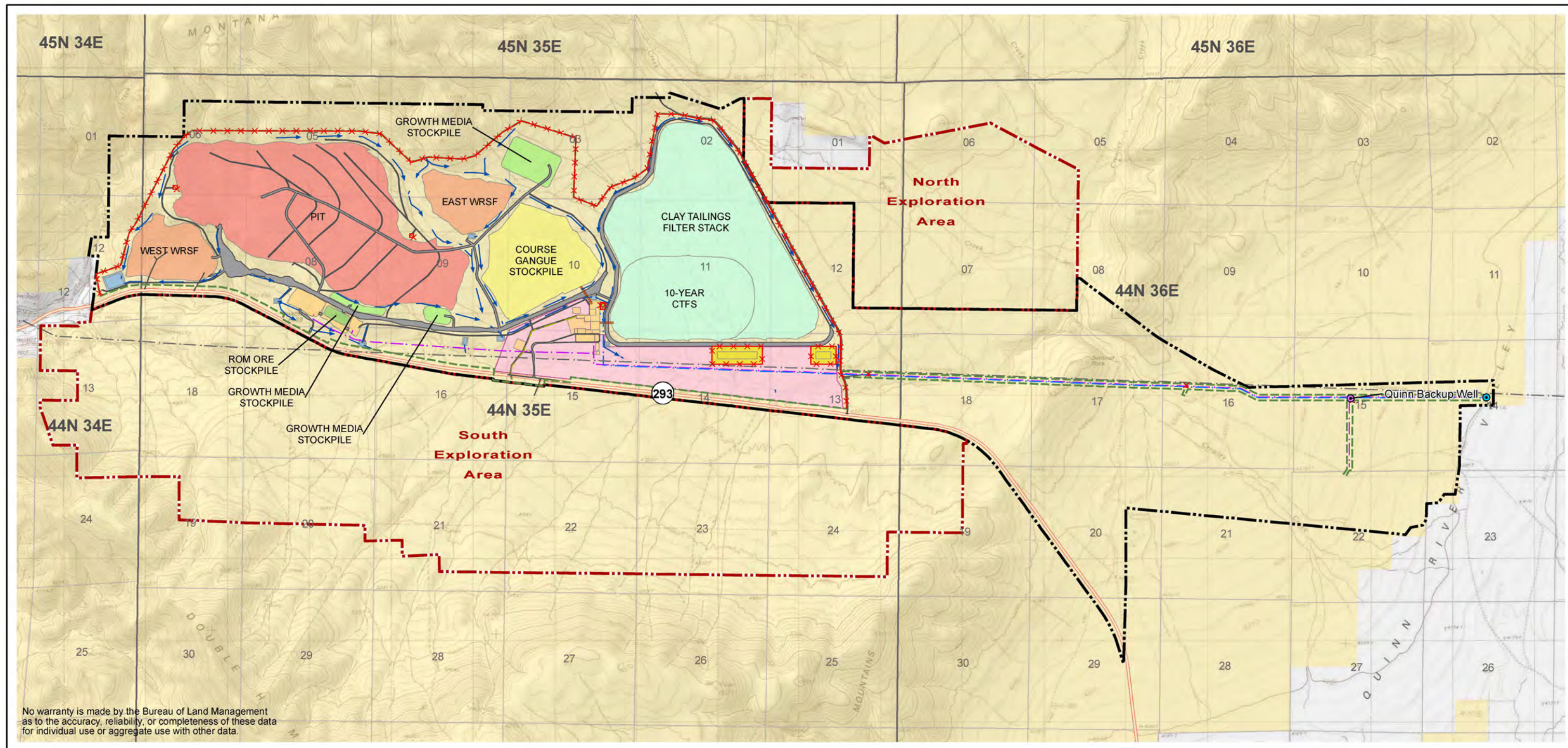
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Figure 2-1
Existing Disturbance within the Proposed Project Area



Legend

- | | | | | |
|-----------------------------|------------------------------|----------------------------|---------------------------------|----------------------------------|
| PoO Boundary | Existing Power Line | Roads | Run of Mine (ROM) Ore Stockpile | Township |
| Exploration Area | Power Line | Clay Tailings Filter Stack | Waste Rock Storage Facility | Section |
| Disturbance Area Boundary | Water Line | Course Gangue Stockpile | Emergency Pond | Surface Management Agency |
| Future Plant Expansion Area | Fiber Optic Line | Growth Media Stockpile | Reclaim Pond | Bureau of Land Management |
| Existing Water Well | Fence | Mine Facilities | Sediment Pond | Private |
| Proposed Water Well | Culvert | Pit | | |
| State Highway | Stormwater Diversion Channel | | | |
| | Conveyor Corridor | | | |

Source: Lithium Nevada 2020; Nat'l Geographic 2013.



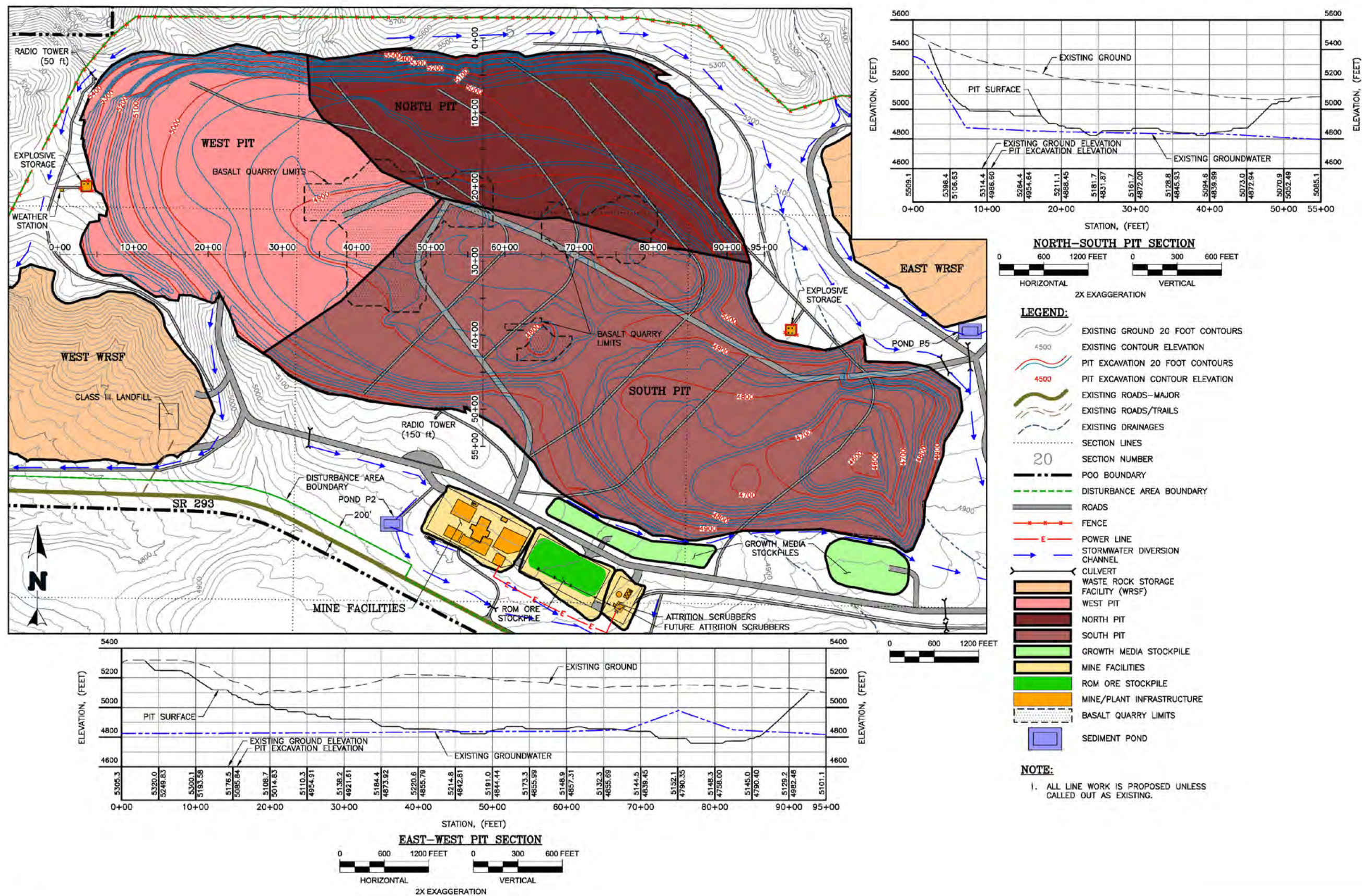
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Figure 2-2
Proposed Action Mine Facilities



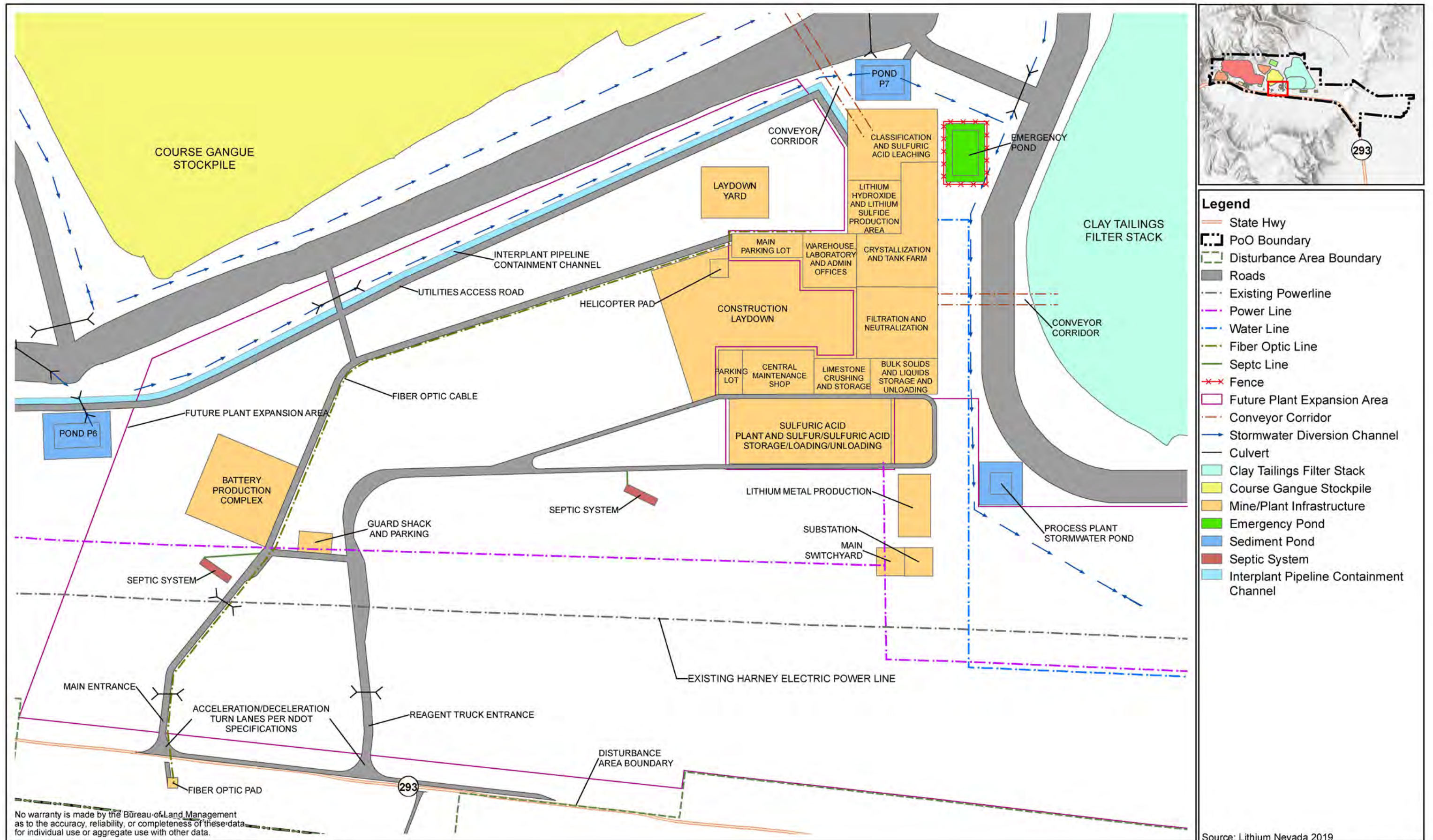
Source: Lithium Nevada 2019



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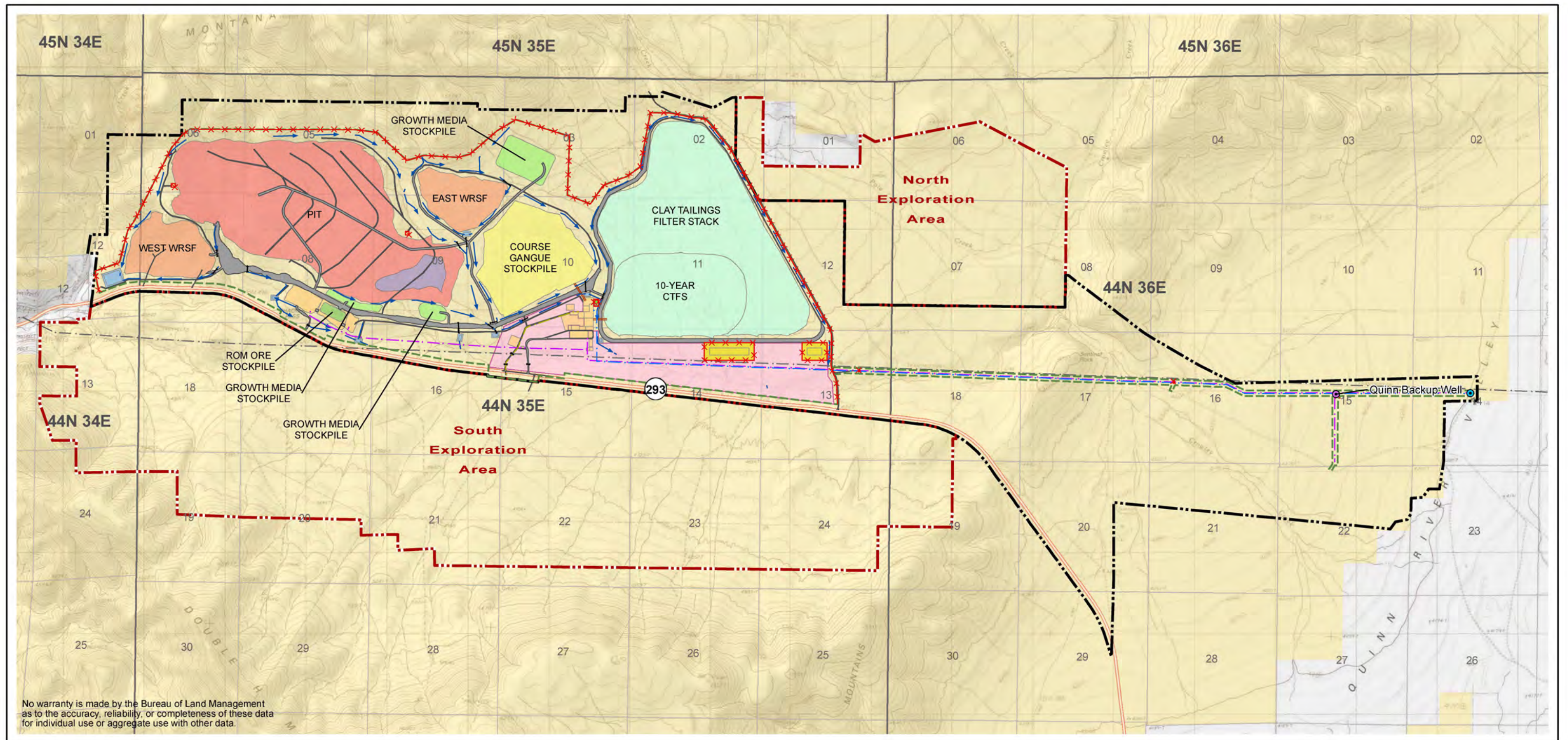
Figure 2-3
Proposed Open Pit Cross Sections



0 500 1,000 Feet
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Figure 2-4
Proposed Plant Site Layout



Legend

- | | | | | |
|-----------------------------|------------------------------|----------------------------|---------------------------------|----------------------------------|
| PoO Boundary | Existing Power Line | Roads | Run of Mine (ROM) Ore Stockpile | Township |
| Exploration Area | Power Line | Clay Tailings Filter Stack | Waste Rock Storage Facility | Section |
| Disturbance Area Boundary | Water Line | Course Gangue Stockpile | Emergency Pond | Surface Management Agency |
| Future Plant Expansion Area | Fiber Optic Line | Growth Media Stockpile | Reclaim Pond | Bureau of Land Management |
| Existing Water Well | Fence | Mine Facilities | Sediment Pond | Private |
| Proposed Water Well | Culvert | Pit | Intermittent Seasonal Pond | |
| State Highway | Stormwater Diversion Channel | | | |
| | Conveyor Corridor | | | |

Source: Lithium Nevada 2019; Nat'l Geographic 2013.



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Figure 2-5
Alternative B (Partial Backfill) Mine Facilities

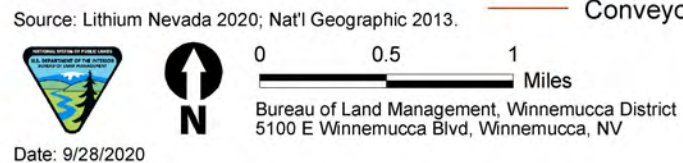
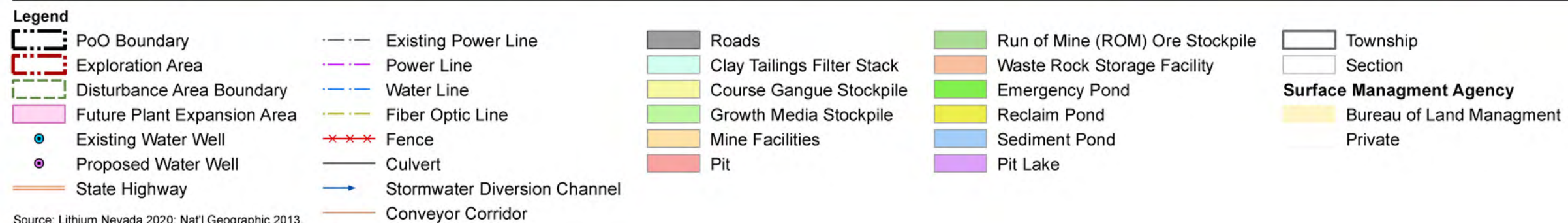
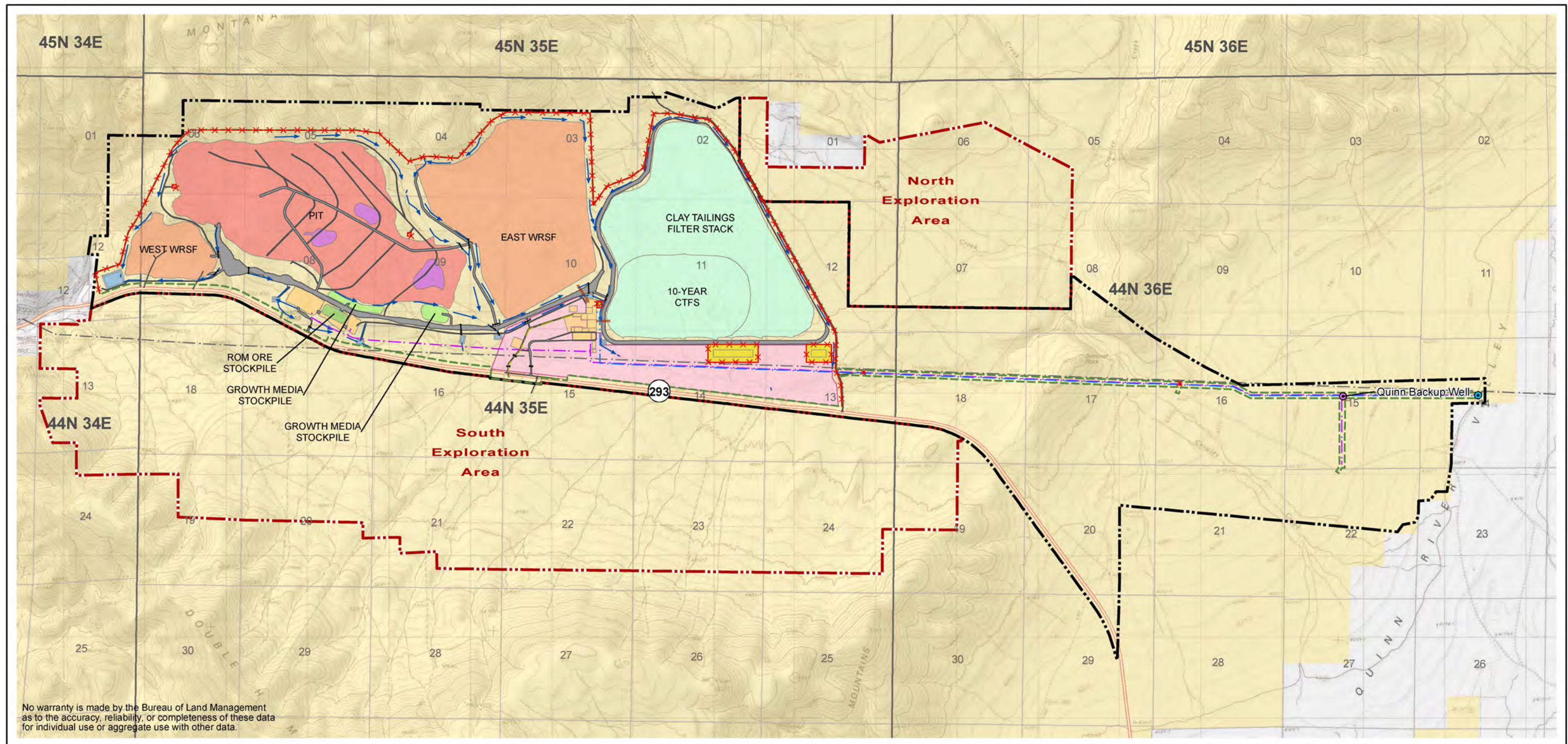
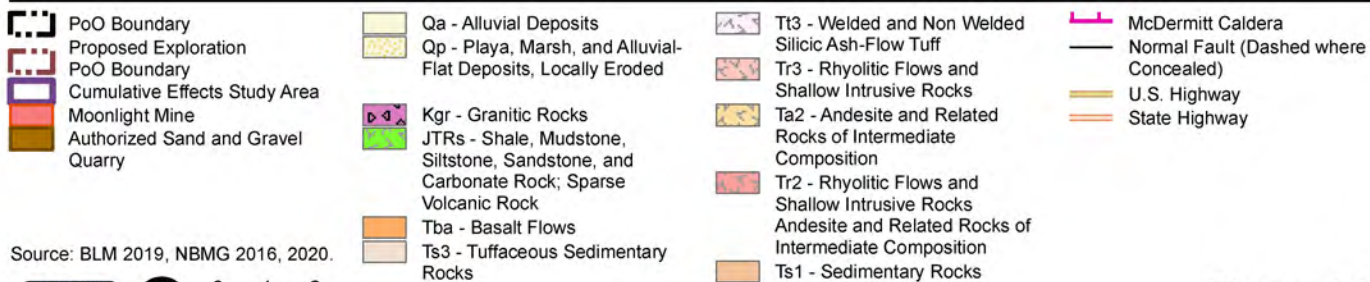
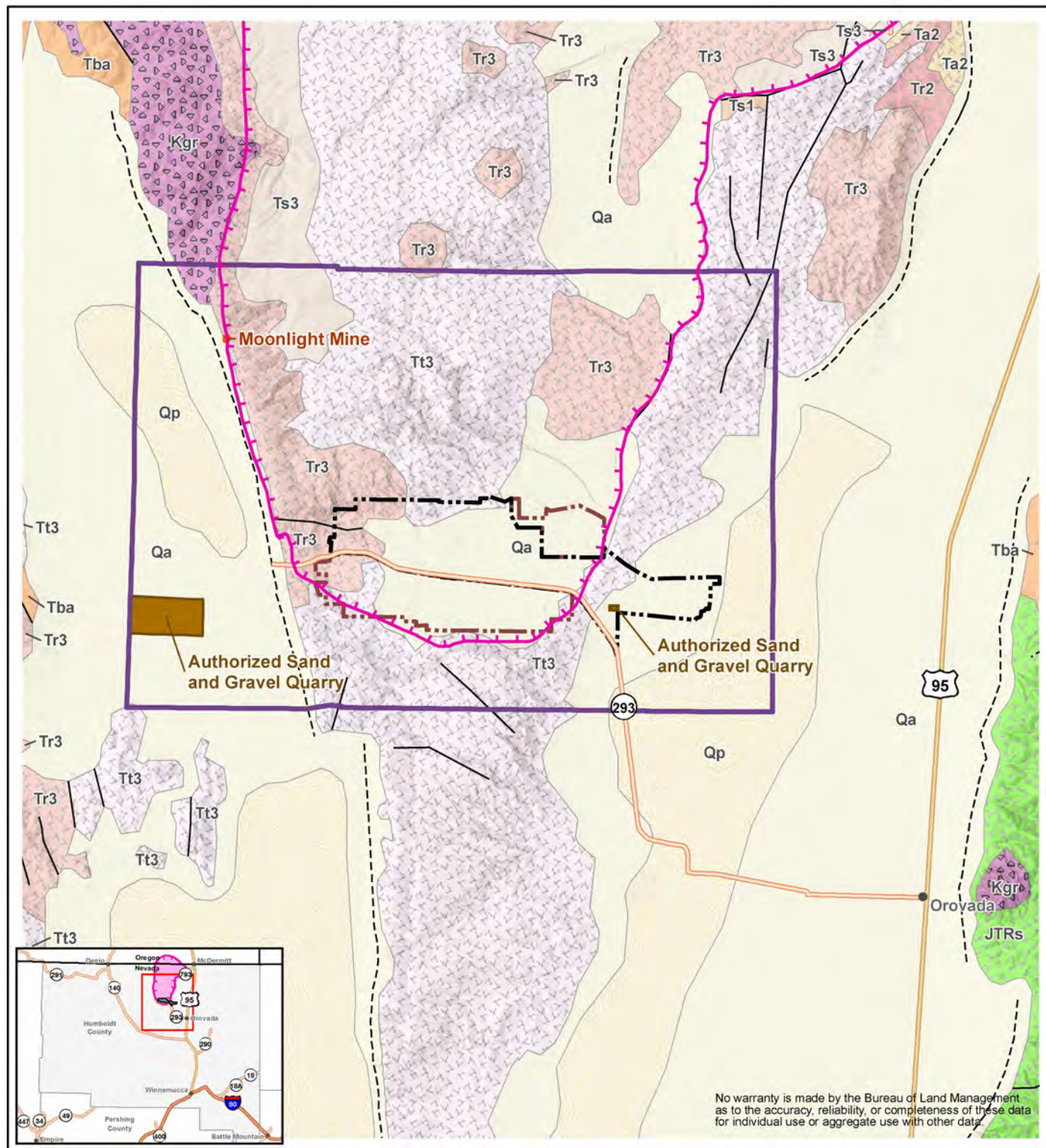


Figure 2-6
Alternative C (No Backfill) Mine Facilities



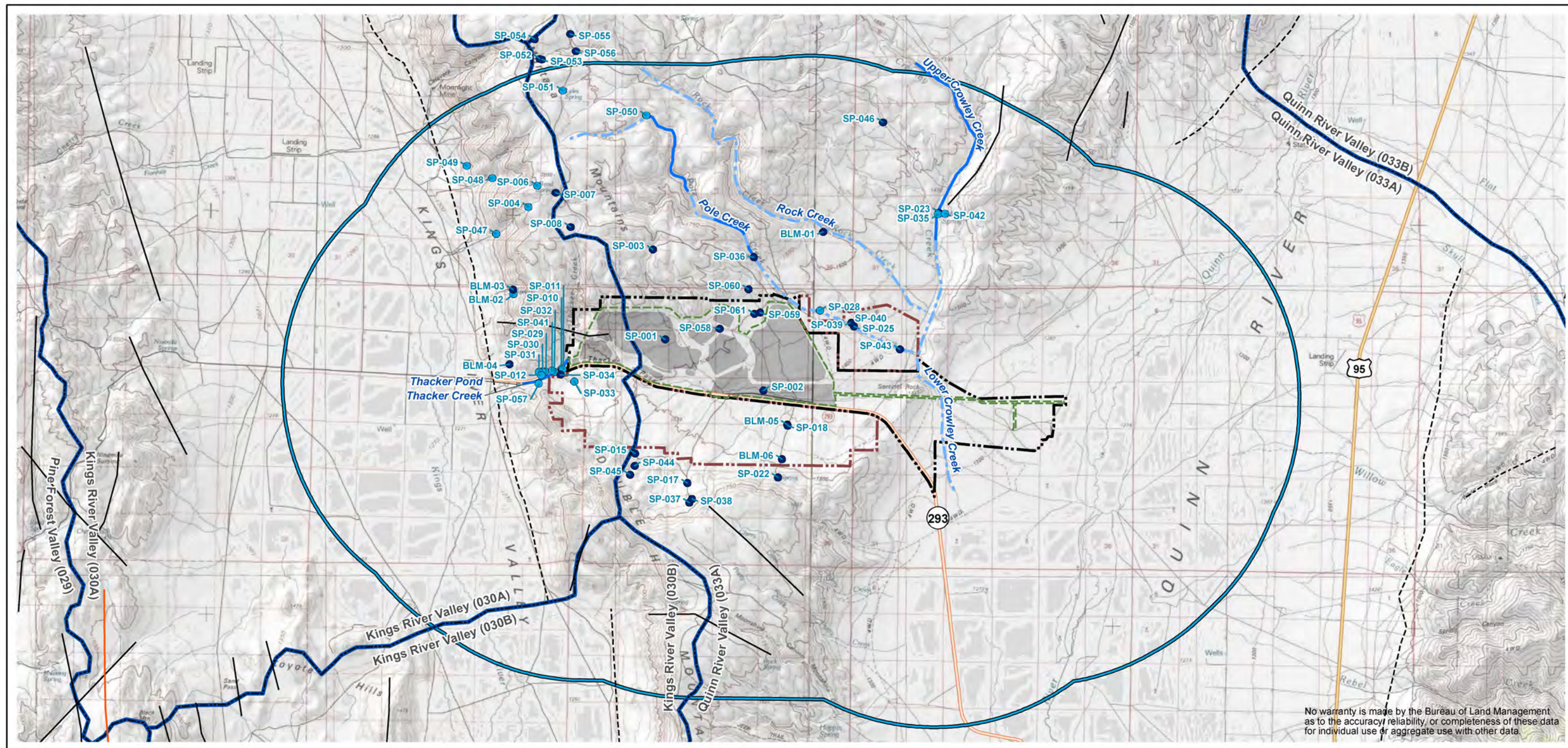
Source: BLM 2019, NBMG 2016, 2020.



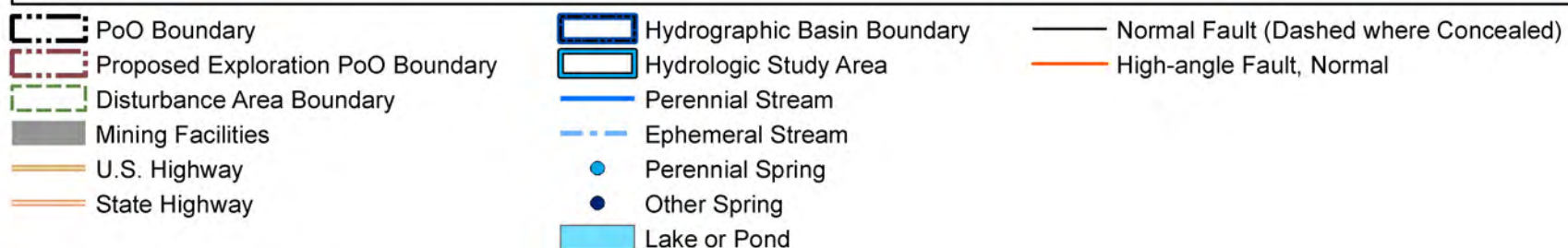
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Figure 4.2-1
Geology Cumulative Effects Study Area



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Source: Piteau 2020; NatGeo 2013.



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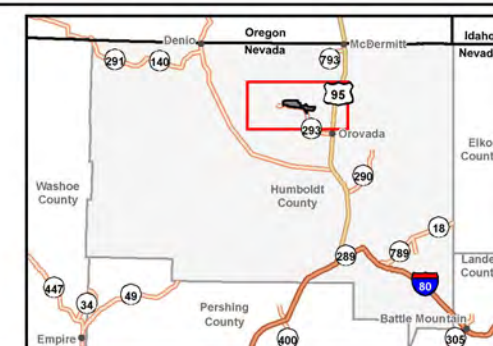
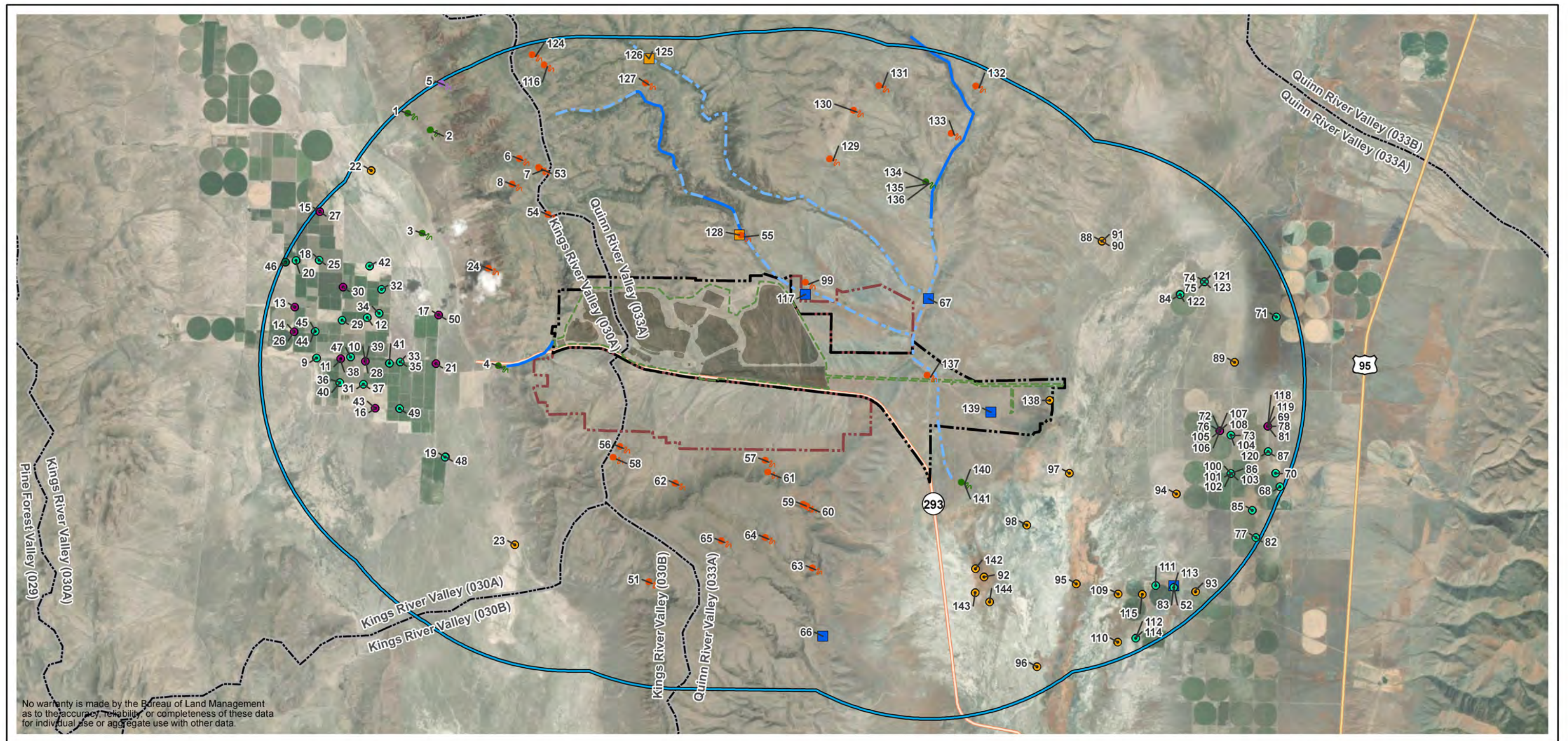


Figure 4.3-1
Hydrologic Study Area



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- PoO Boundary
- Proposed Exploration PoO Boundary
- Disturbance Area Boundary
- Mining Facilities
- Hydrographic Basin Boundary
- Water Rights Study Area
- Perennial Stream
- Ephemeral Stream

Water Rights

- Spring - Irrigation
- Spring - Stock Watering
- Spring - Other
- Stream - Irrigation
- Stream - Stock Watering
- Well - Other
- Well - Irrigation
- Well - Quasi-municipal
- Well - Stock Watering

Roads

- U.S. Highway
- State Highway

Source: ESRI 2020; Piteau 2020, NDWR 2020.



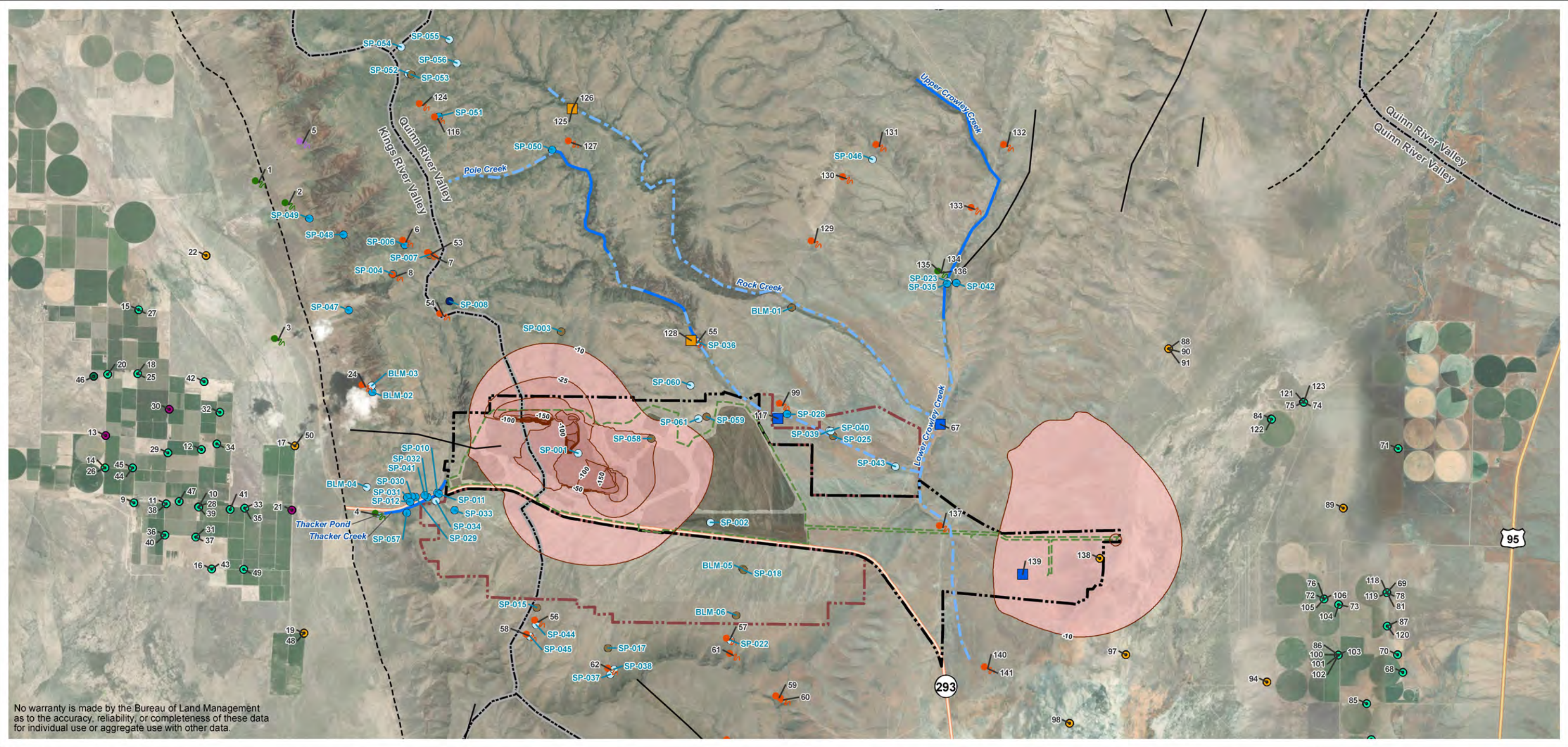
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Figure 4.3-2
Active Water Rights



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- PoO Boundary
- Proposed Exploration PoO Boundary
- Disturbance Area Boundary
- Mining Facilities
- U.S. Highway
- State Highway
- Hydrographic Basin Boundary
- Perennial Stream
- Ephemeral Stream
- Lake or Pond
- Normal Fault (Dashed where Concealed)
- Groundwater Drawdown Contour (ft)

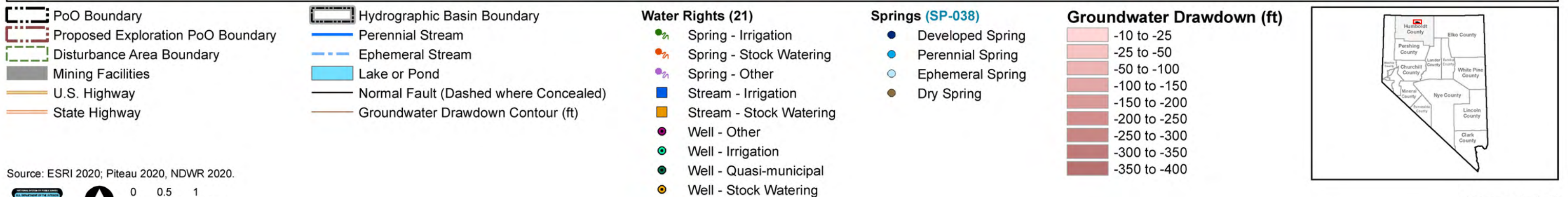
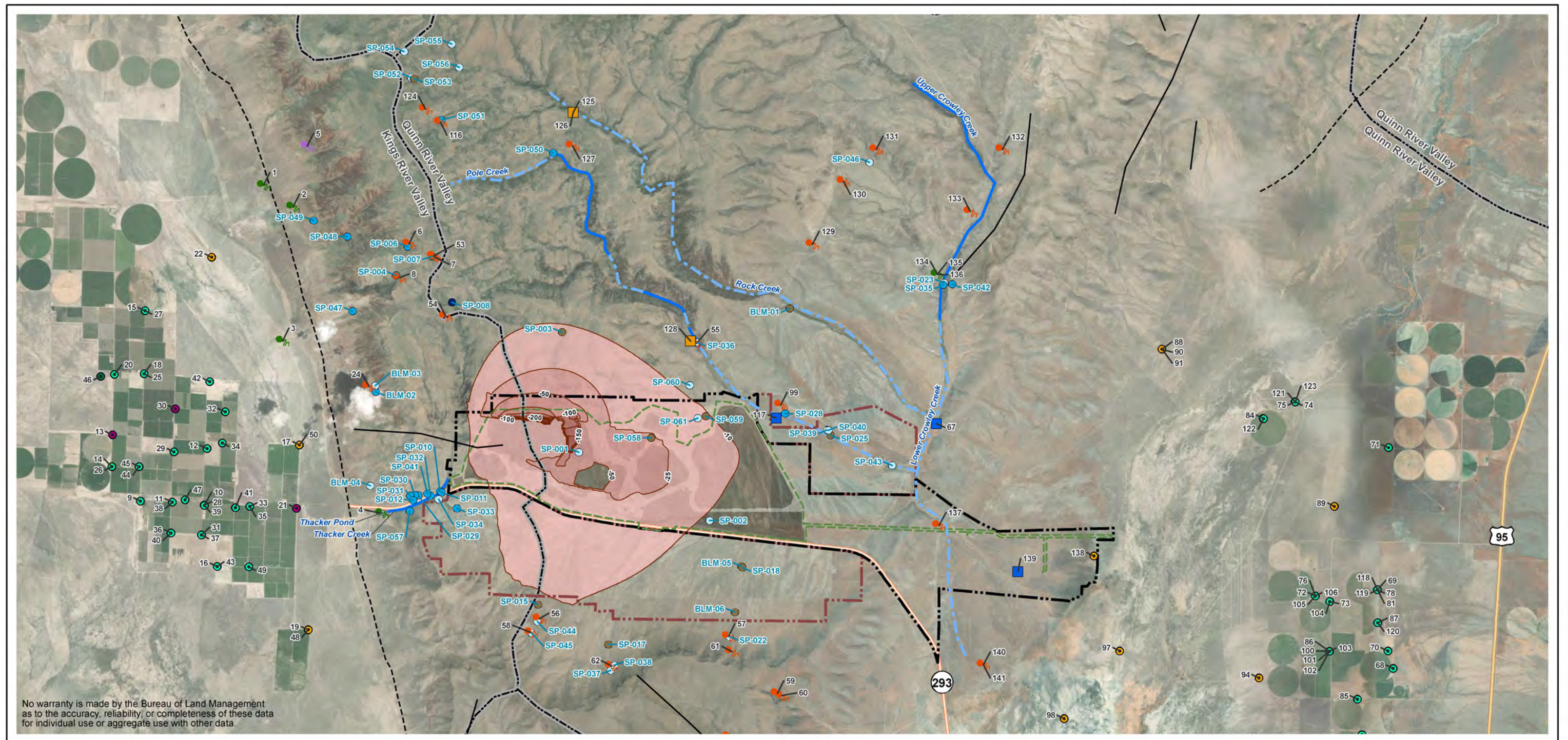
- Water Rights (21)**
- Spring - Irrigation
 - Spring - Stock Watering
 - Spring - Other
 - Stream - Irrigation
 - Stream - Stock Watering
 - Well - Other
 - Well - Irrigation
 - Well - Quasi-municipal
 - Well - Stock Watering

- Springs (SP-038)**
- Developed Spring
 - Perennial Spring
 - Ephemeral Spring
 - Dry Spring

- Groundwater Drawdown (ft)**
- 10 to -25
 - 25 to -50
 - 50 to -100
 - 100 to -150
 - 150 to -200
 - 200 to -250
 - 250 to -300
 - 300 to -350
 - 350 to -400
 - 400 to -450



Figure 4.3-3
Predicted Groundwater Drawdown Proposed Action (End of Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

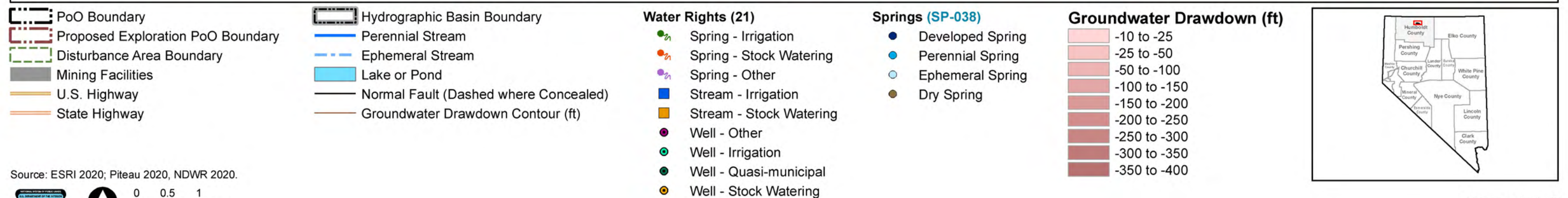
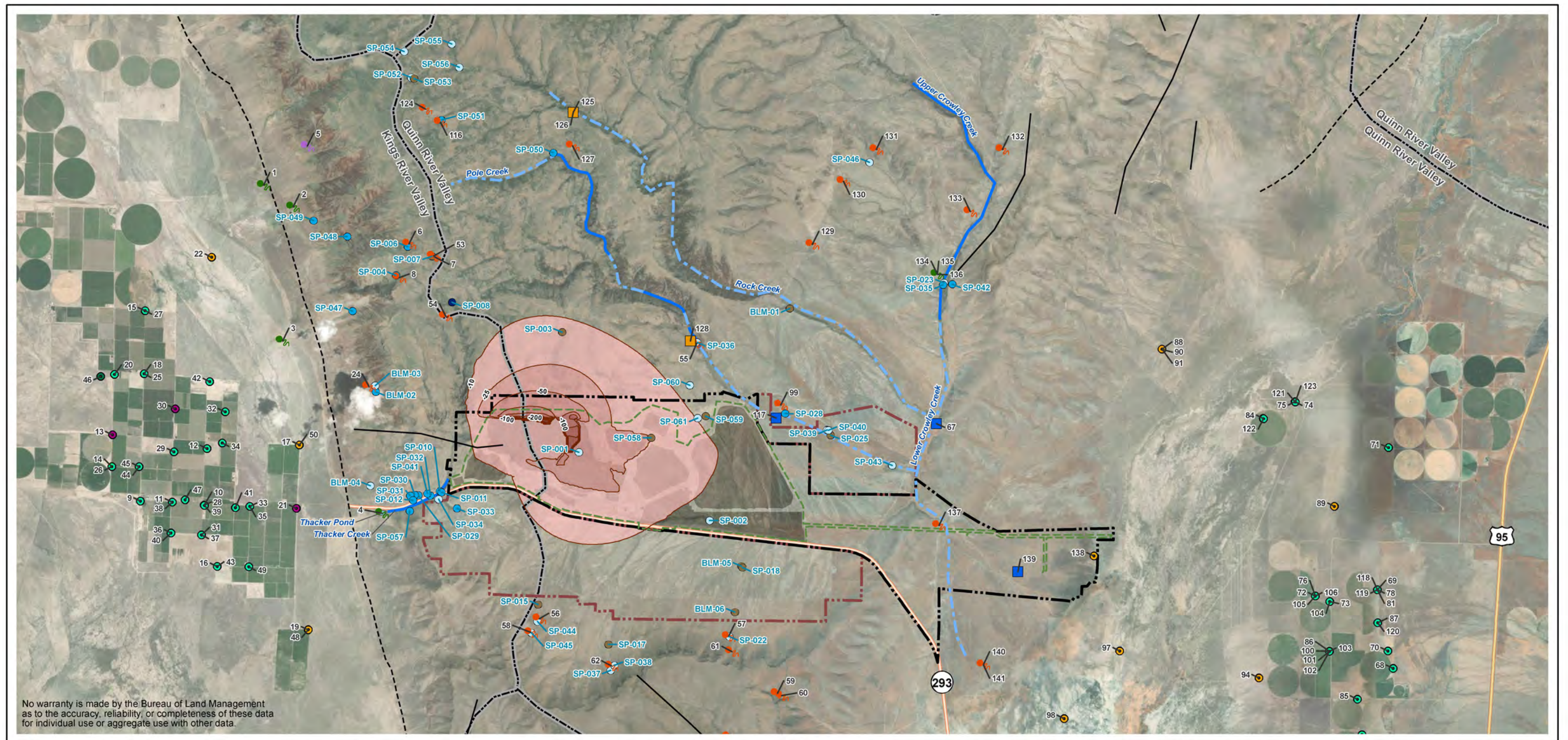


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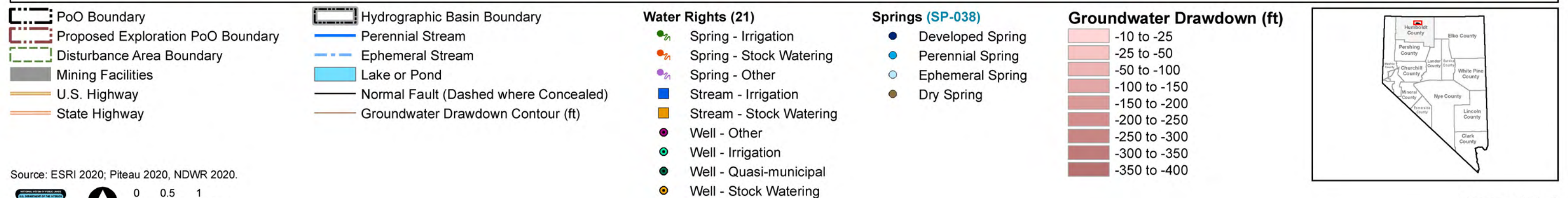
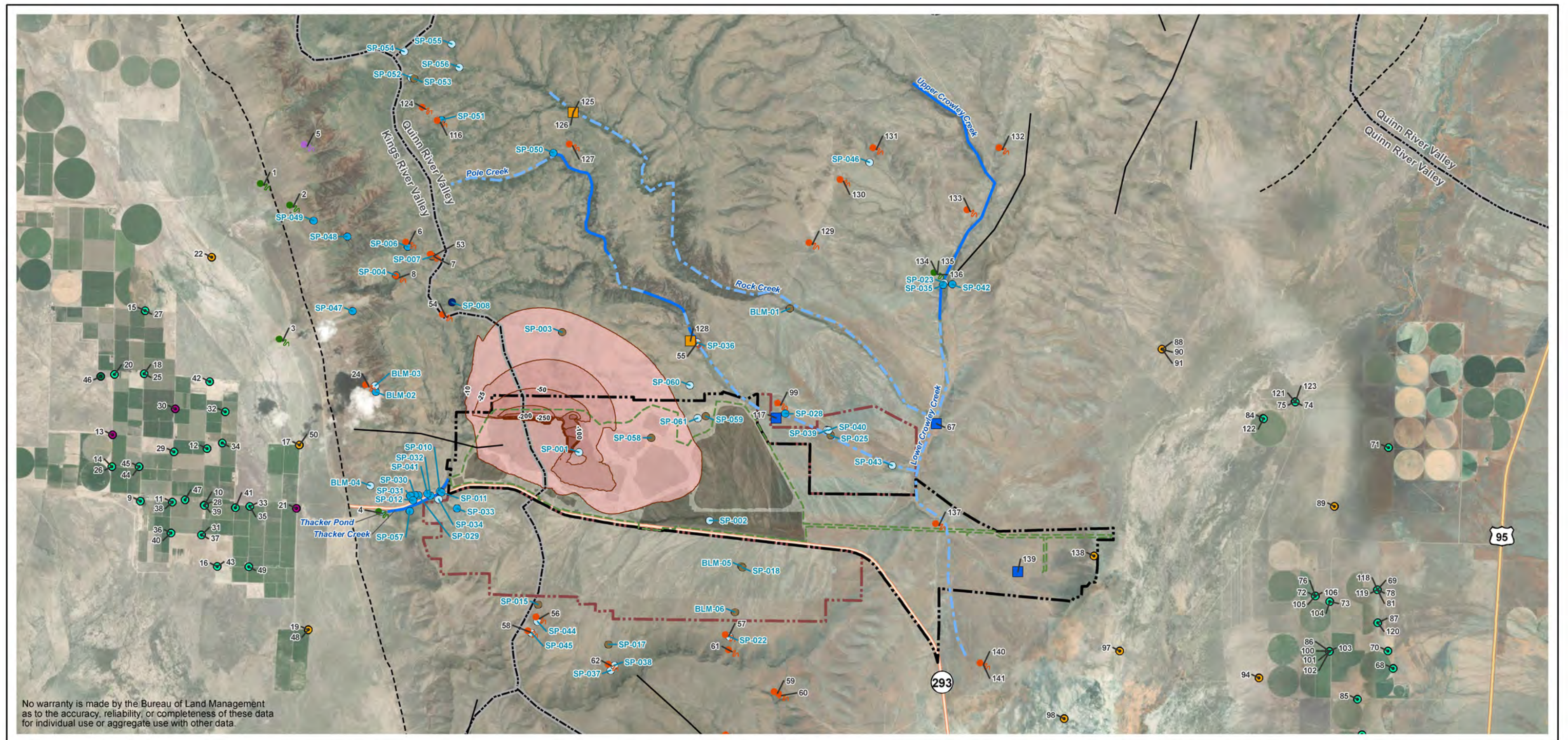
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Figure 4.3-4
Predicted Groundwater Drawdown - Proposed Action (25-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

Figure 4.3-5
Predicted Groundwater Drawdown - Proposed Action (50-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

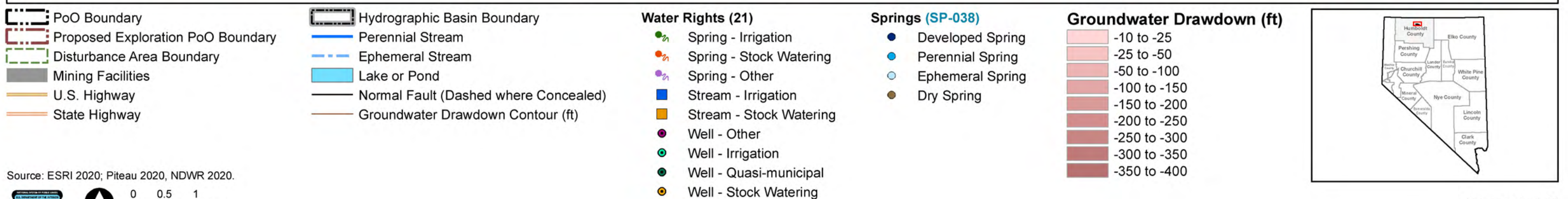
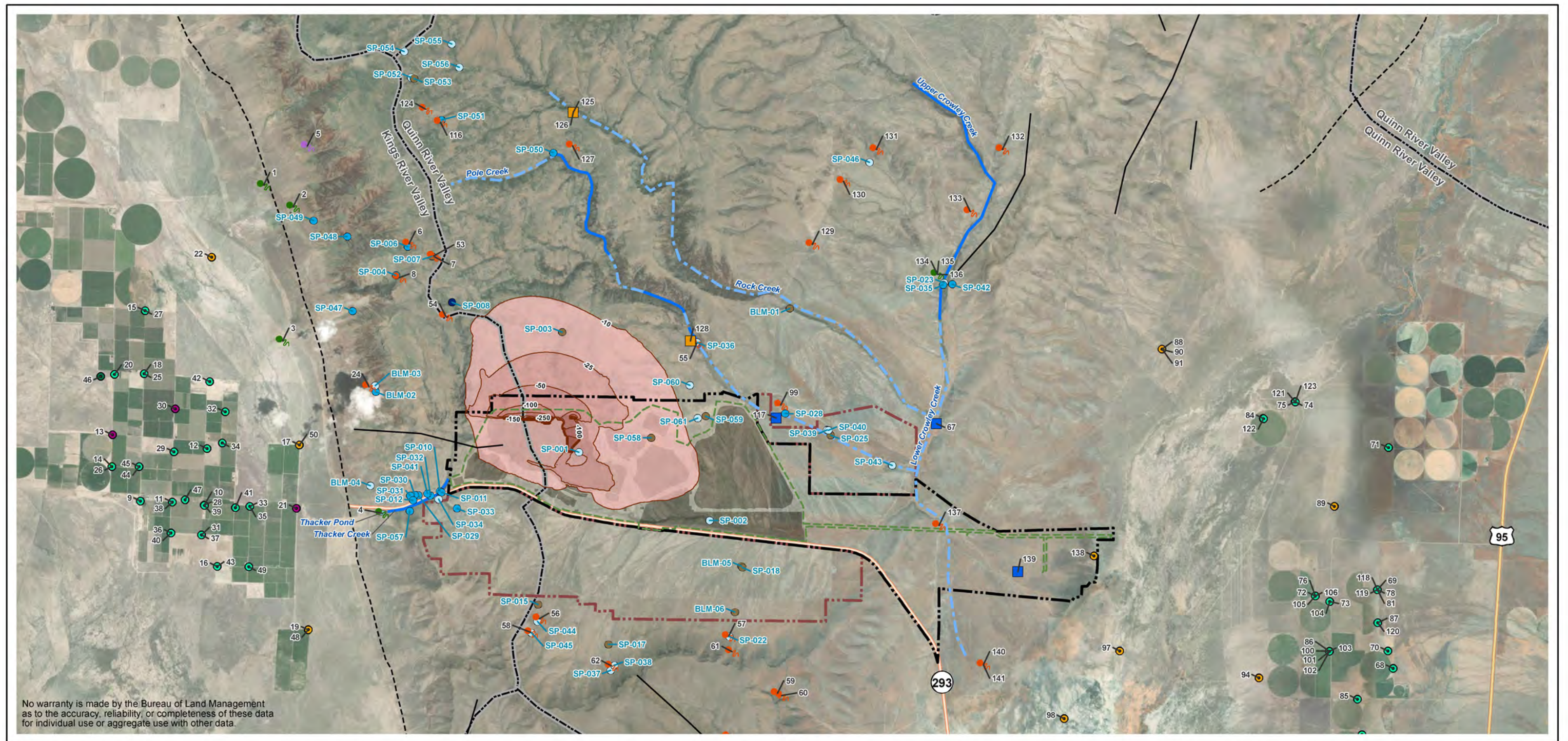


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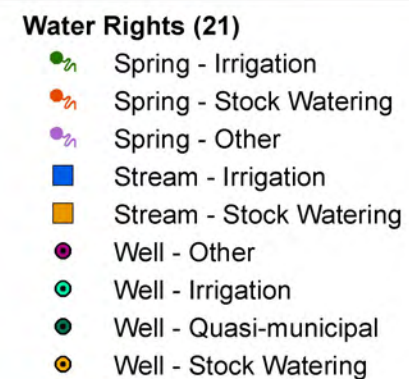
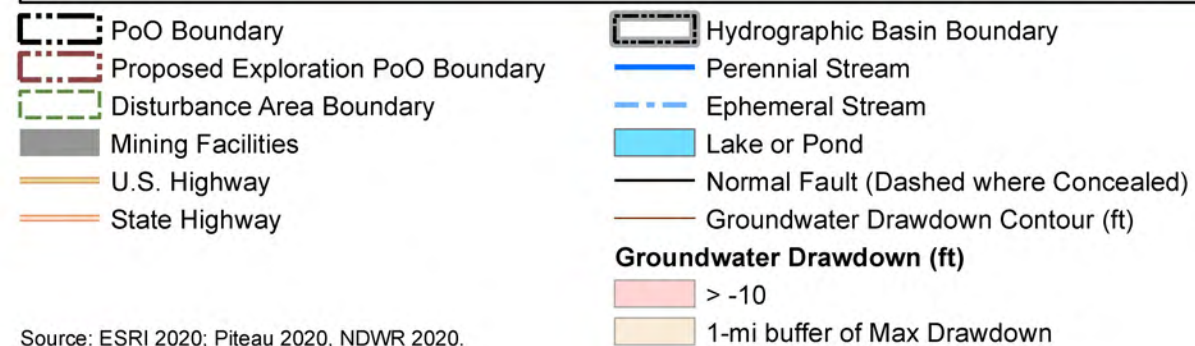
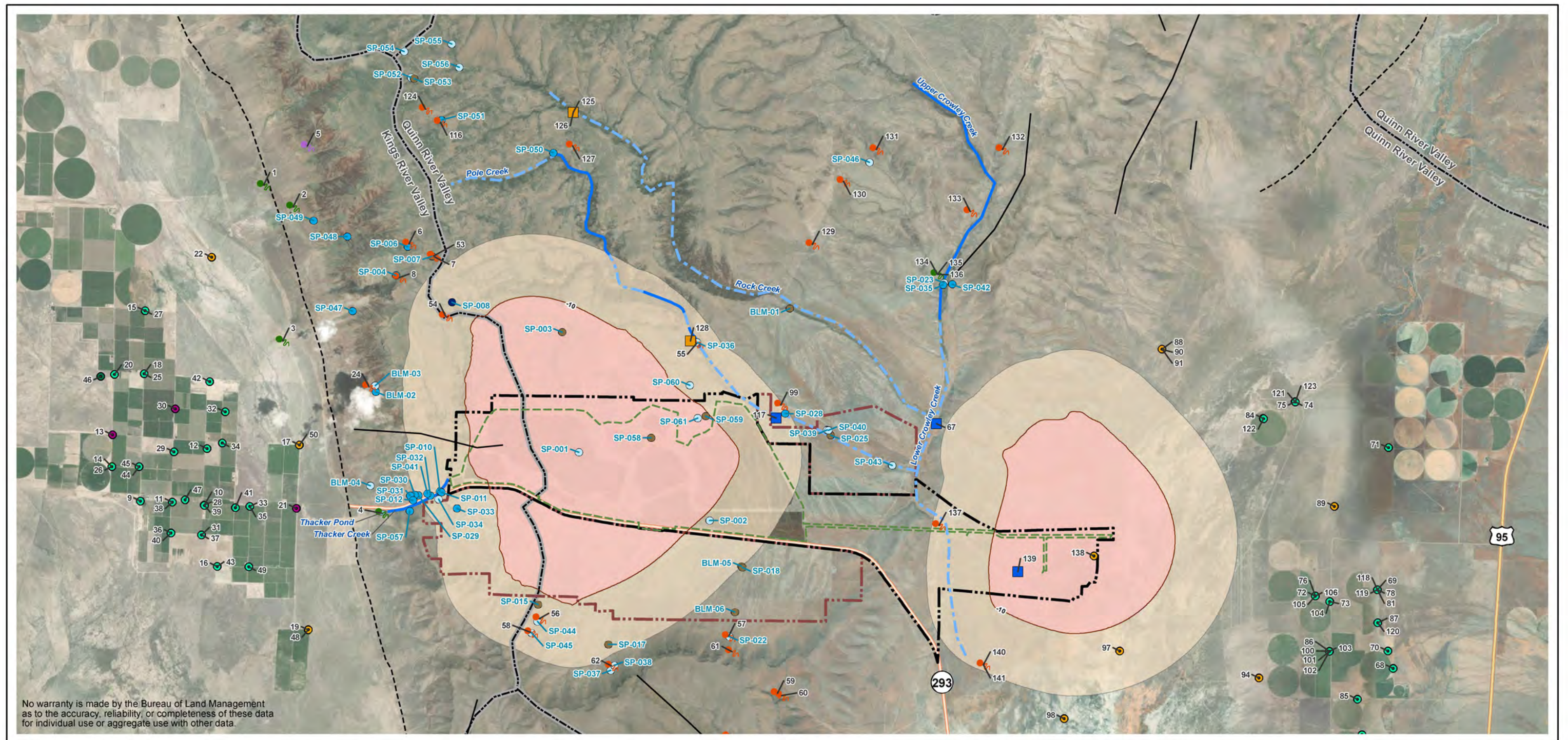
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Figure 4.3-6
Predicted Groundwater Drawdown - Proposed Action (100-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

Figure 4.3-7
Predicted Groundwater Drawdown - Proposed Action (300-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

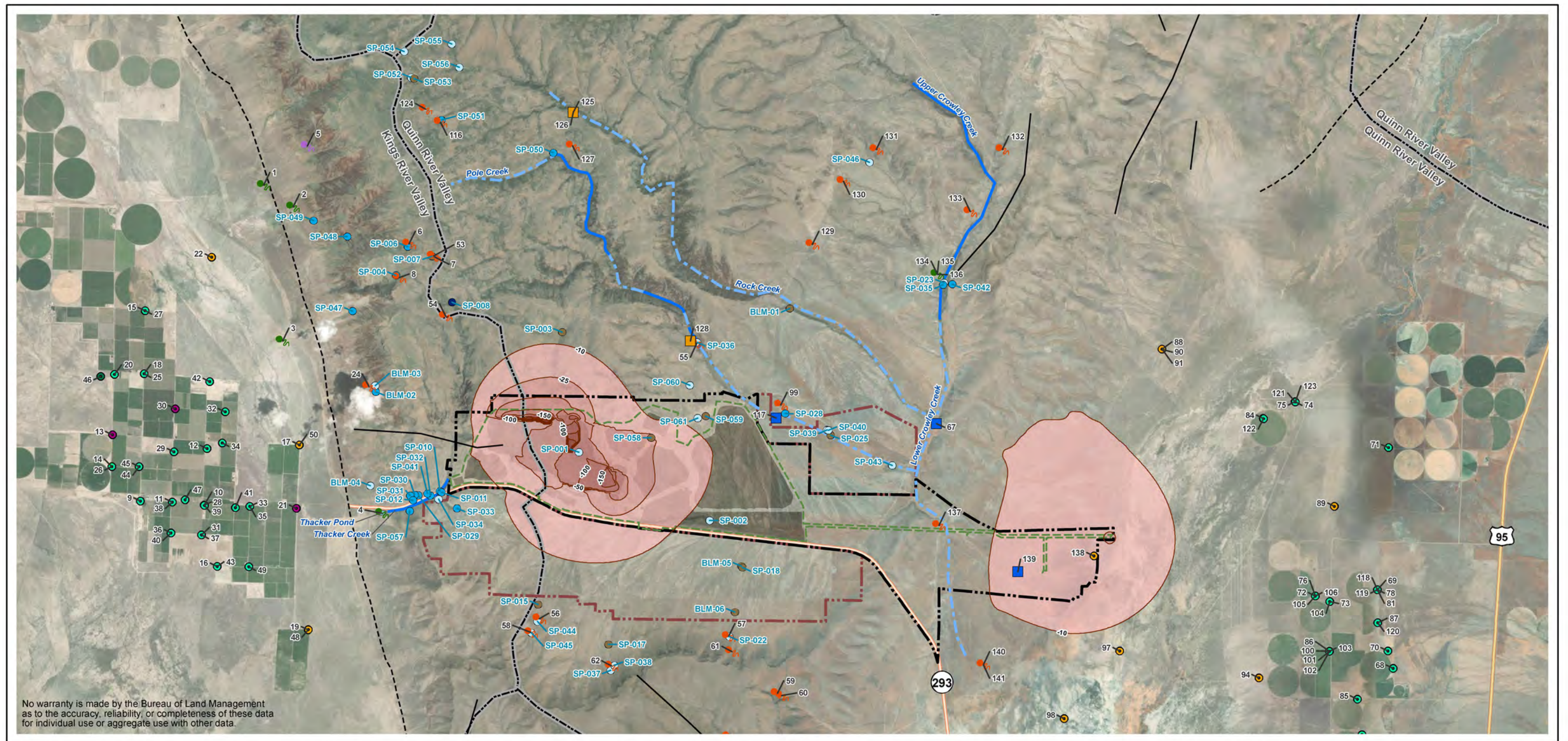


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Figure 4.3-8
Predicted Maximum Extent of the 10-Foot Drawdown Contour - Proposed Action



Source: ESRI 2020; Piteau 2020, NDWR 2020.

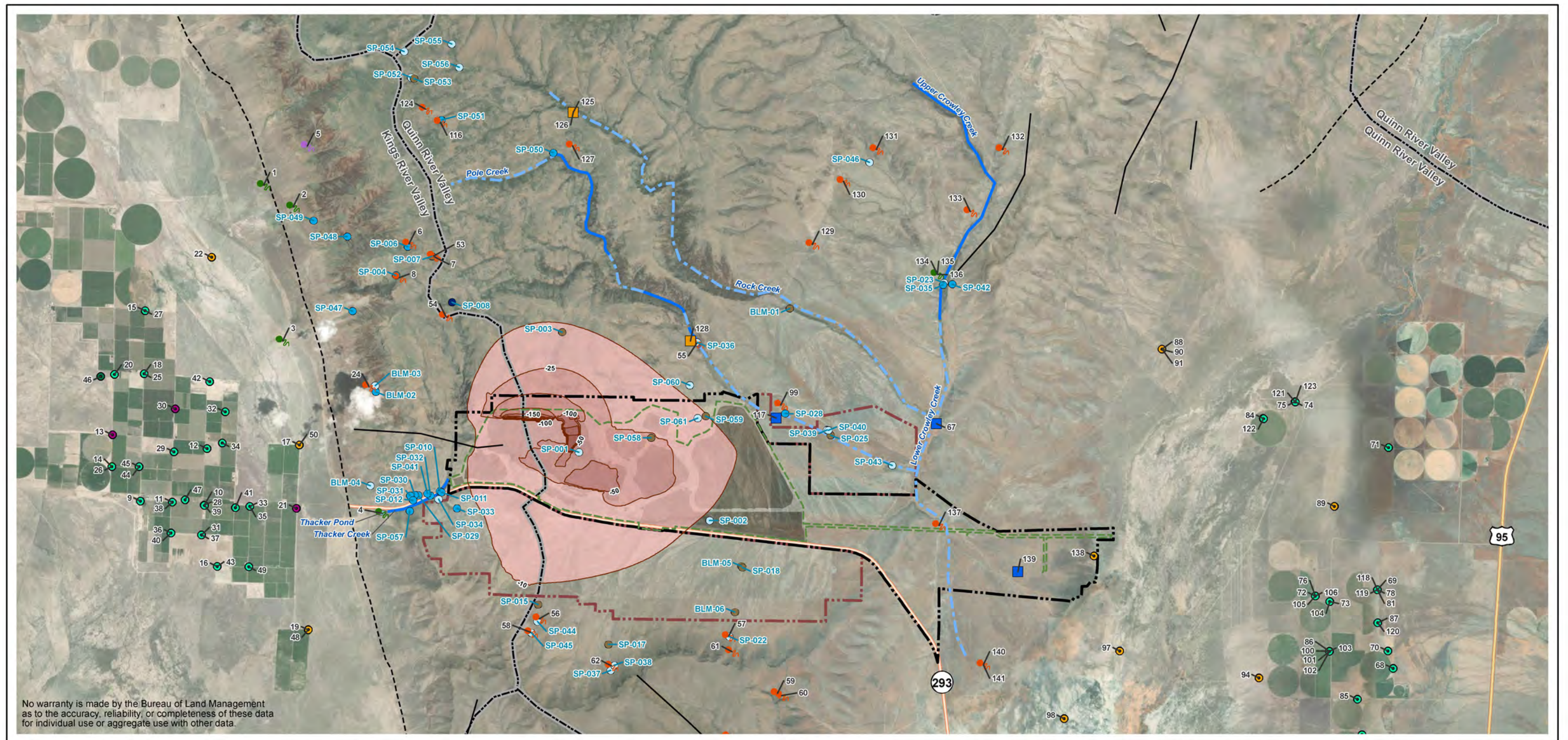


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Figure 4.3-9
Predicted Groundwater Drawdown - Partial Pit Backfill Alternative (End of Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

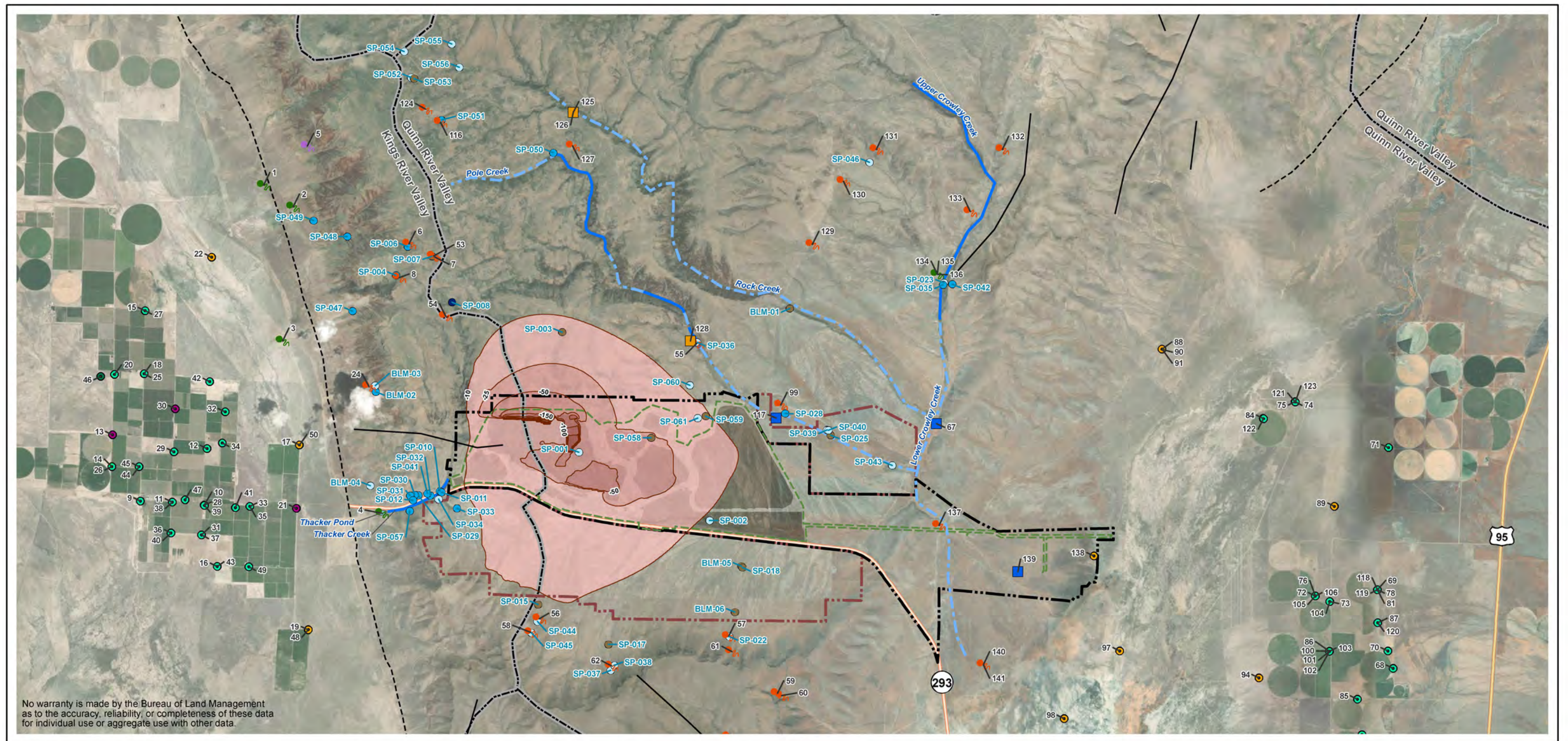


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Figure 4.3-10
Predicted Groundwater Drawdown - Partial Pit Backfill Alternative (25-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

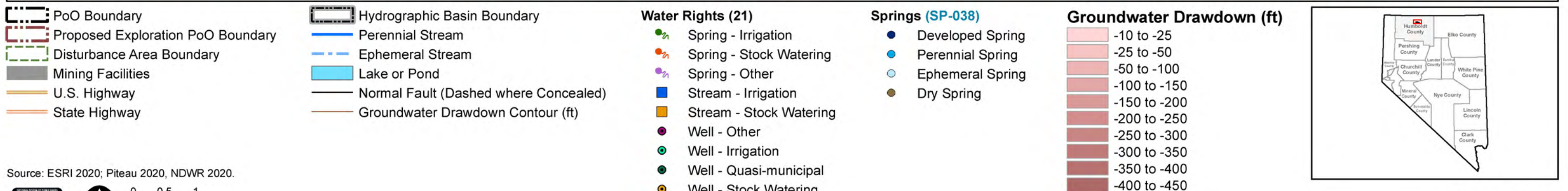
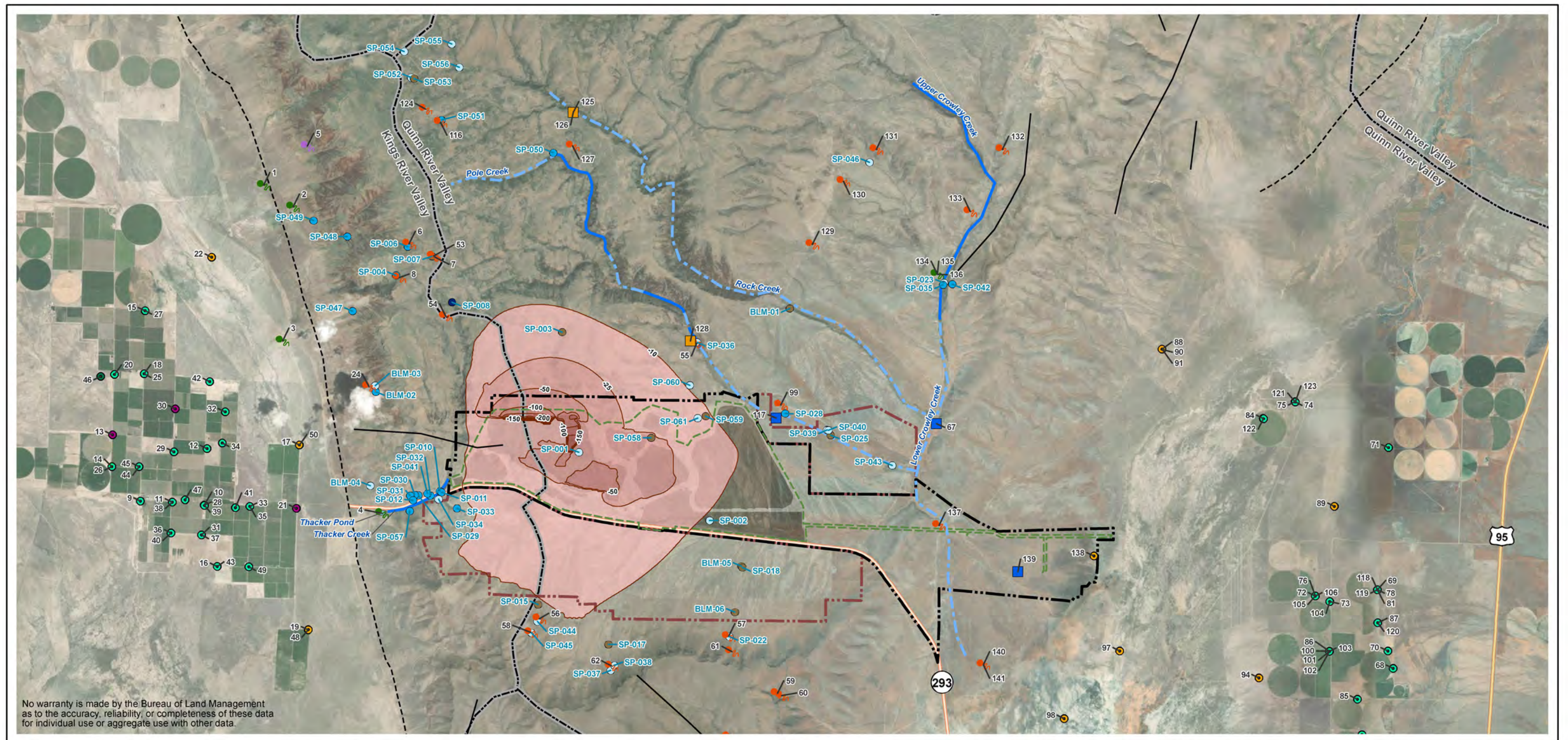


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Figure 4.3-11
Predicted Groundwater Drawdown - Partial Pit Backfill Alternative (50-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

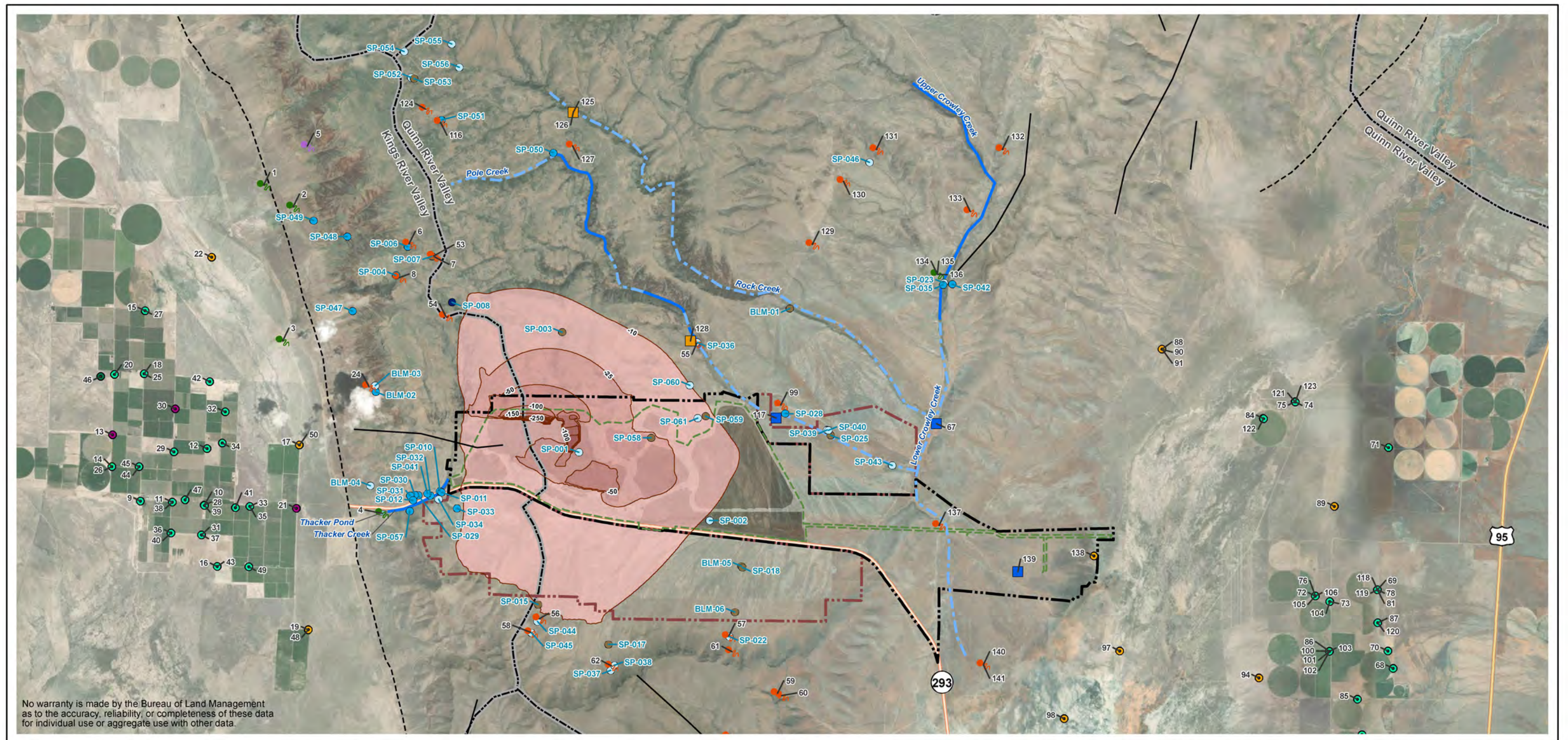


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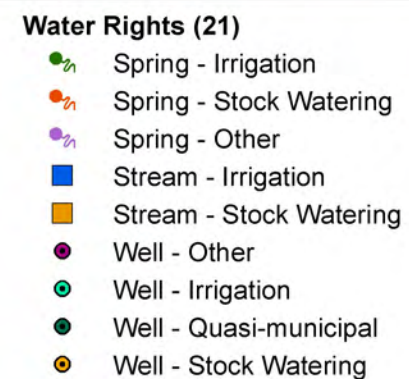
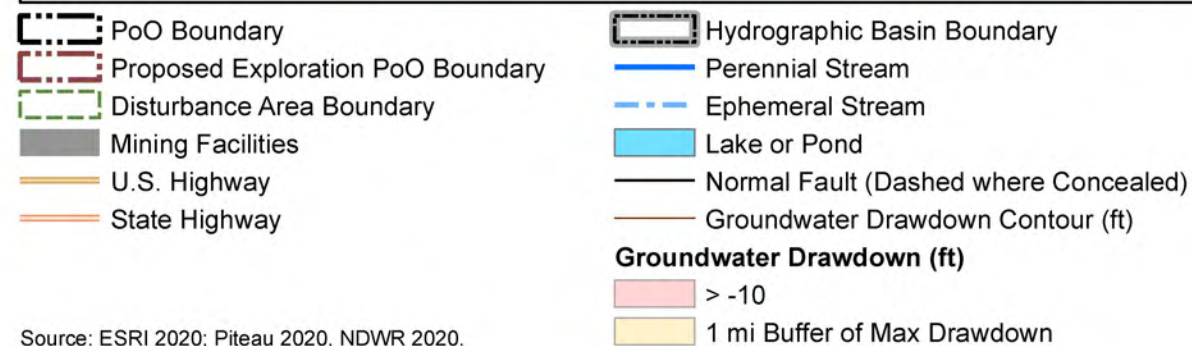
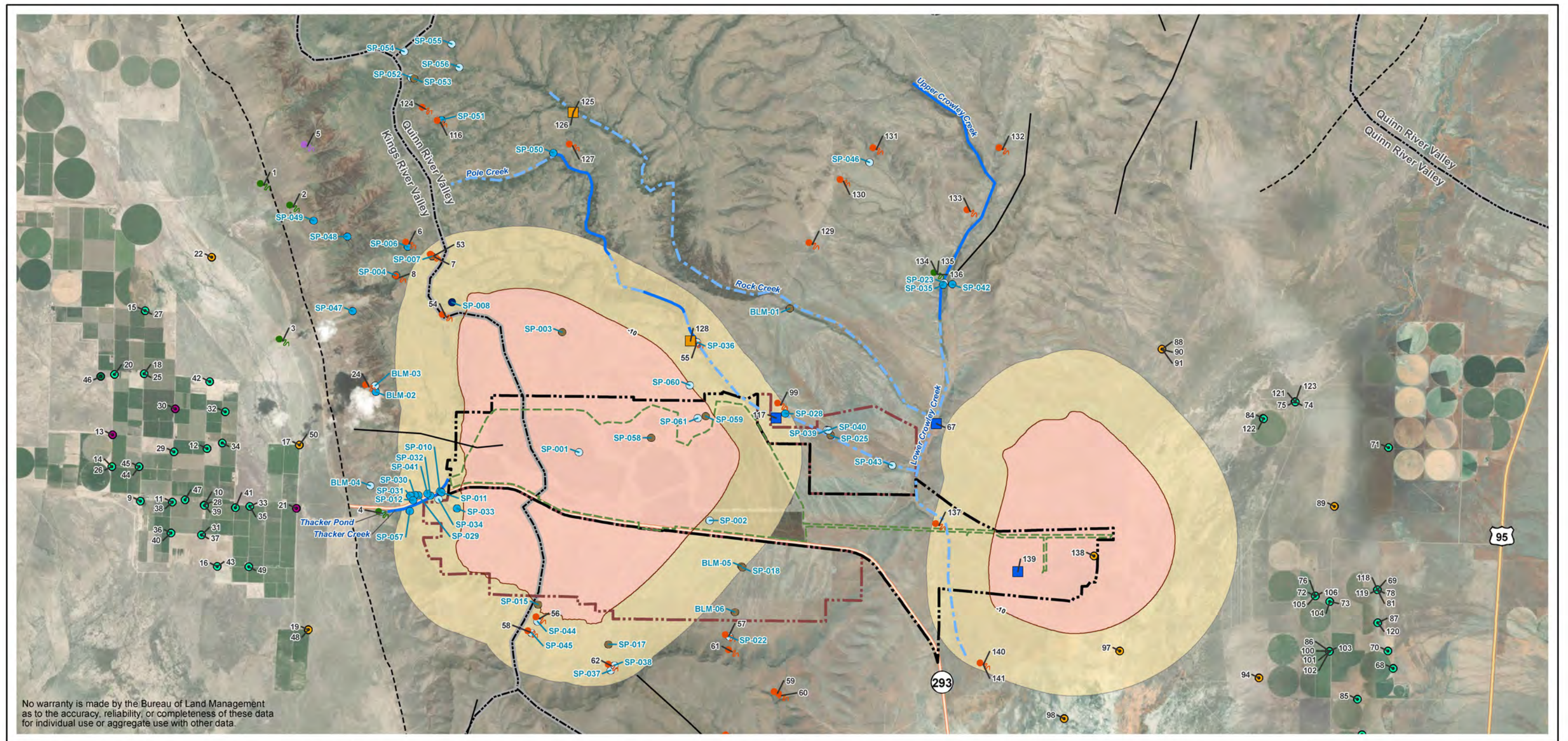
Date: 10/6/2020

Figure 4.3-12
Predicted Groundwater Drawdown - Partial Pit Backfill Alternative (100-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

Figure 4.3-13
Predicted Groundwater Drawdown - Partial Pit Backfill Alternative (300-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

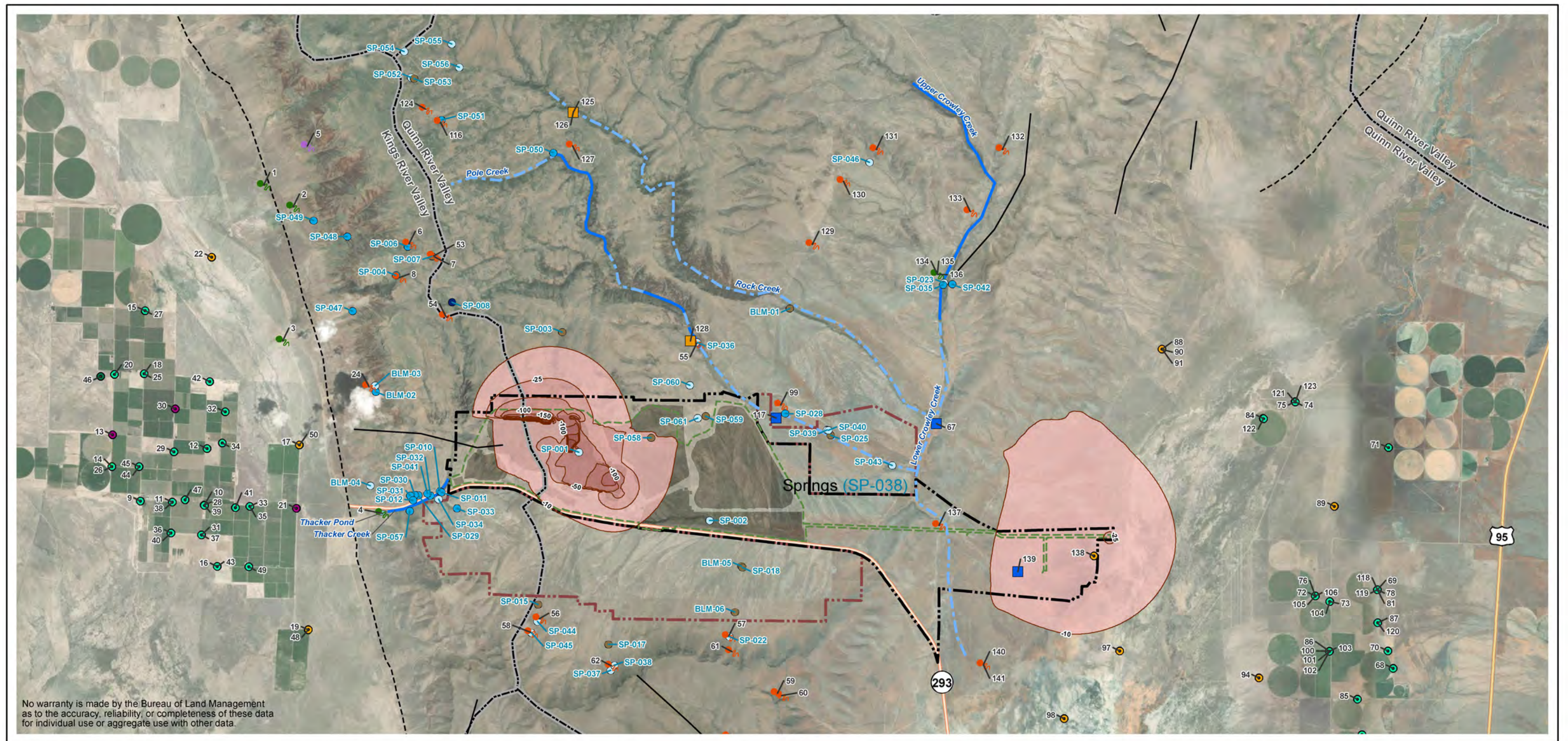


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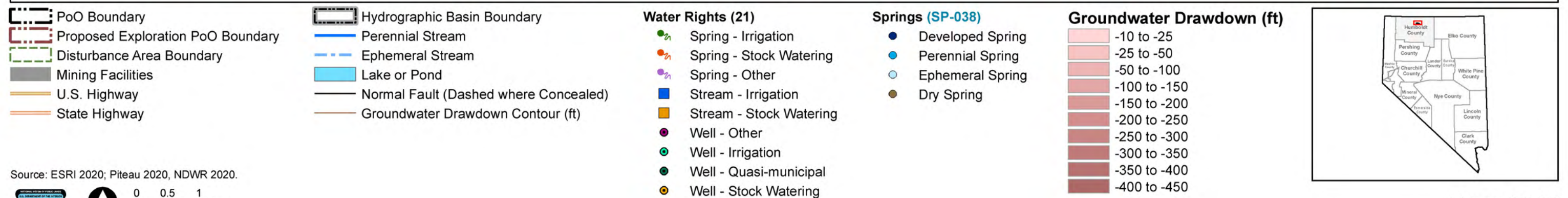
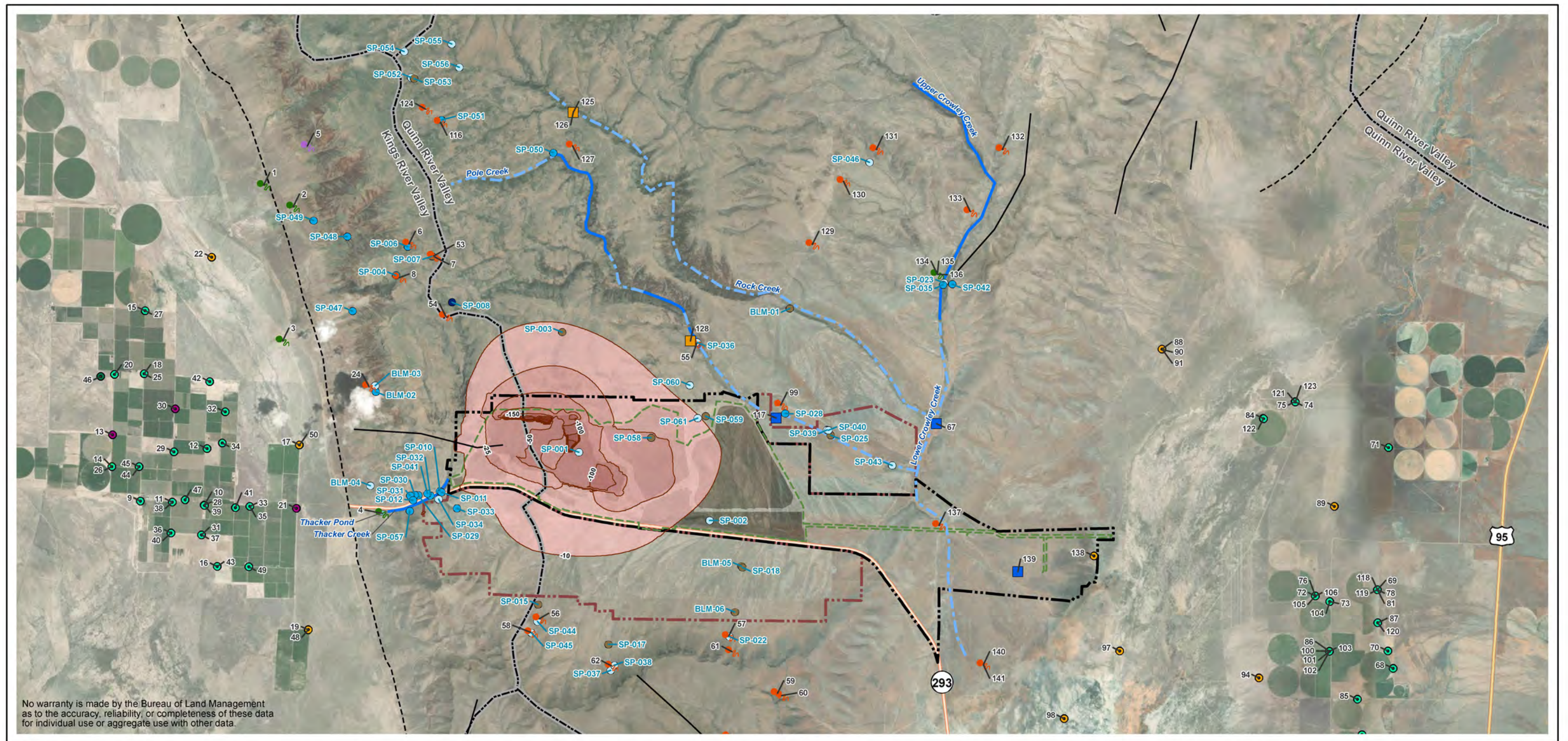
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Figure 4.3-14
Predicted Maximum Extent of the 10-Foot Drawdown Contour - Partial Pit Backfill Alternative



Source: ESRI 2020; Piteau 2020, NDWR 2020.

Figure 4.3-15
Predicted Groundwater Drawdown - No Pit Backfill Alternative (End of Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

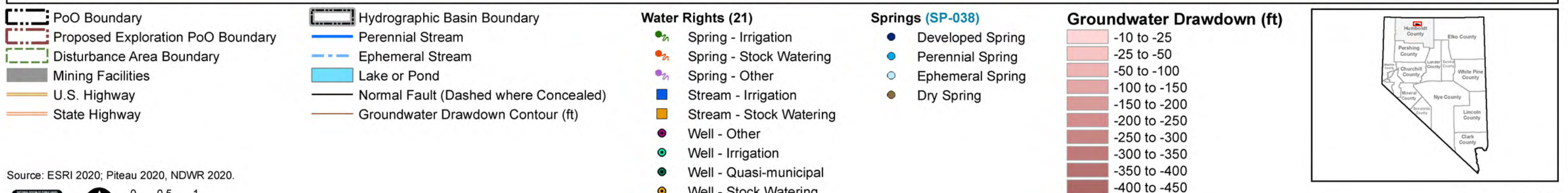
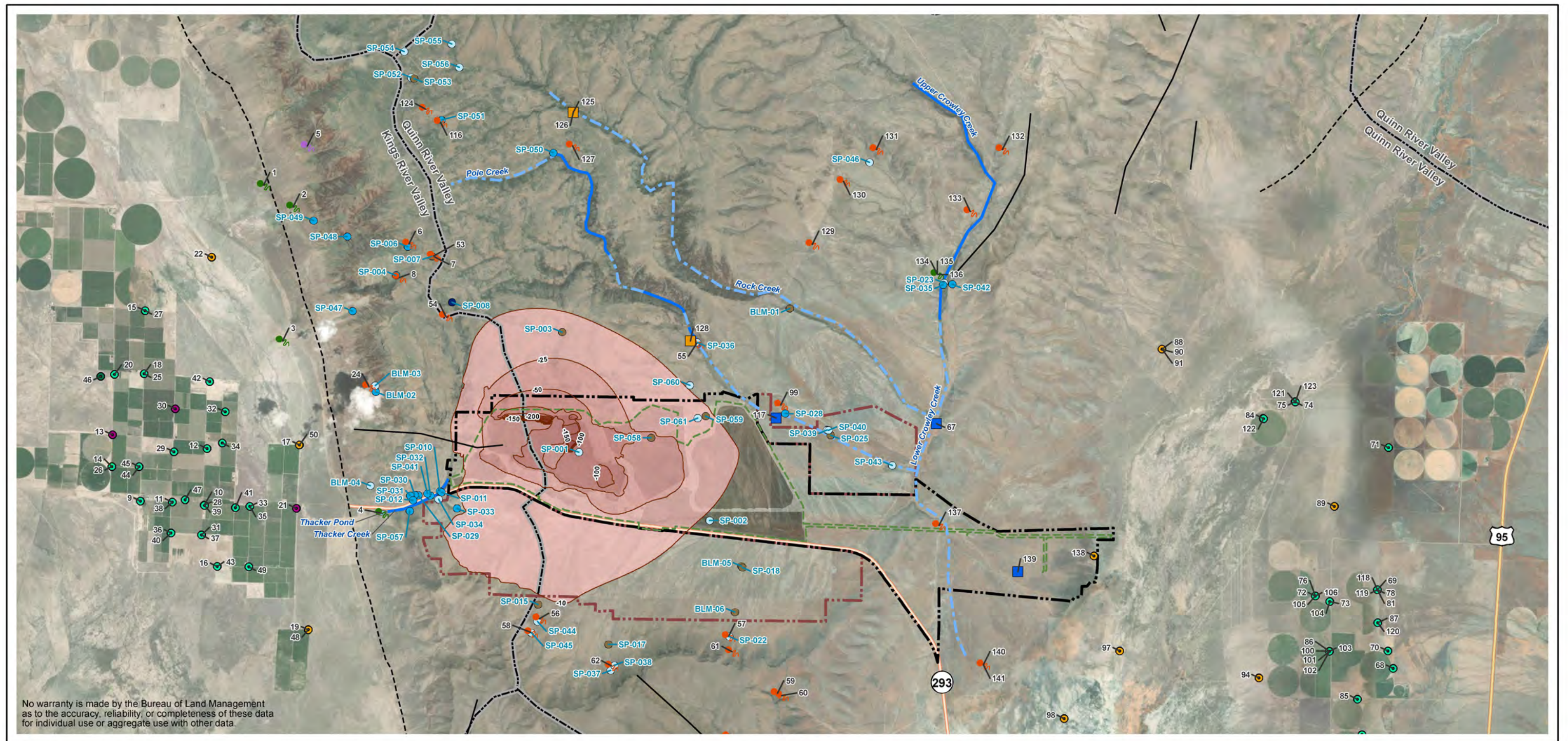


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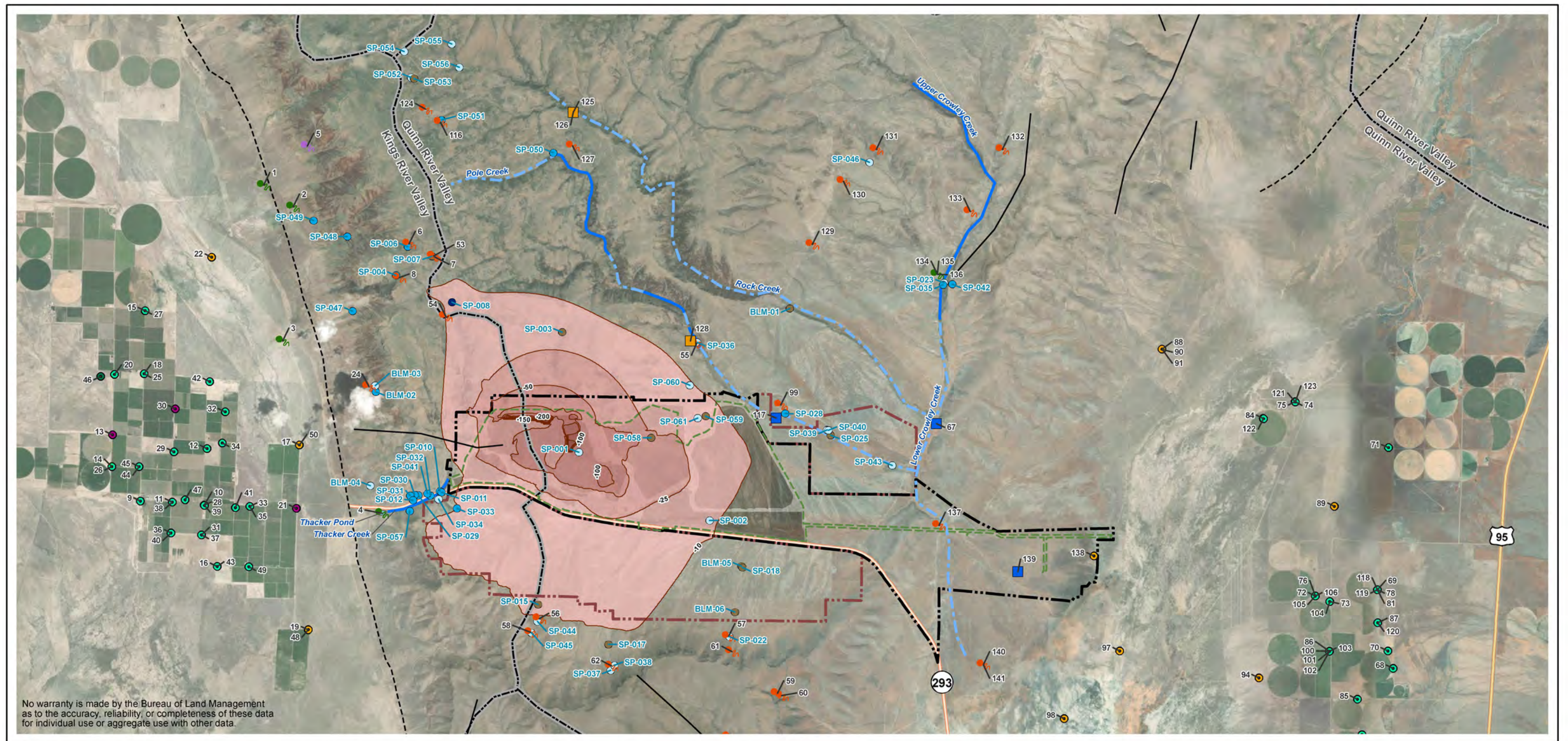
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Figure 4.3-16
Predicted Groundwater Drawdown - No Pit Backfill Alternative (25-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

Figure 4.3-17
Predicted Groundwater Drawdown - No Pit Backfill Alternative (50-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

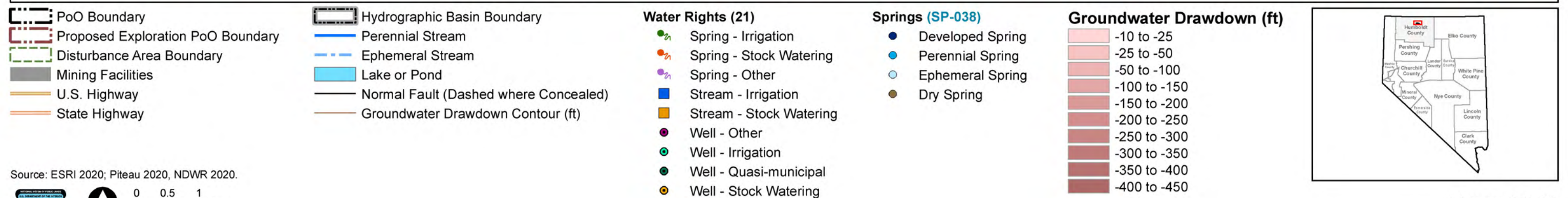
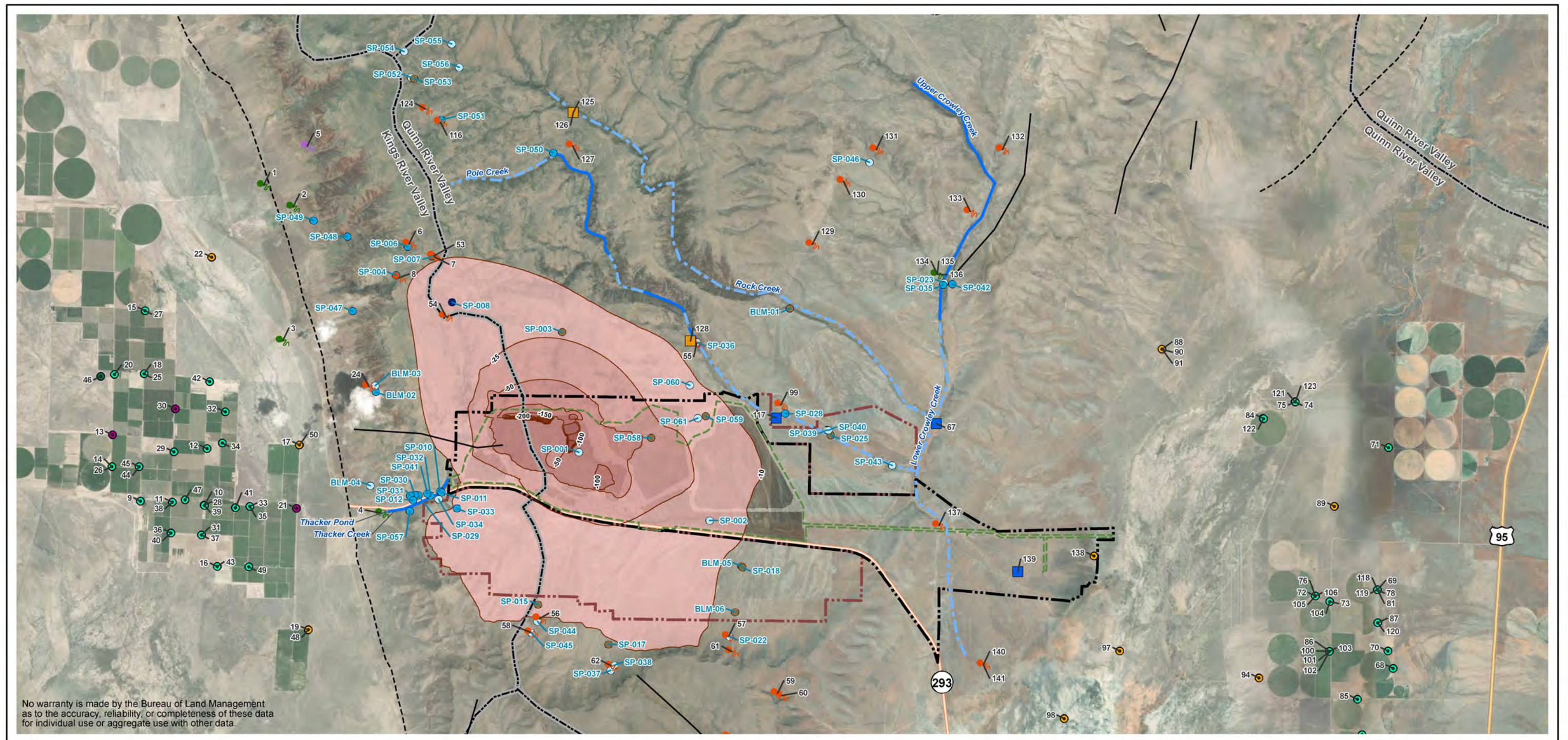


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Figure 4.3-18
Predicted Groundwater Drawdown - No Pit Backfill Alternative (100-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

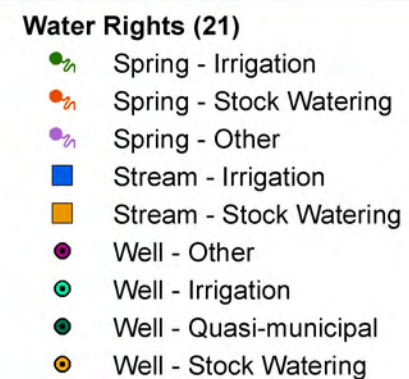
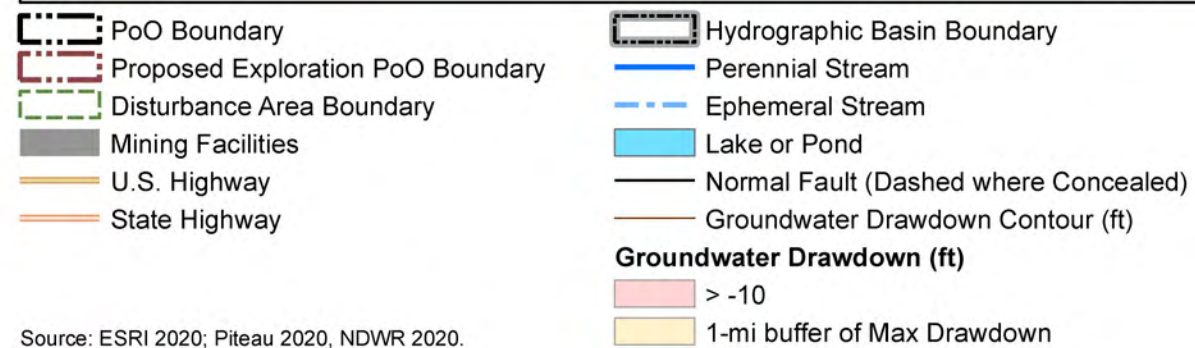
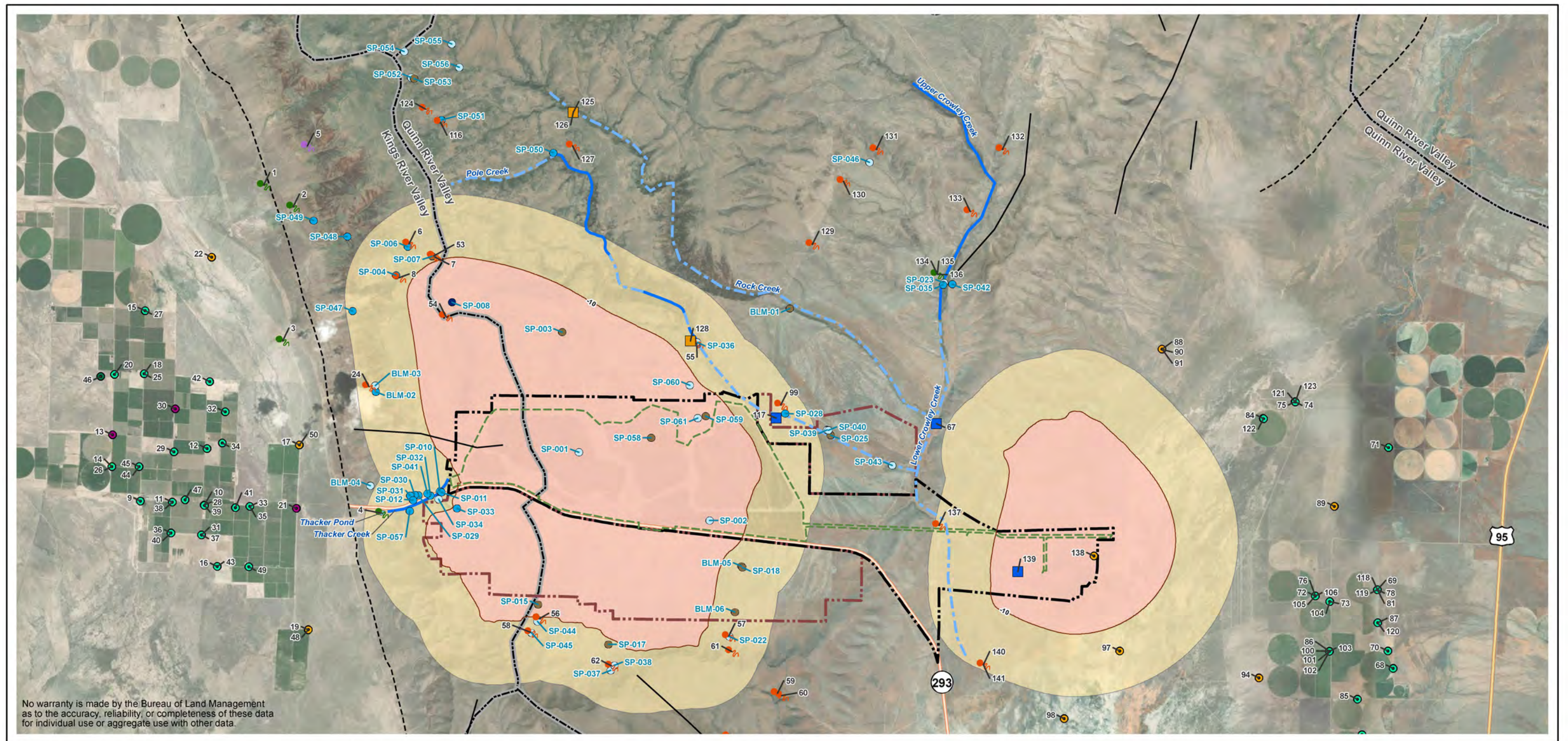


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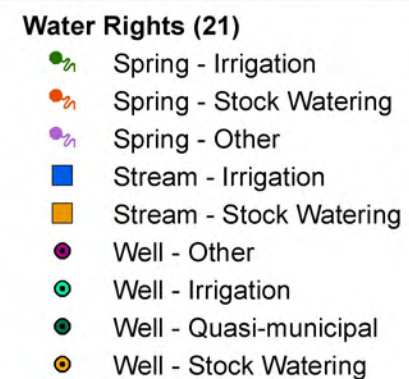
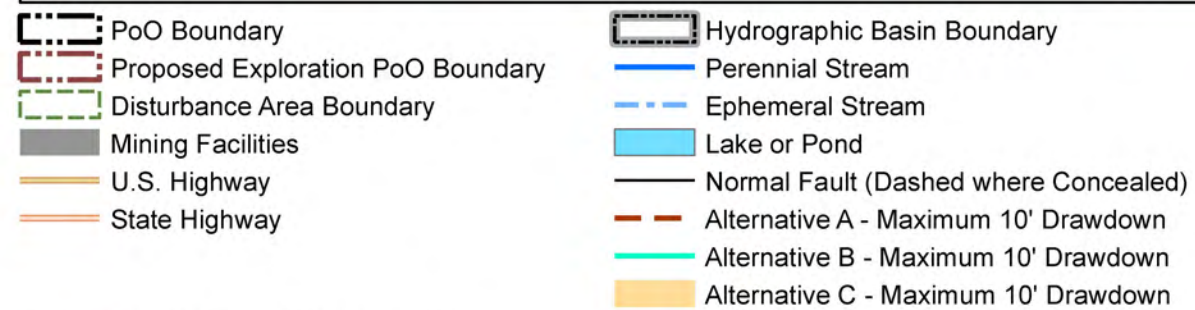
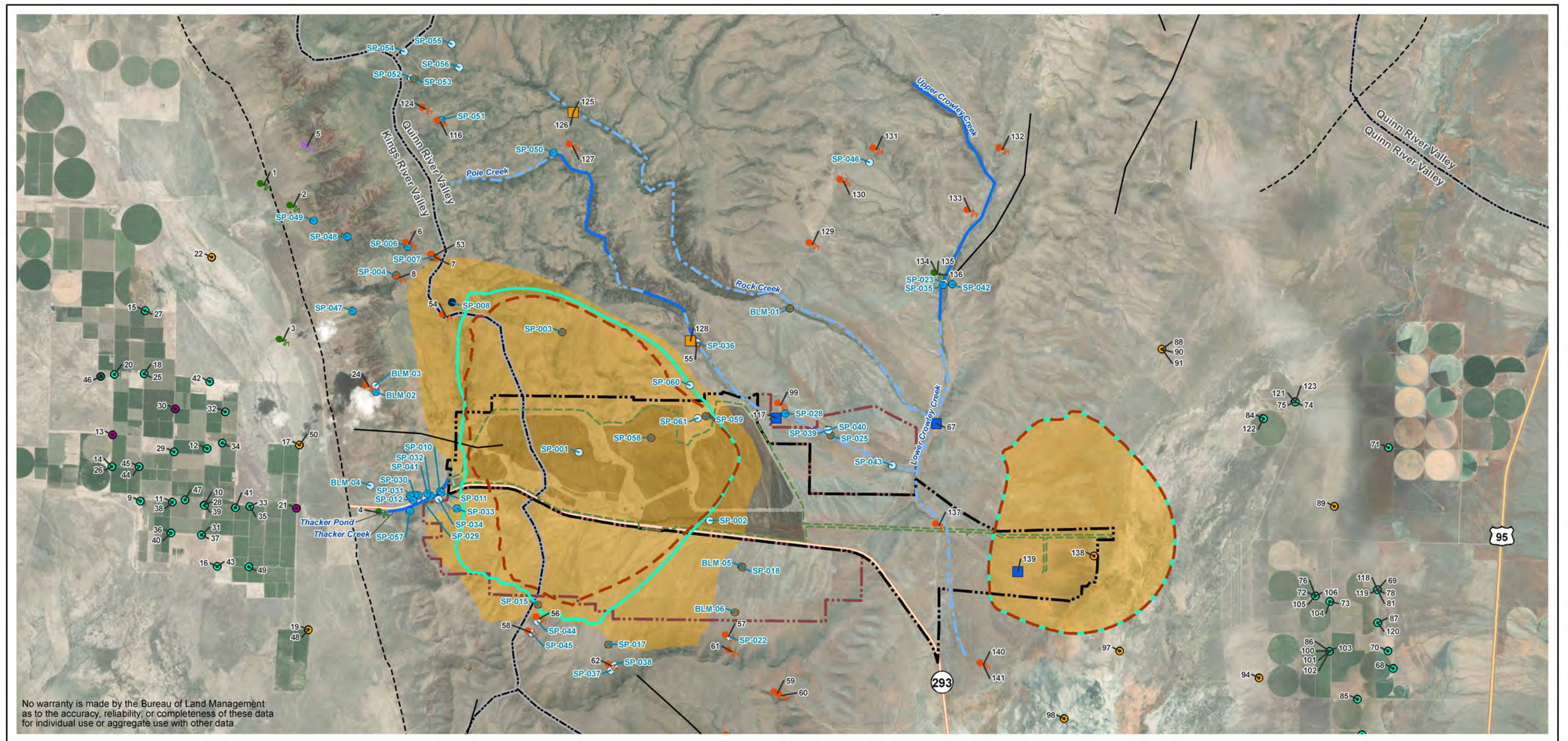
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Figure 4.3-19
Predicted Groundwater Drawdown - No Pit Backfill Alternative (300-Years Post-Mining)



Source: ESRI 2020; Piteau 2020, NDWR 2020.

Figure 4.3-20
Predicted Maximum Extent of the 10-Foot Drawdown Contour - No Backfill Alternative



Source: ESRI 2020; Piteau 2020, NDWR 2020.



0 0.5 1
Miles

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Figure 4.3-21
Predicted Maximum Extent of the 10-Foot Drawdown Contour- Alternative Comparison

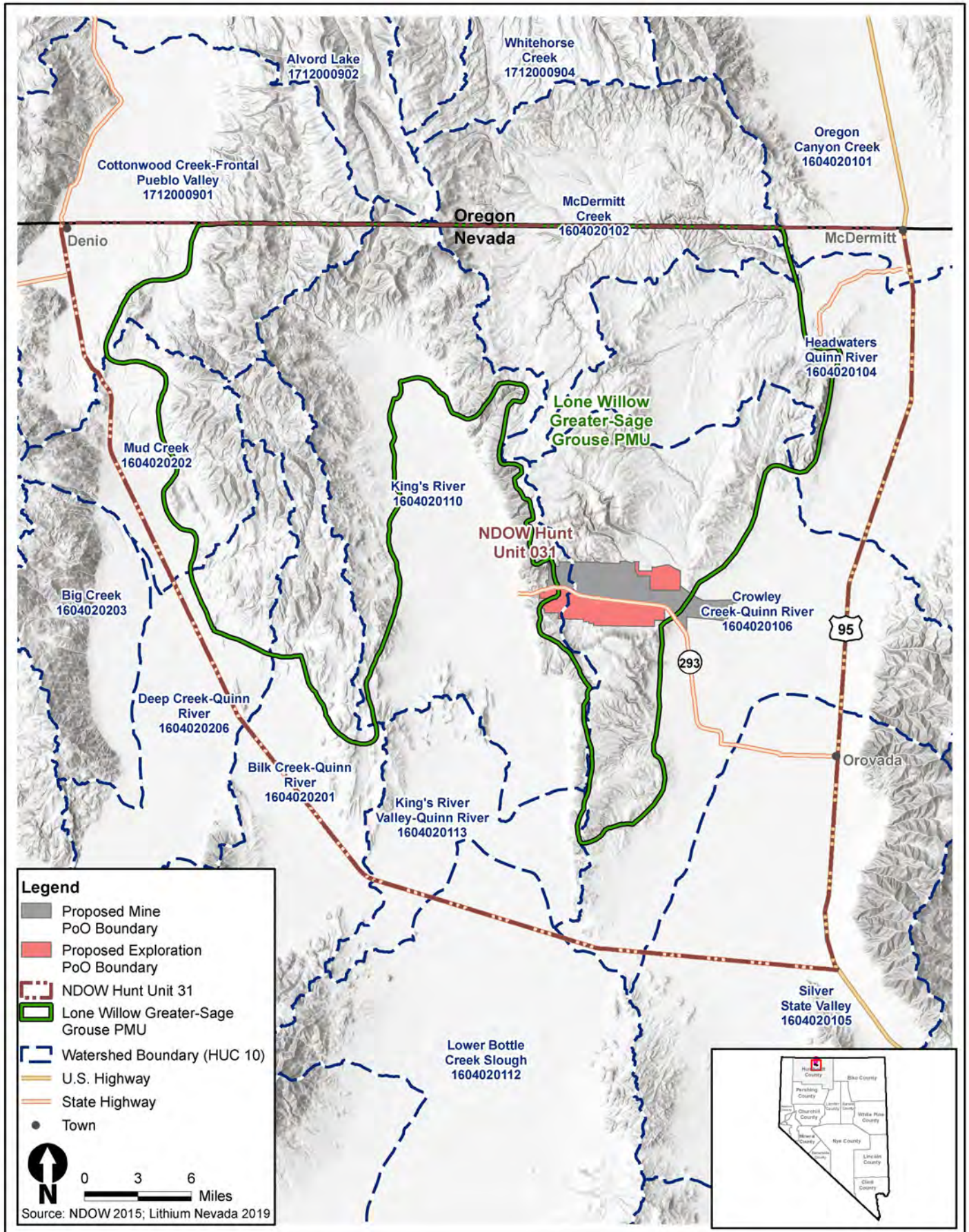
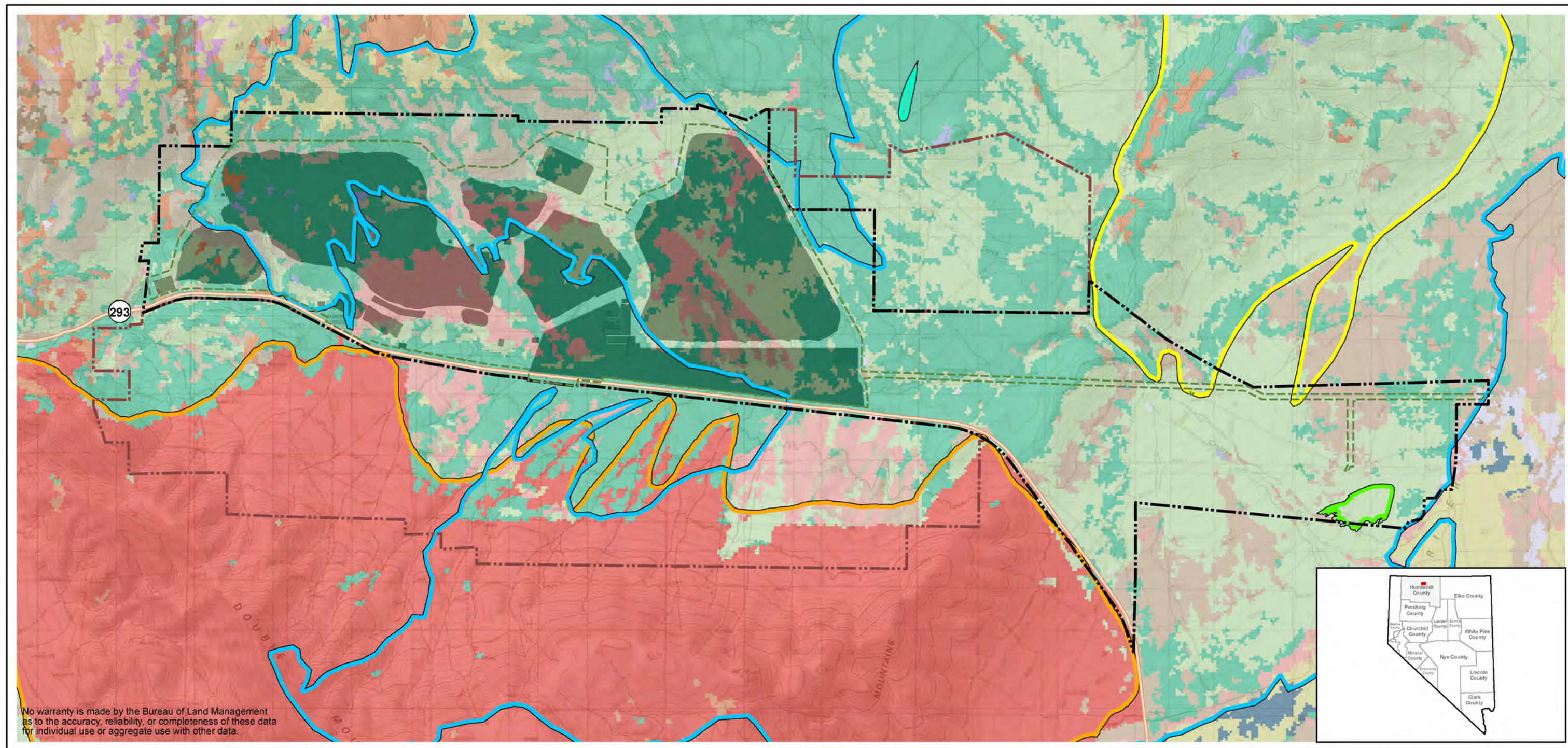


Figure 4.5-1
Biological Resources
Cumulative Effects Study Area



Source: BLM 2020, USGS 2004; NatGeo 2013.

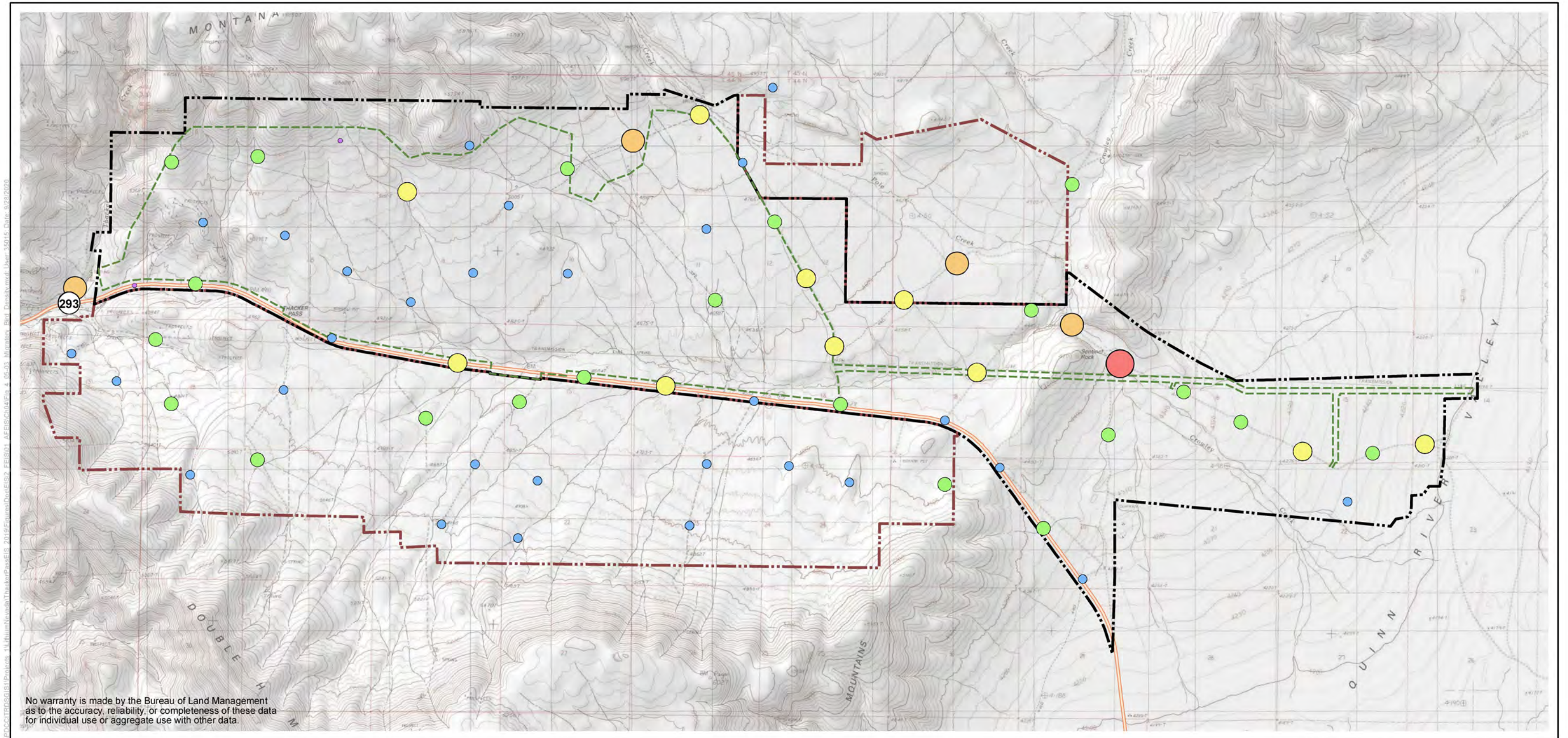


0 0.5 1 Miles

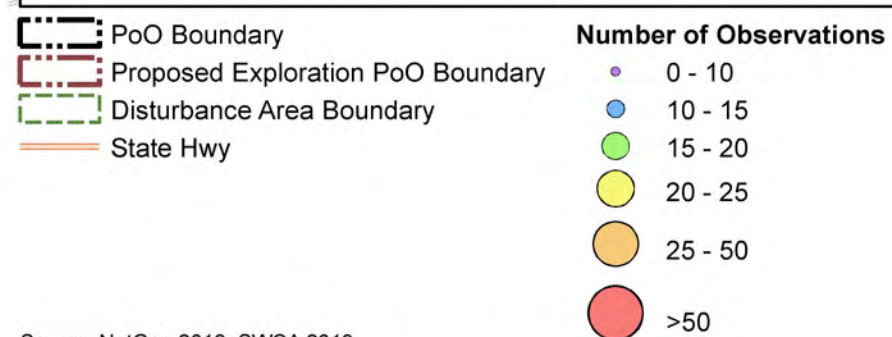
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Figure 4.5-2
Vegetation Cover



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Source: NatGeo 2013; SWCA 2019.



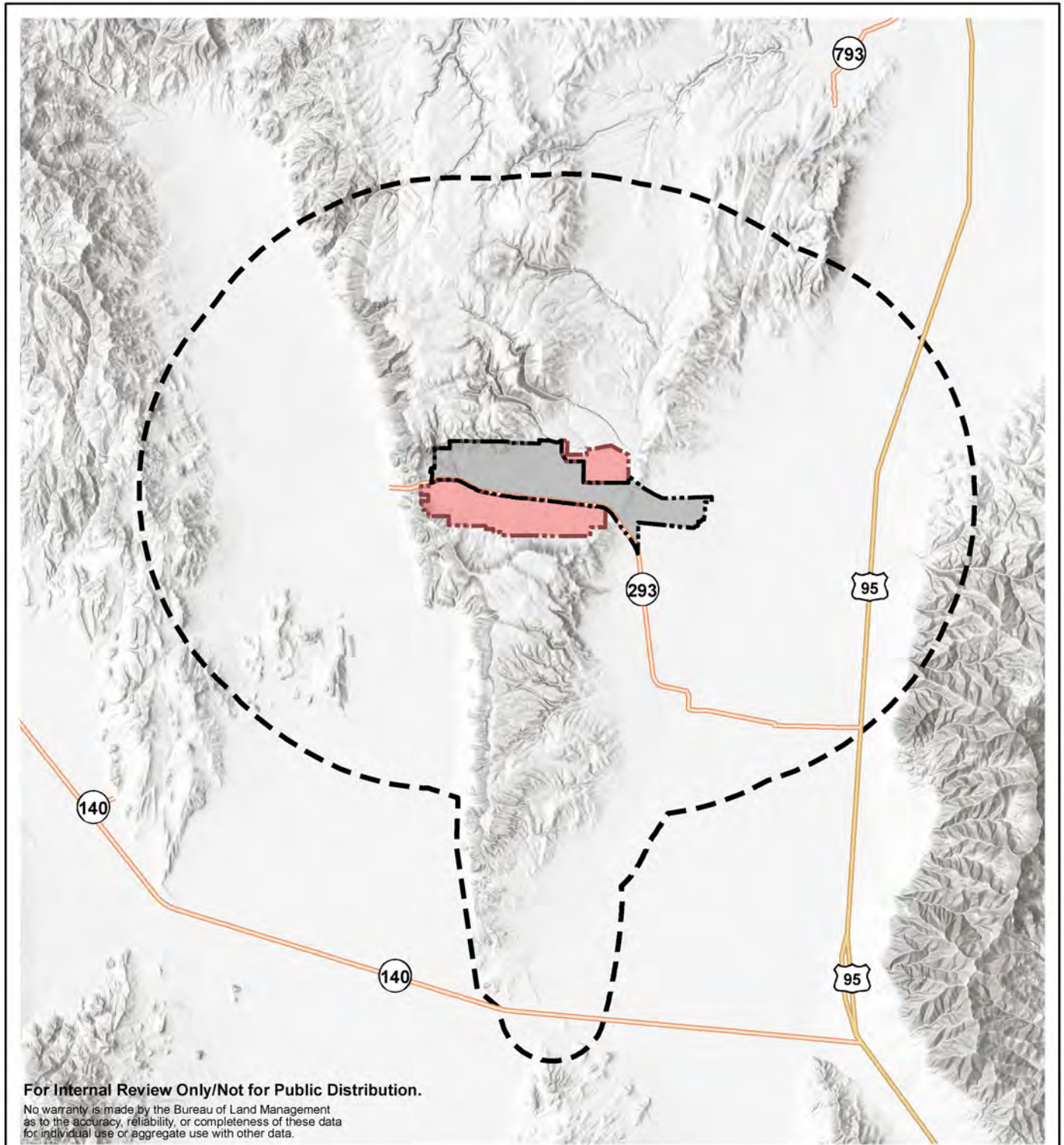
0 0.5 1 Miles

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Figure 4-5.3
Locations of Migratory Bird Density



-  PoO Boundary
-  Proposed Exploration
-  PoO Boundary
-  Raptor Survey Area
-  U.S. Highway
-  State Highway



Source: LNC 2019.

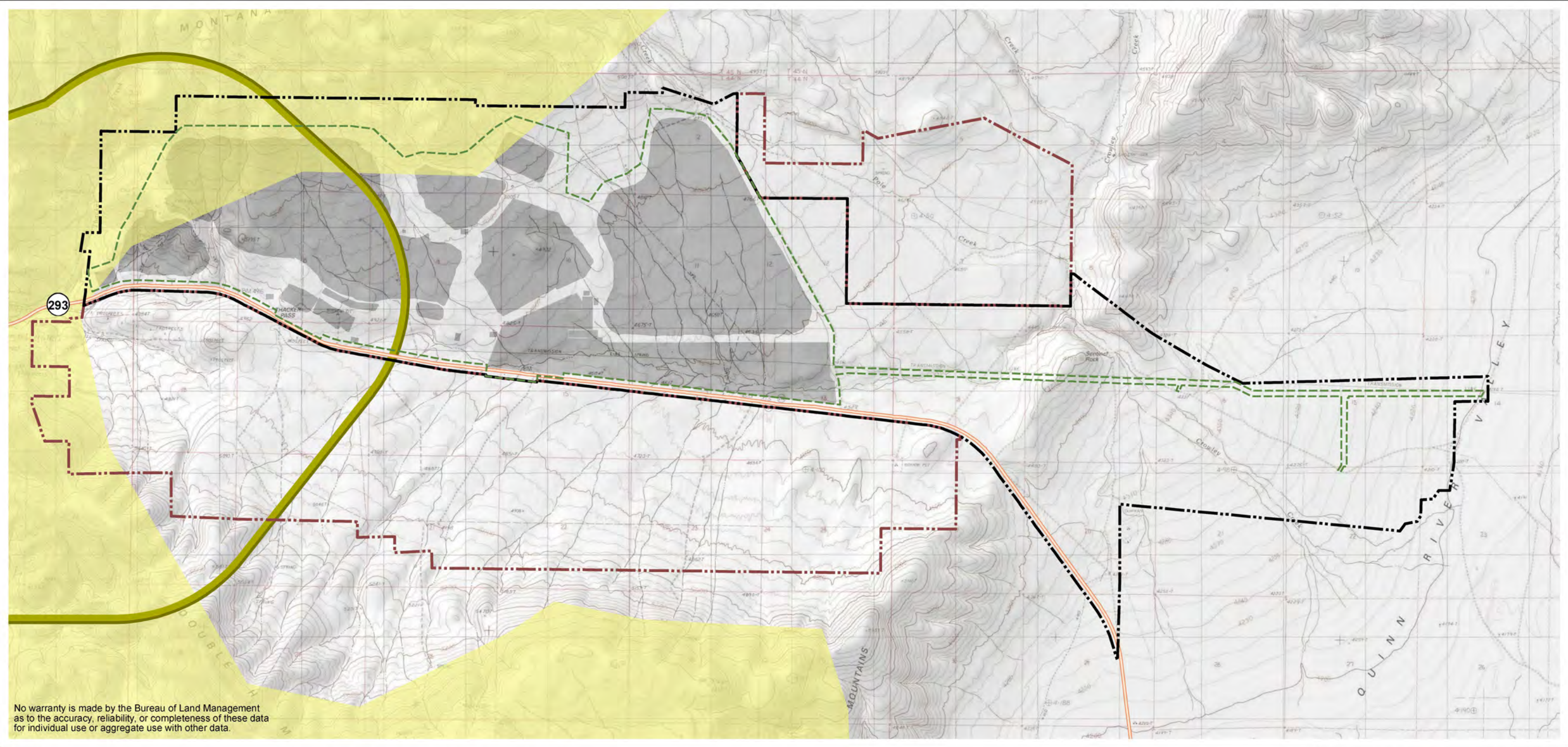


0 2.5 5
Miles

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Figure 4.5-4
Raptor Survey Area within 10 Miles



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- PoO Boundary

Proposed Exploration PoO Boundary

Disturbance Area Boundary

Mining Facilities

State Highway
- California Bighorn Sheep Movement Corridors

Year-round Movements

California Bighorn Sheep Distribution

Year-round



Source: NatGeo 2013; NDOW 2017.

00.51

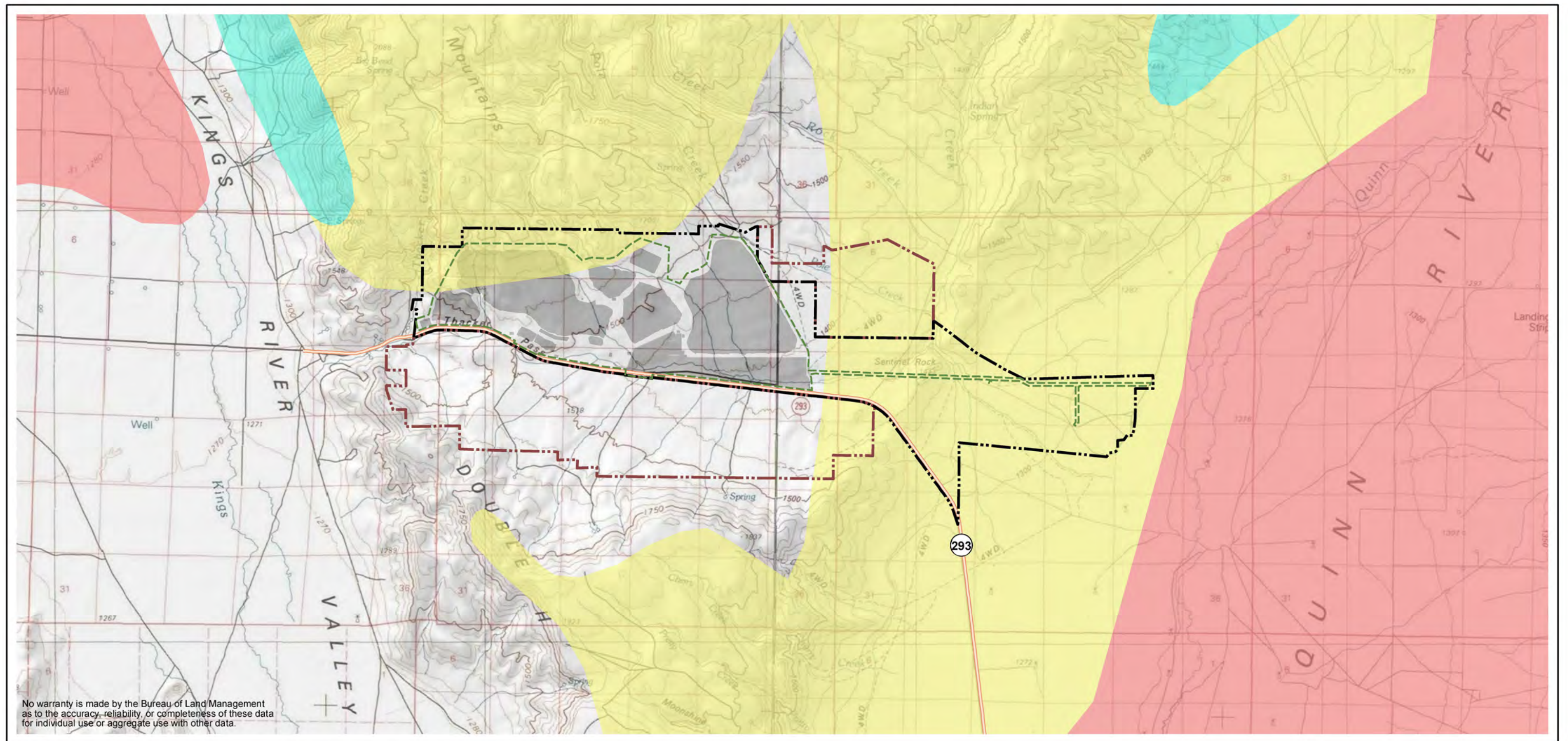
Miles

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Figure 4.5-5
NDOW Mapped Distributions for California Bighorn Sheep

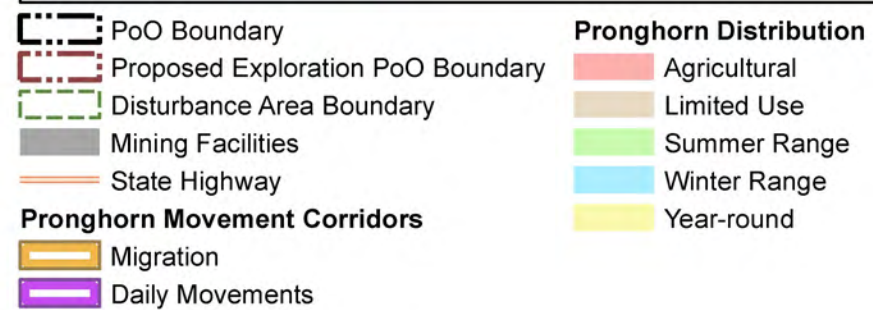
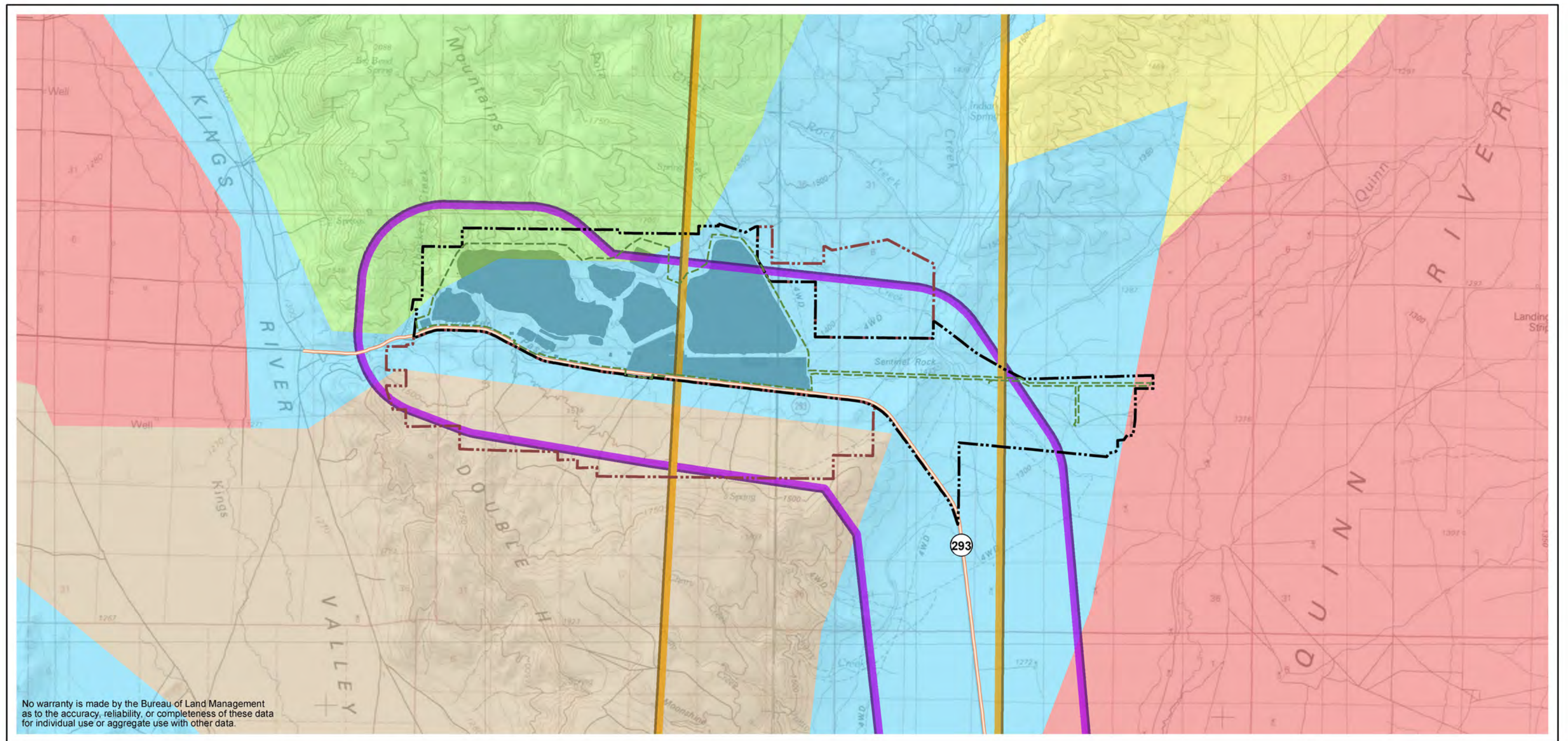


- | | |
|-----------------------------------|-------------------------------|
| PoO Boundary | Mule Deer Distribution |
| Proposed Exploration PoO Boundary | Agricultural |
| Disturbance Area Boundary | Crucial Winter |
| Mining Facilities | Year-round |
| State Highway | |

Source: NatGeo 2013; NDOW 2017.



Figure 4.5-6
NDOW Mapped Distributions for Mule Deer



Source: NatGeo 2013; NDOW 2017.



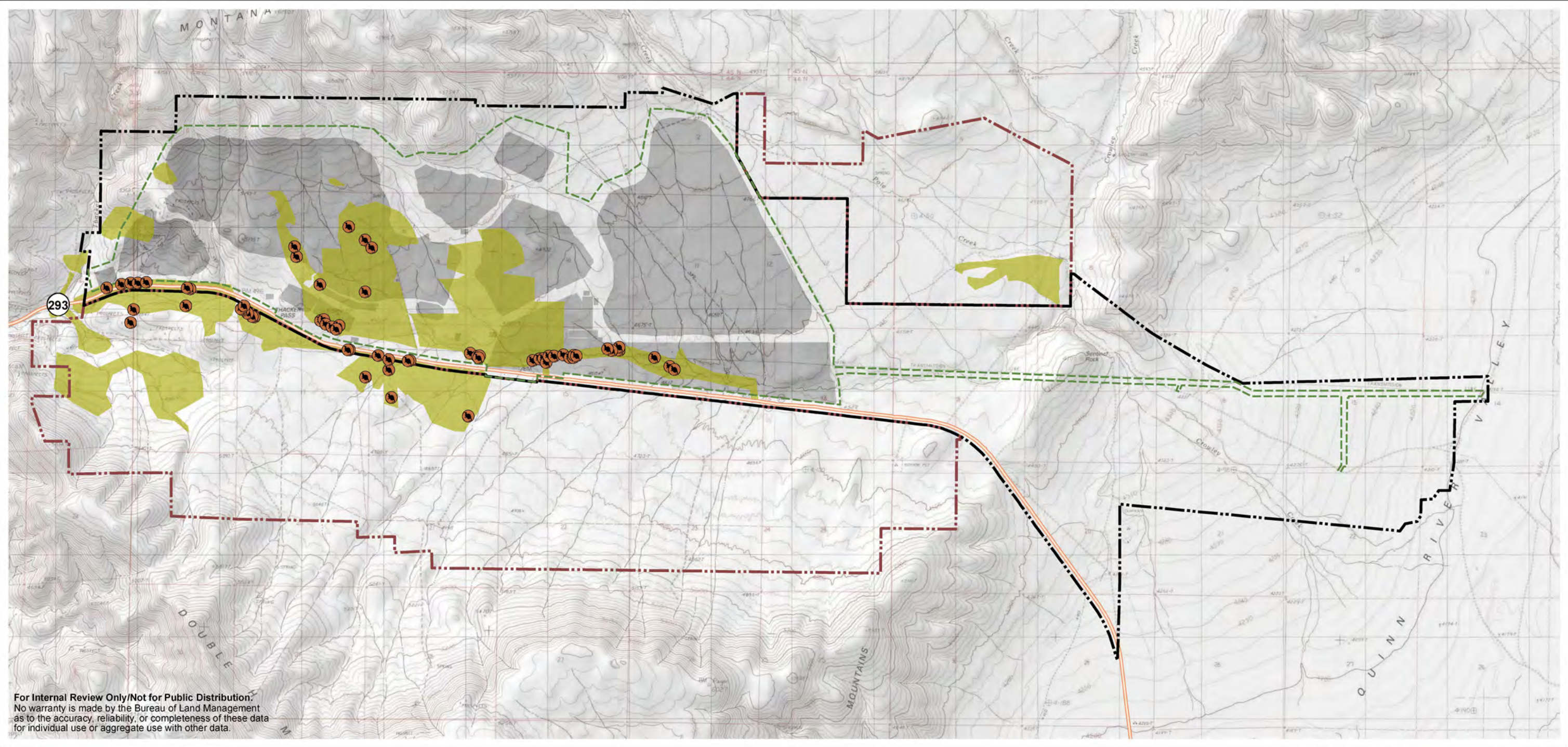
0 0.5 1
Miles

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Figure 4.5-7
NDOW Mapped Distributions for Pronghorn



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- PoO Boundary
- Proposed Exploration PoO Boundary
- Disturbance Area Boundary
- Mining Facilities
- State Highway
- Pygmy Rabbit Habitat
- Historic/Inactive Pygmy Rabbit Burrow

Source: NatGeo 2013; SWCA 2018.

0 0.5 1 Miles

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Figure 4.5-8
Delineated Pygmy Rabbit Habitat and Inactive Burrow Locations

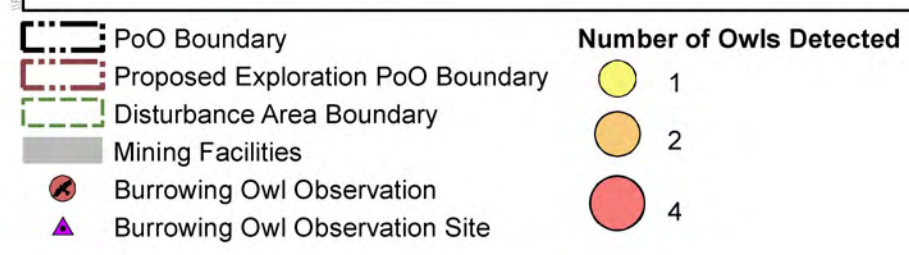
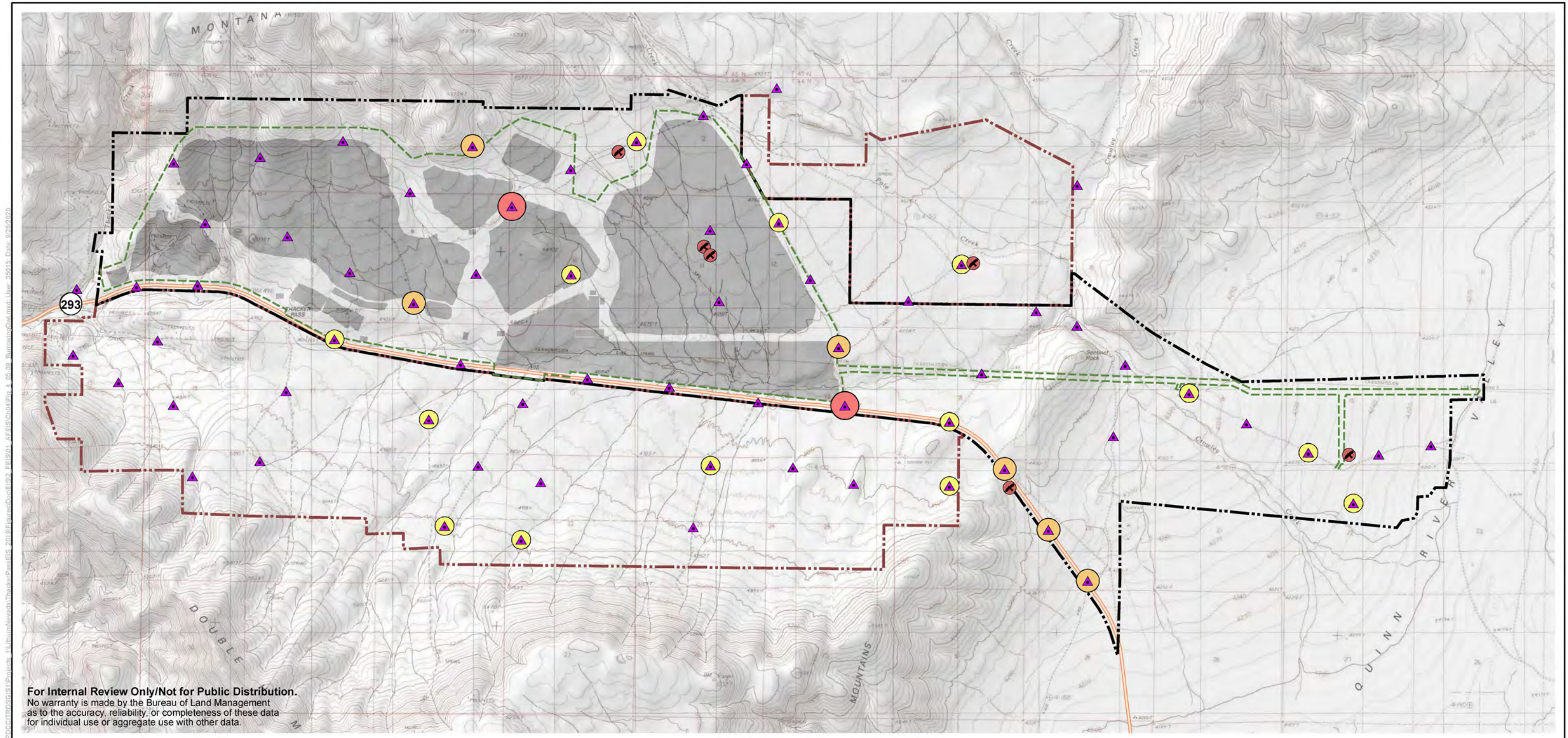
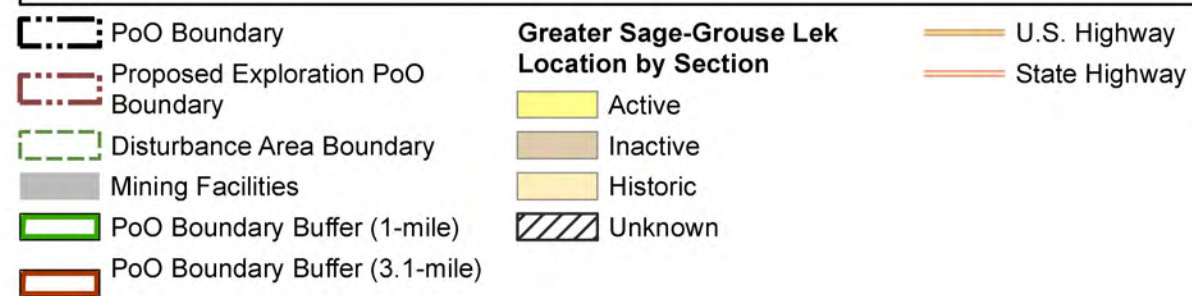
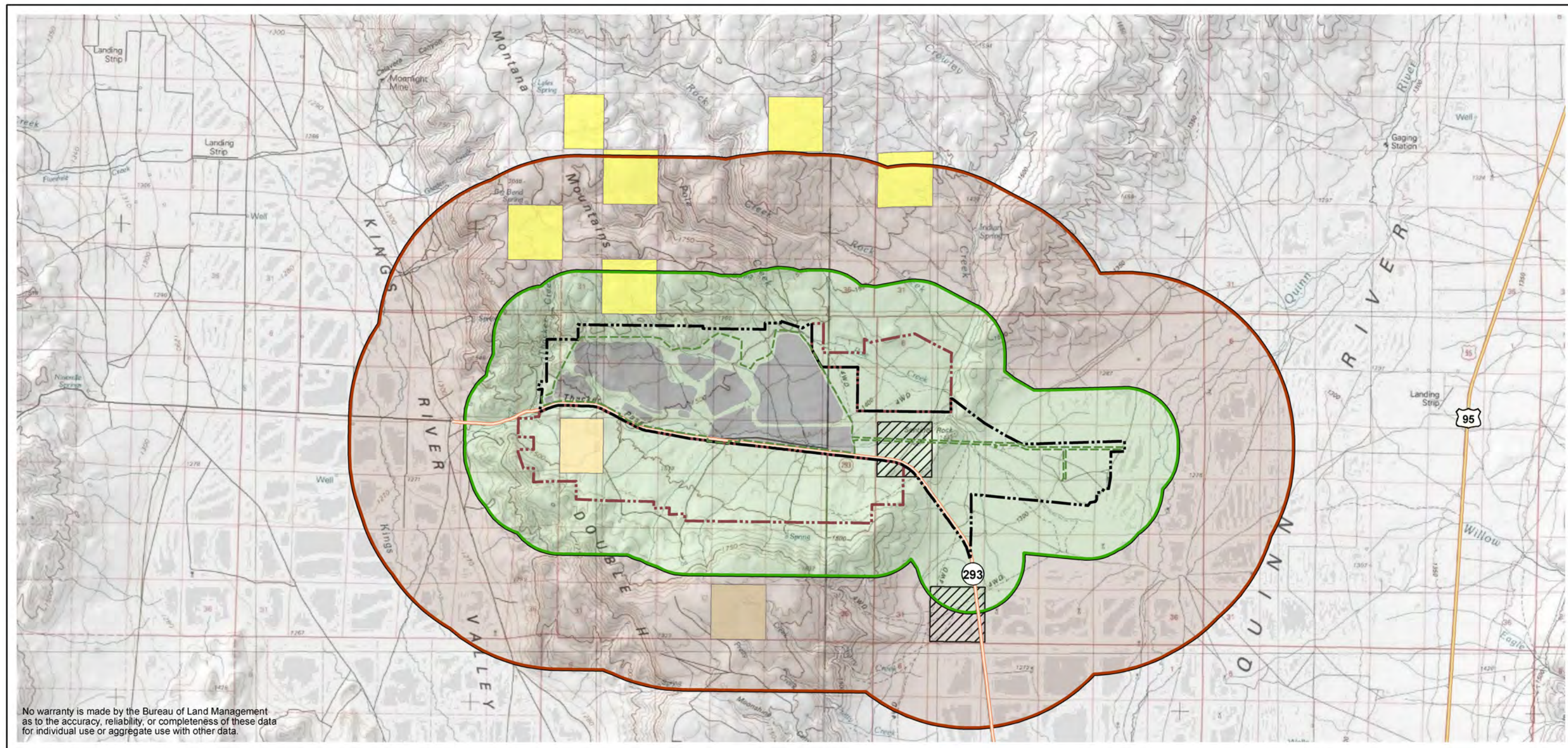


Figure 4.5-9
Western Burrowing Owl observations



Source: NatGeo 2013; NDOW 2020.



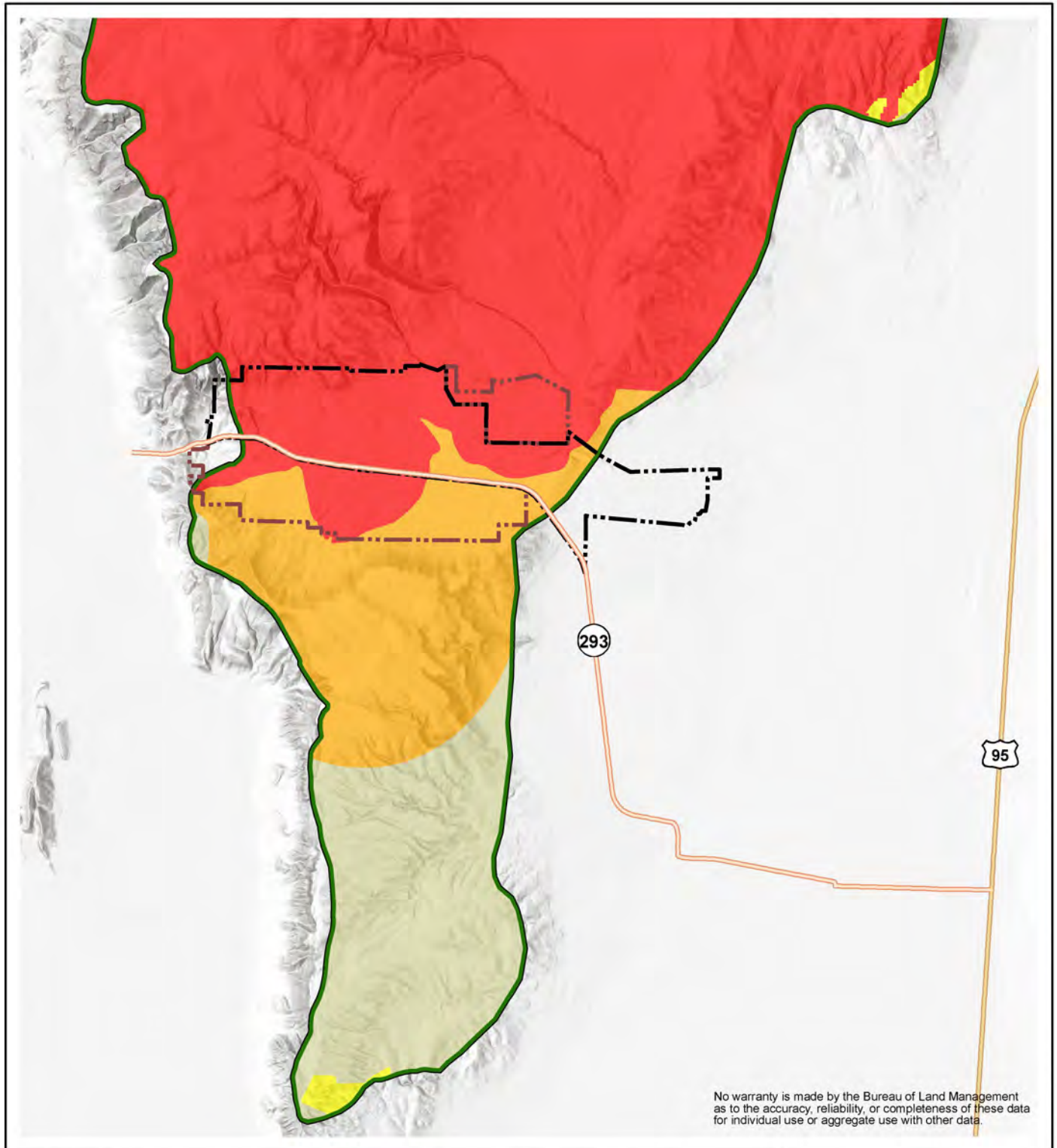
0 1 2
Miles

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Figure 4.5-10
Greater Sage-Grouse Lek sites within the 1-mile and 3.1 mile buffer of the PoO



- | | |
|--|---|
| PoO Boundary | Greater Sage-grouse Habitat Management |
| Proposed Exploration PoO Boundary | PHMA |
| Greater Sage-grouse Population Management Unit | GHMA |
| | Non-Habitat |



Source: BLM 2015.

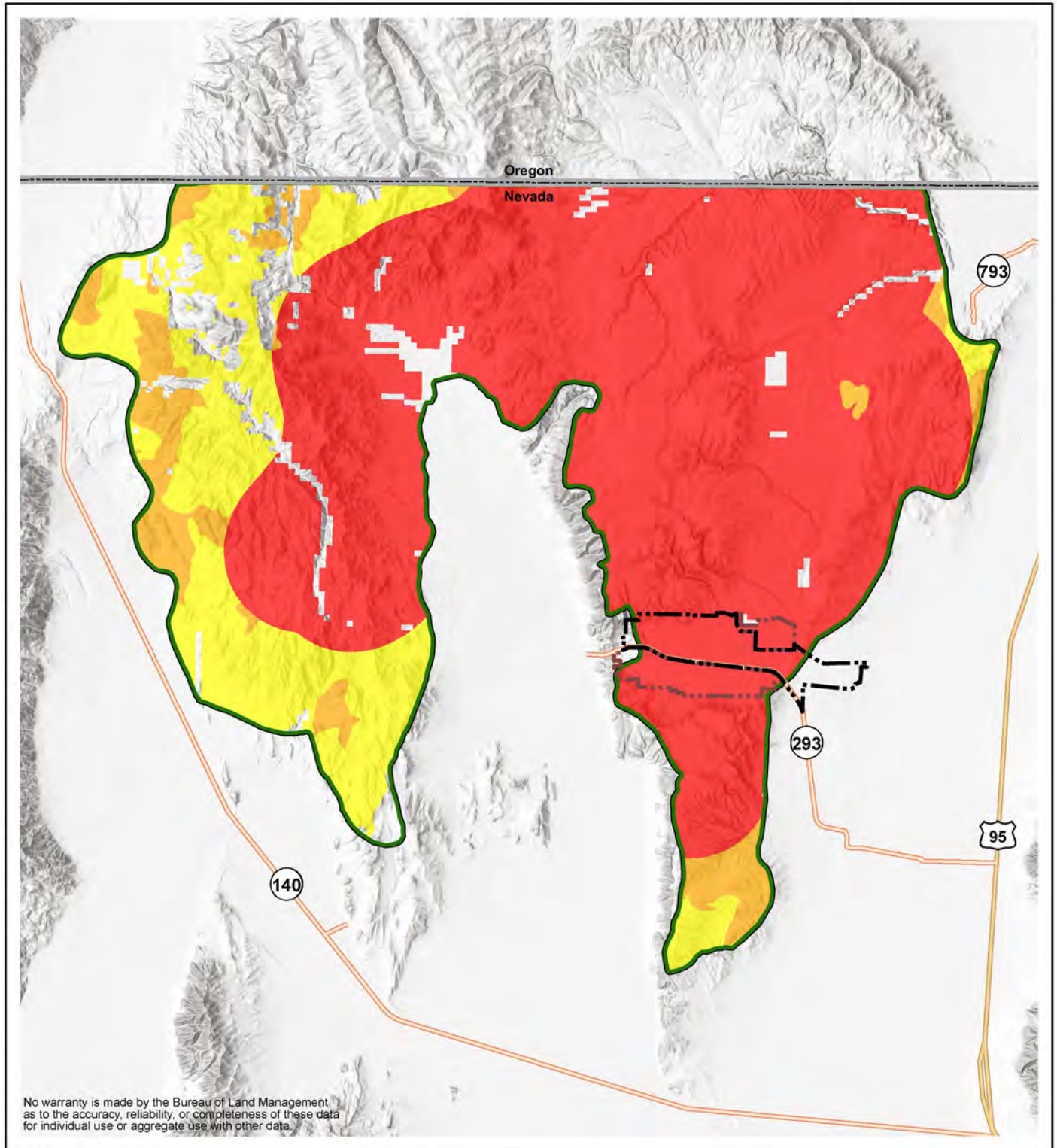


0 2.5 5 Miles

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Figure 4.5-11
2015 GRSG Amendment Habitat Mapping



- | | |
|--|---|
| PoO Boundary | Greater Sage-grouse Habitat Management |
| Proposed Exploration PoO Boundary | PHMA |
| U.S. Highway | GHMA |
| State Highway | OHMA |
| Greater Sage-grouse Population Management Unit | Non-Habitat |

Source: BLM 2019.



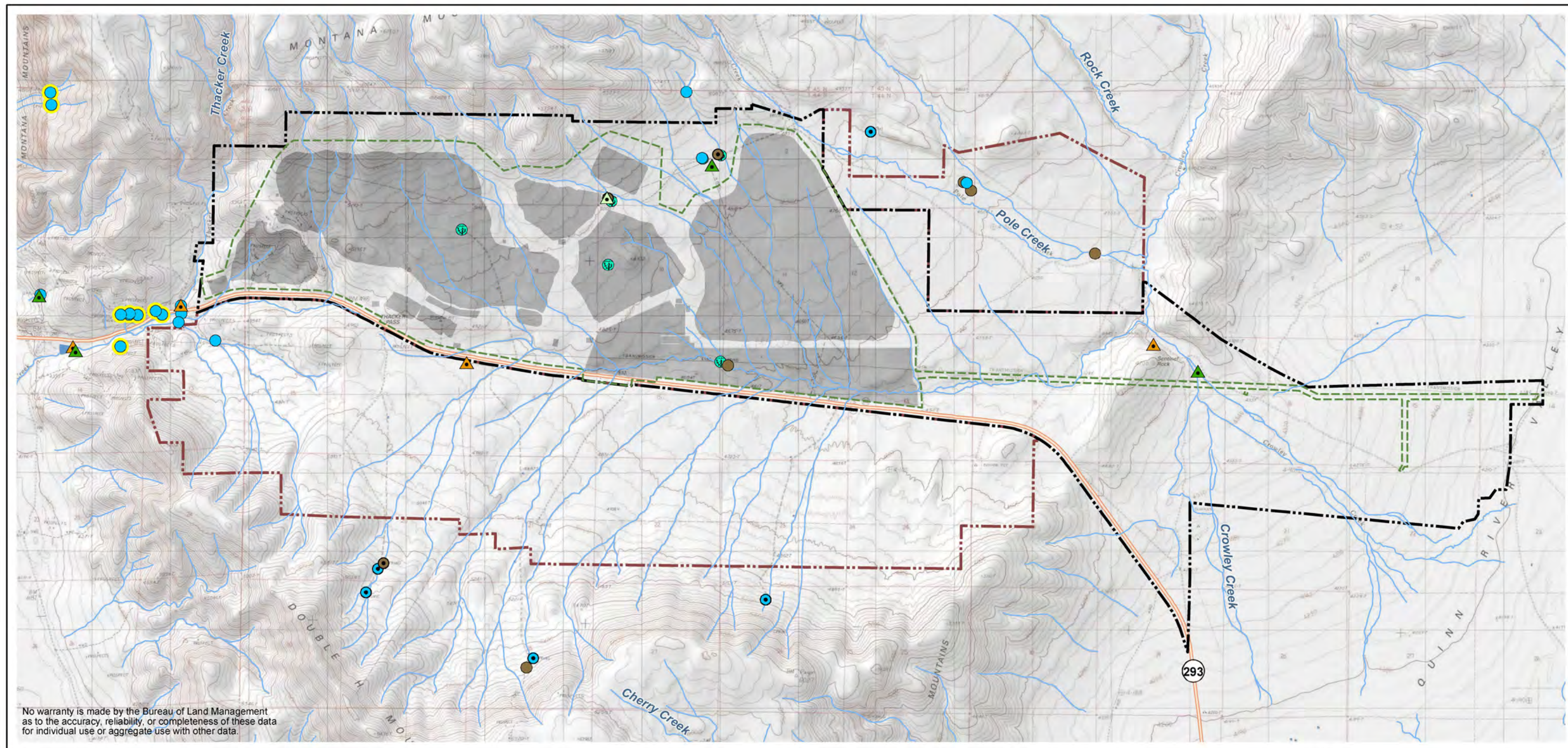
0 2.5 5 Miles

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Figure 4.5-12
2019 GRSG Amendment Habitat Mapping



- | | | |
|-----------------------------------|---------------------------|--|
| PoO Boundary | Wetland | Seep/Spring - Status |
| Proposed Exploration PoO Boundary | Intermittent Stream/Creek | Wet - Developed |
| Disturbance Area Boundary | Anabat Detectors | Wet - Undeveloped |
| Mining Facilities | Spring 2018 | Dry - Developed |
| State Highway | Summer 2018 | Dry - Undeveloped |
| | Fall 2018 | Seep/Spring with Presence of Springsnail |

Source: LNC 2018, 2019; NatGeo 2013.



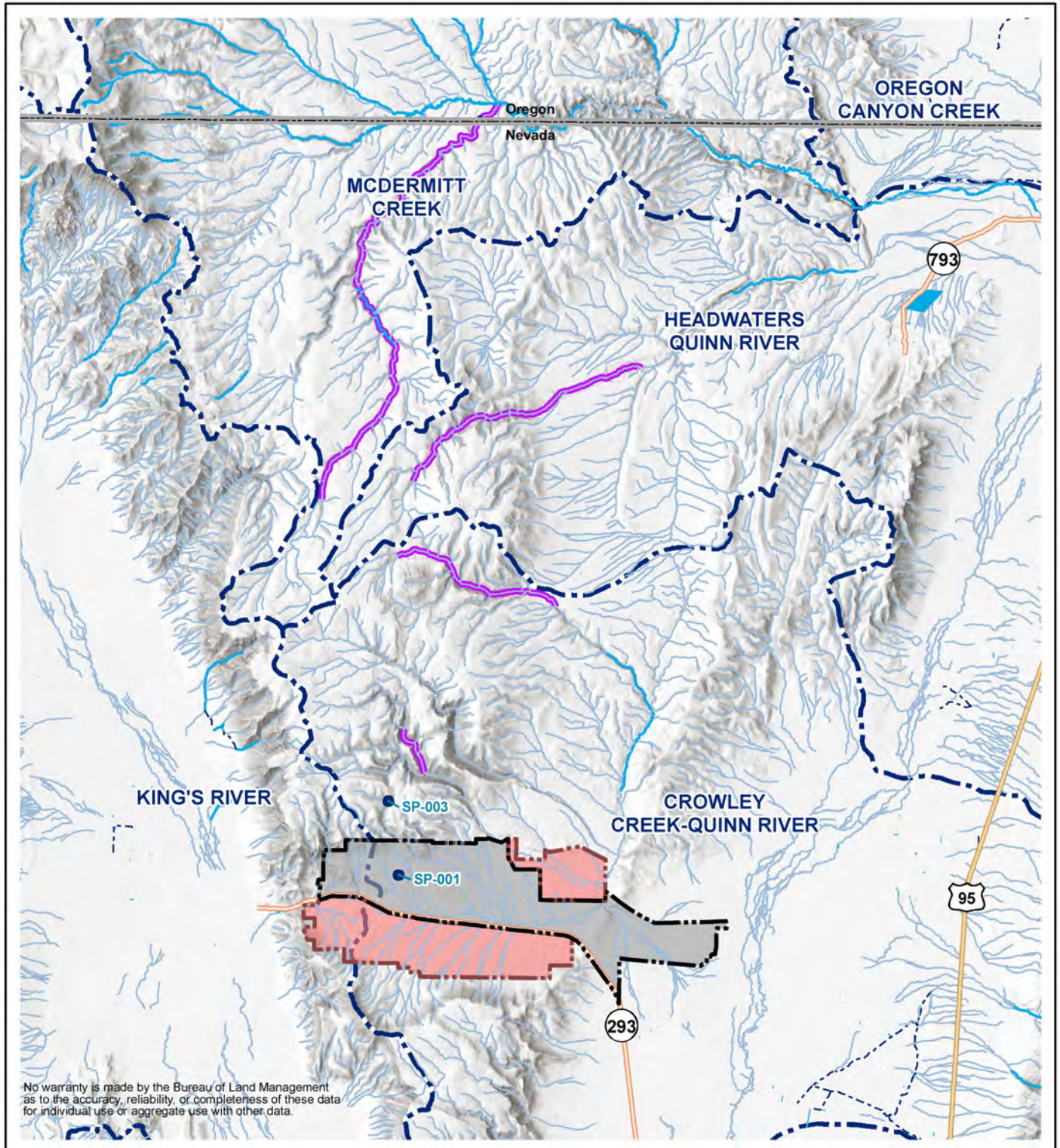
0 0.5 1 Miles

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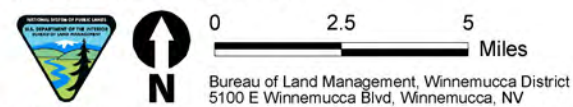


Figure 4.5-13
Locations of Bat Detection Surveys and
Mapped Wetland Habitat in the Project Area



- PoO Boundary
- Proposed Exploration
- Watershed Boundary (HUC-10)
- U.S. Highway
- State Highway
- Lahontan Cutthroat Trout Occupied Reach (2017)
- Perennial Stream
- Intermittent Stream
- Canal or Ditch
- Affected Spring

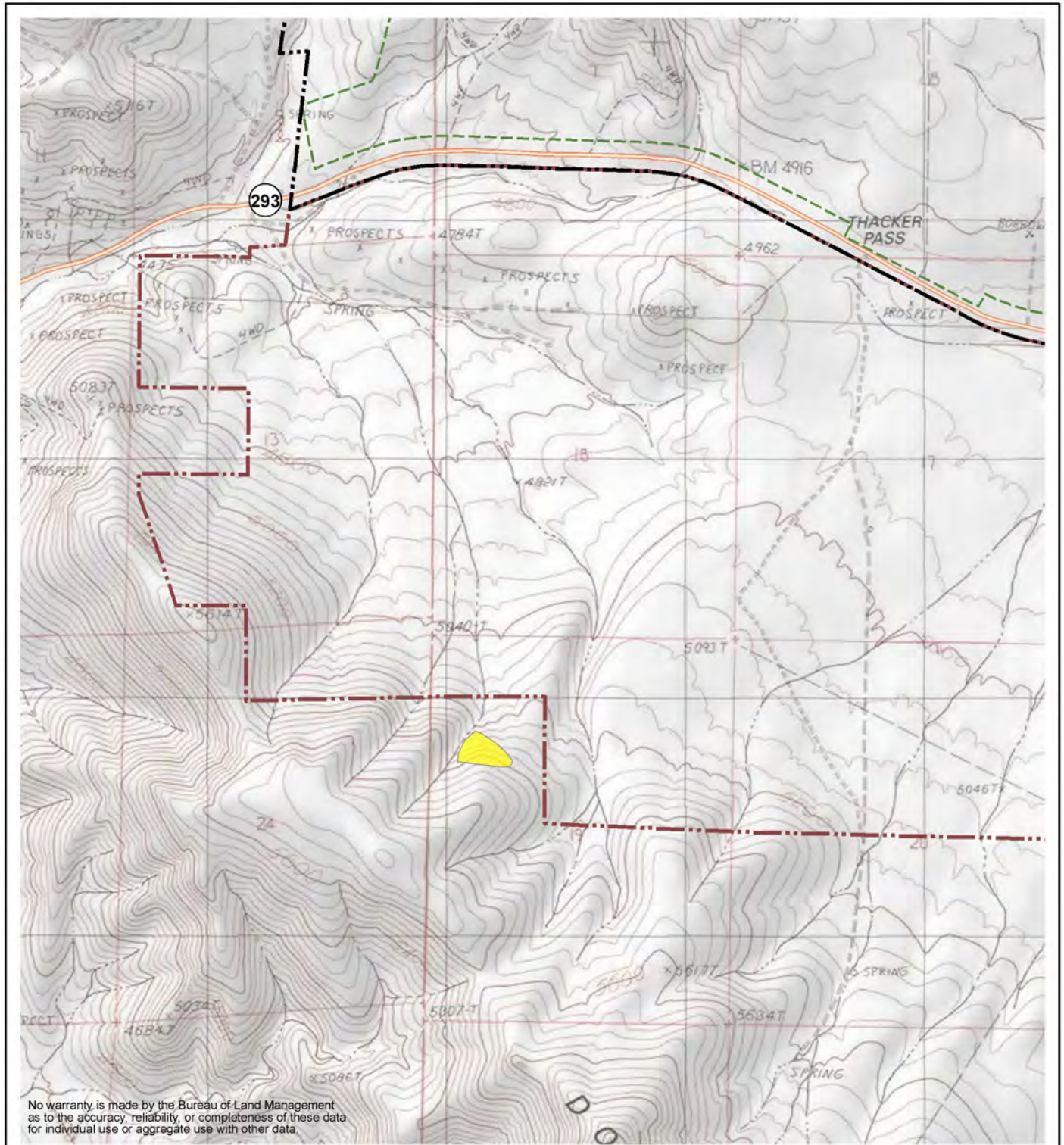
Source: NDOW 2018, NHD 2014.



Date: 9/28/2020

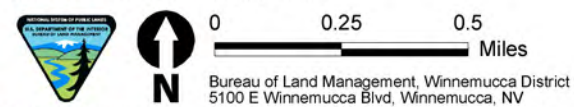


Figure 4.5-14
Lahontan Cutthroat Trout-occupied
Streams near the Project Area



- PoO Boundary
- Proposed Exploration PoO Boundary
- Disturbance Area Boundary
- Crosby's buckwheat
- State Highway

Source: LNC 2019, NatGeo 2013.



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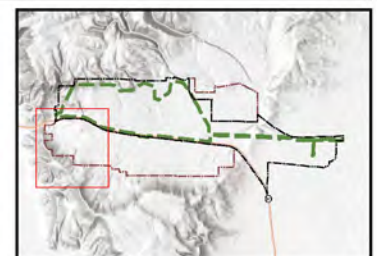
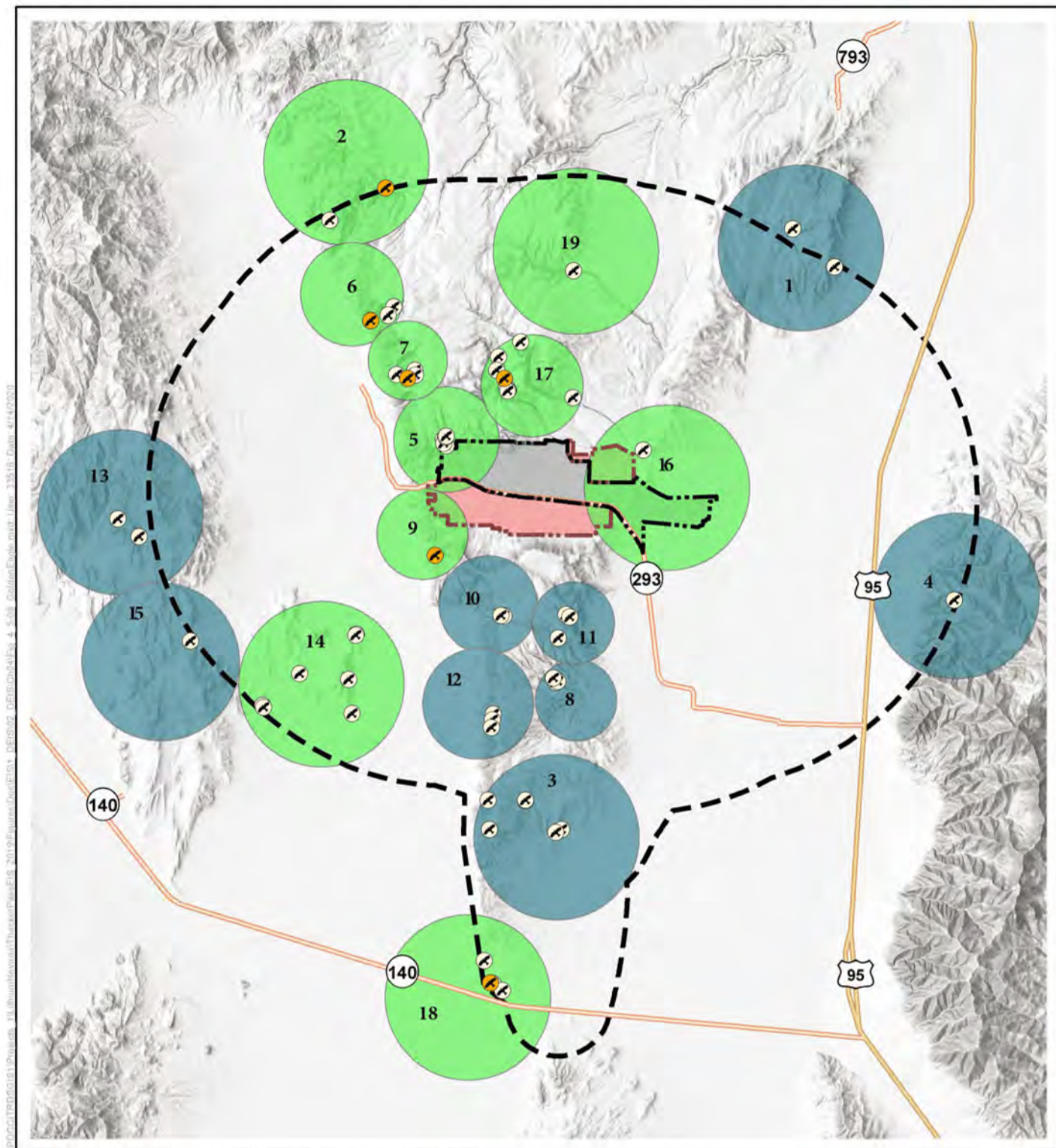
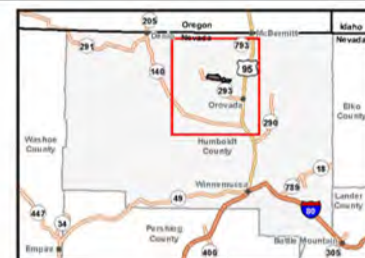


Figure 4.5-15
Mapped Location of Crosby's Buckwheat
from Vegetation Surveys



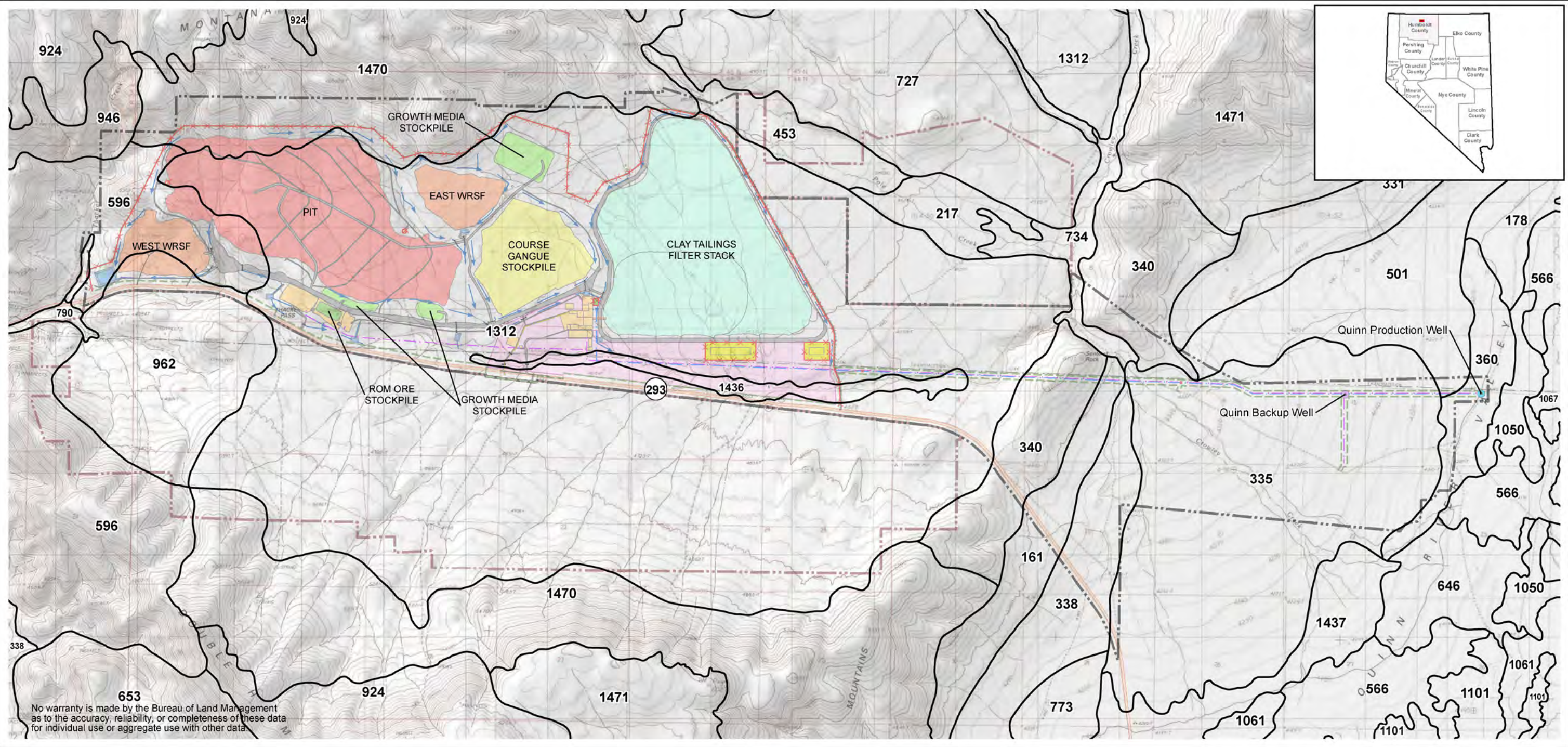
- PoO Boundary
 Proposed Exploration PoO Boundary
 Raptor Survey Area
- Golden Eagle Nest Status (2019)**
 Occupied
 Unoccupied
- Estimated Golden Eagle Territory Status (2019)**
 Occupied
 Unclassified



Source: LNC 2019.



Figure 4.5-16
Golden Eagle Survey Area, Territories and Nests



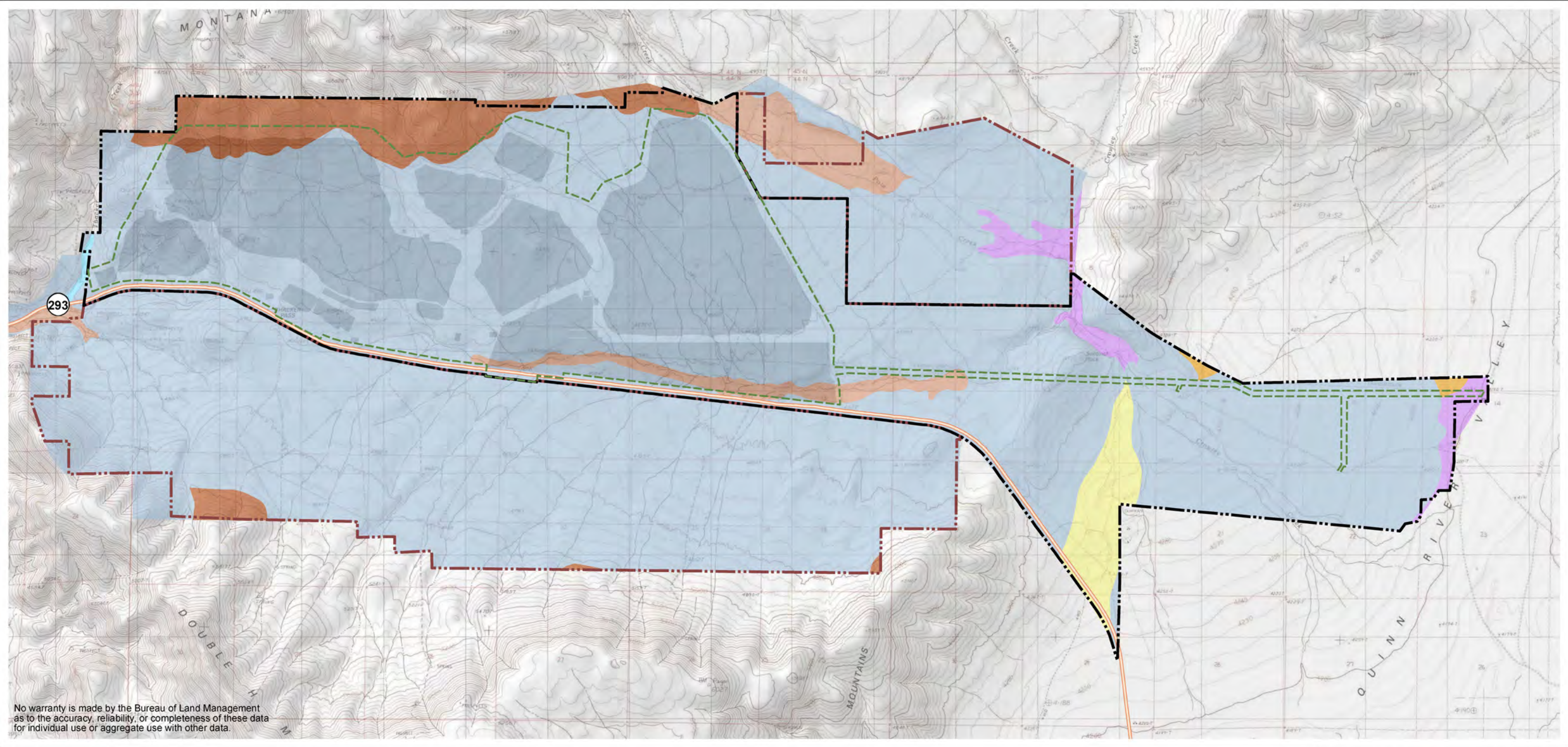
Legend

Soil Map Unit	Roads	Clay Tailings Filter Stack	Run of Mine (ROM) Ore Stockpile
PoO Boundary	State Highway	Course Gangue Stockpile	Waste Rock Storage Facility
Proposed Exploration PoO Boundary	Existing Powerline	Growth Media Stockpile	Emergency Pond
Disturbance Area Boundary	Fence	Mine Facilities	Reclaim Pond
Conveyor Corridor	Power Line	Pit	Sediment Pond
Existing Water Well	Water Line		Future Plant Expansion Area
Proposed Water Well	Fiber Optic Line		
	Stormwater Diversion Channel		
	Culvert		

Symbol	Map Unit Name
161	Bliss-Chiara association
217	Flue loam, 0 to 2 percent slopes 1/
331	McConnel gravely fine sandy loam, 2 to 8 percent slopes
335	McConnel very gravely fine sandy loam, 0 to 2 percent slopes 1/
338	McConnel-Pumper-Whirl complex, 2 to 8 percent slopes
340	Boger-Soughe association
360	Needle Peak silt loam 1/
452	Kingsriver loam, 0 to 2 percent slopes 1/

Symbol	Map Unit Name
501	Enko loamy very fine sand, 0 to 2 percent slopes 1/
596	Trunk-Burita associaiton
727	Dewar-Midraw association
734	Kelk silt loam, occasionally flooded, 0 to 2 percent slopes 1/
790	Rio King loam 1/
946	Soughe-Rubble land complex, 30 to 75 percent slopes
962	Zevadez-Vanwyper association
1312	Dewar-Dacker association
1436	Rodock loam, 0 to 2 percent slopes 1/
1470	Zymans-Burita-Devada association

Figure 4.7-1
Proposed Action Mine Facilities and Soil Map Units



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- | | |
|-----------------------------------|------------------------------------|
| PoO Boundary | Disturbance Response Groups |
| Proposed Exploration PoO Boundary | 025XY001NV: Moist Floodplain |
| Disturbance Area Boundary | 025XY003NV: Loamy Bottom 8-14" |
| Mining Facilities | 23 9: ARTRW8/ACTH7 |
| State Highway | 24 1: ARTRW/ACTH7 |
| | 24 2: ATCO-ARSP5/ELEL5-ACHY |
| | 24 7: ARTR2/HECO26-ACHY |
| | 24 9: ARTRT/LECI4 |

Source: NatGeo 2013, SWCA 2018.

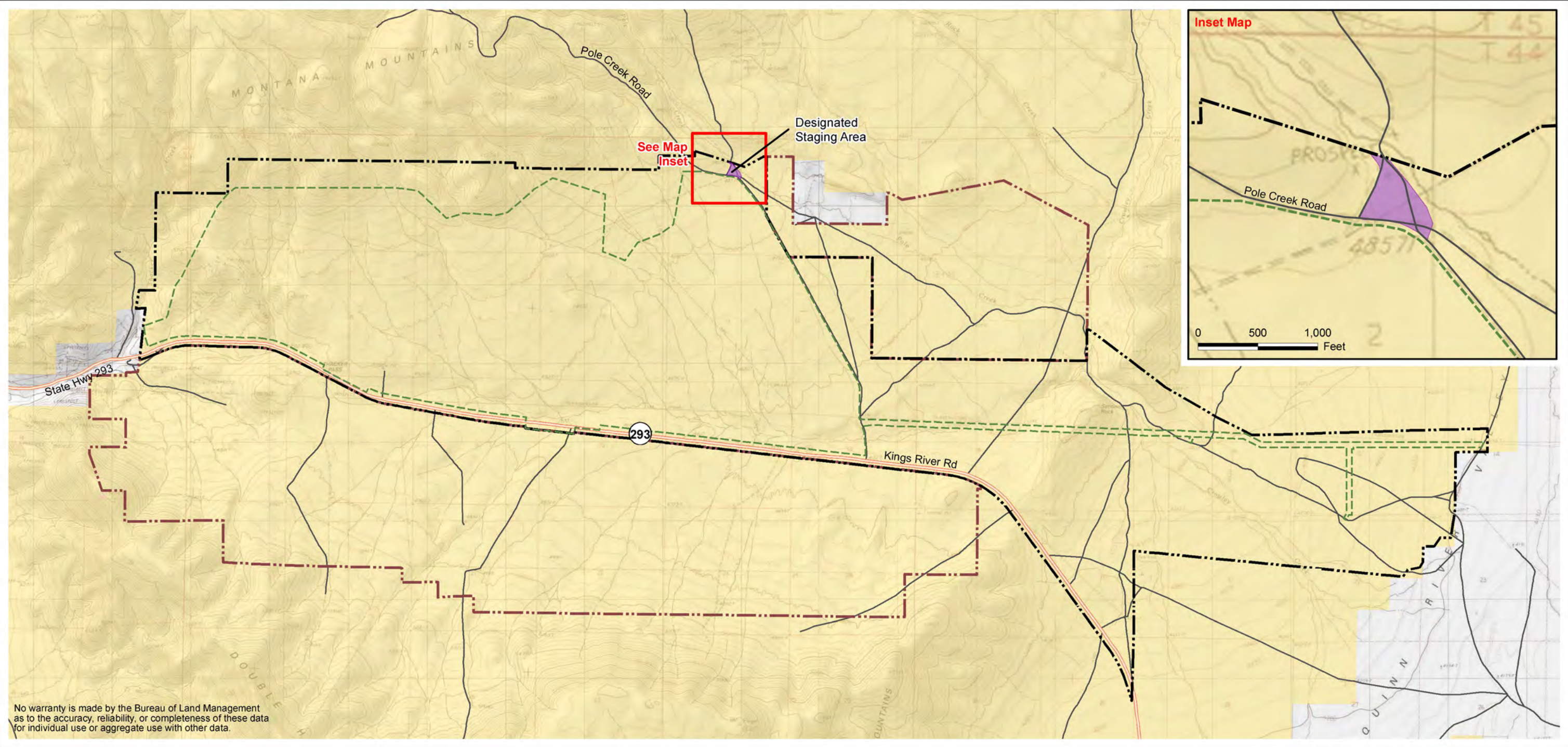
0 0.5 1
Miles

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Figure 4.7-2
Existing Habitat in the Project Area
(Disturbance Response Groups in the Project Area)



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- PoO Boundary
- Proposed Exploration PoO Boundary
- Disturbance Area Boundary
- Designated Livestock and Recreation Staging Area
- State Highway
- Local Road

- Surface Management Agency**
- Bureau of Land Management
 - Private

Source: BLM 2017, 2020.

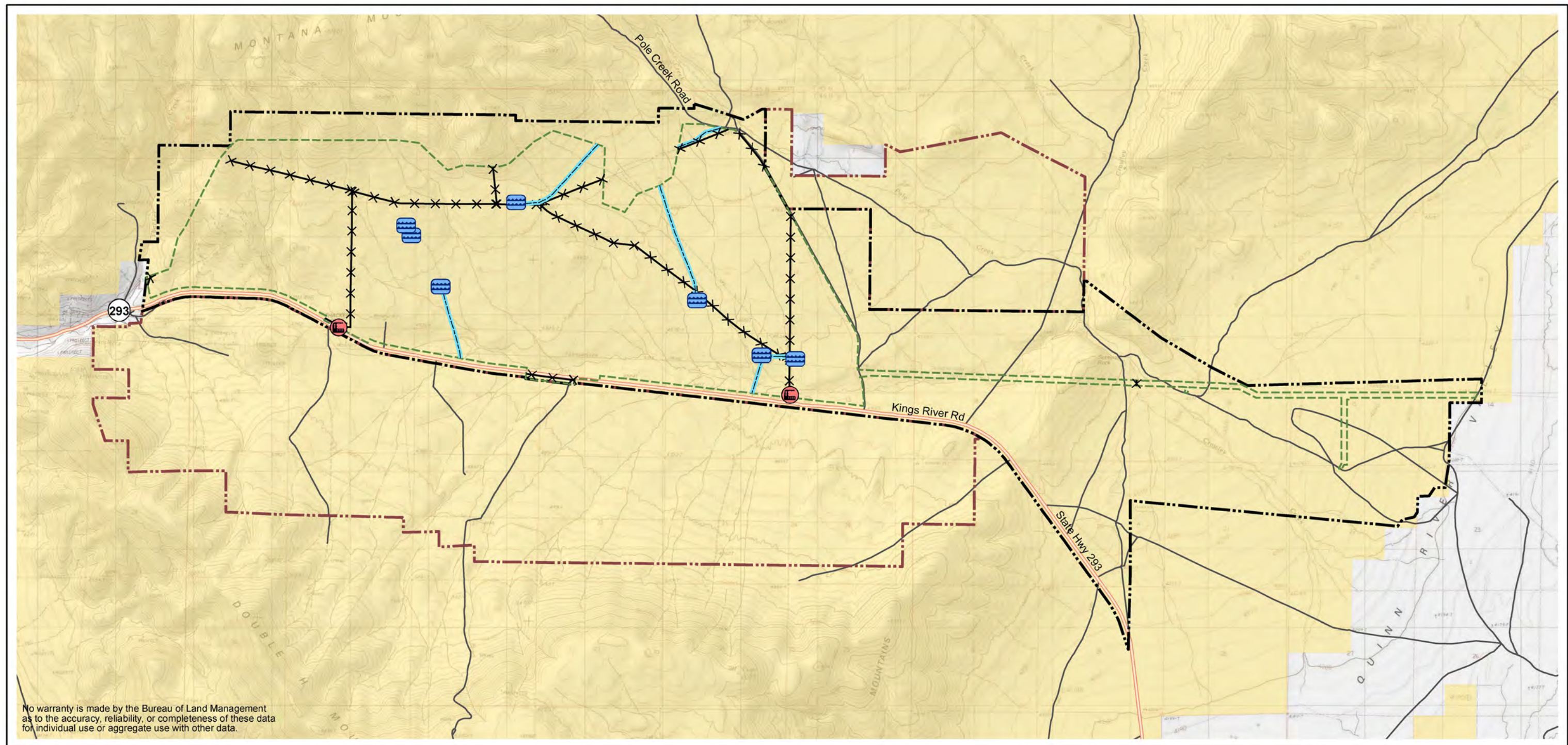
0 0.5 1 Miles

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Figure 4.8-1
Designated Livestock and Recreation Staging Area



- | | | | |
|---------------------------|-----------------------------------|----------------------------------|---------------------------|
| | PoO Boundary | | State Highway |
| | Proposed Exploration PoO Boundary | | Local Road |
| | Disturbance Area Boundary | Surface Management Agency | |
| Range Improvements | | | |
| | Maintenance Facility | | Bureau of Land Management |
| | Water Development/Control | | Private |
| | Fence and/or Enclosure | | |
| | Water Development/Control | | |

Source: BLM 2017, 2020.

Date: 9/28/2020



Figure 4.8-2
Range Improvements

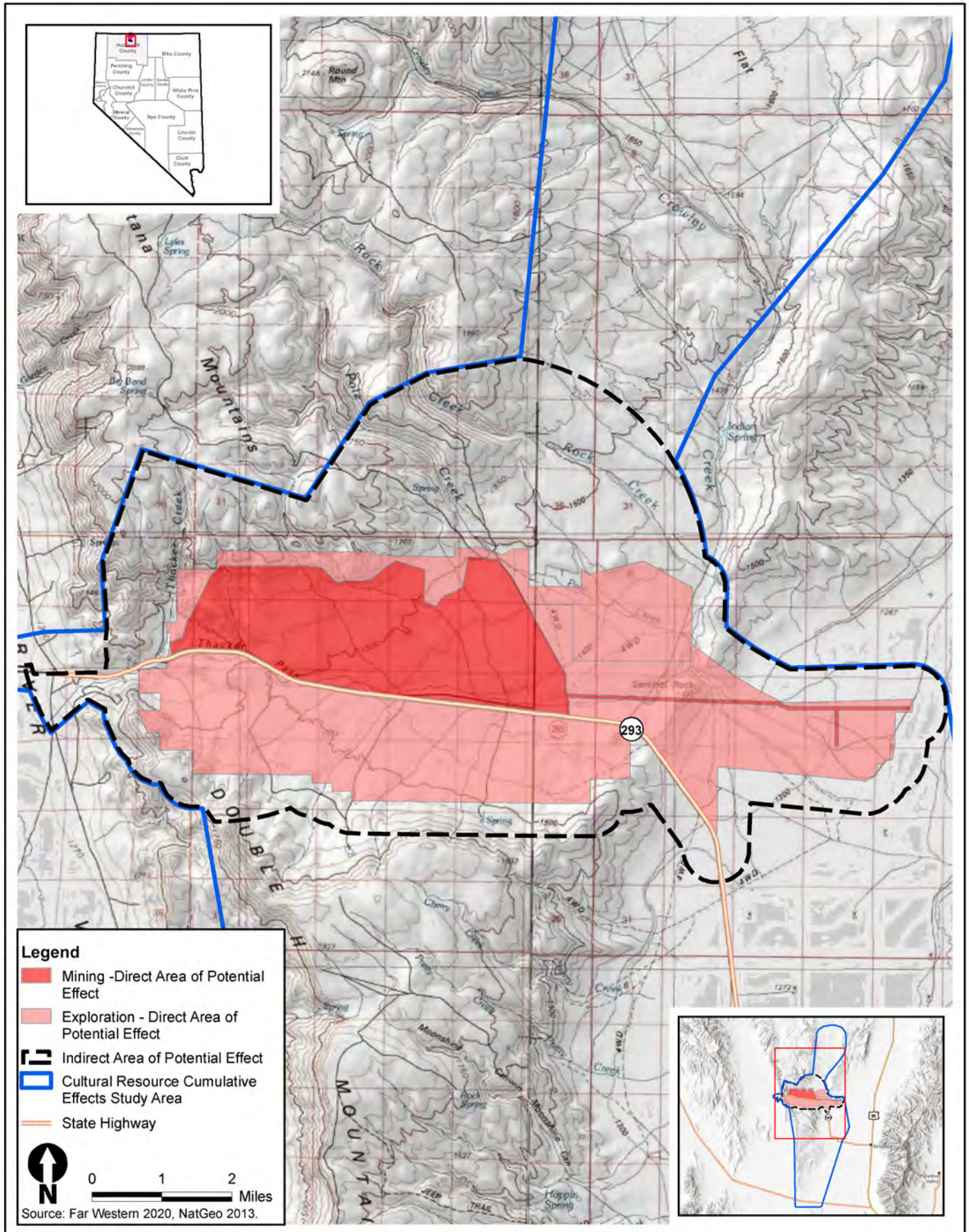
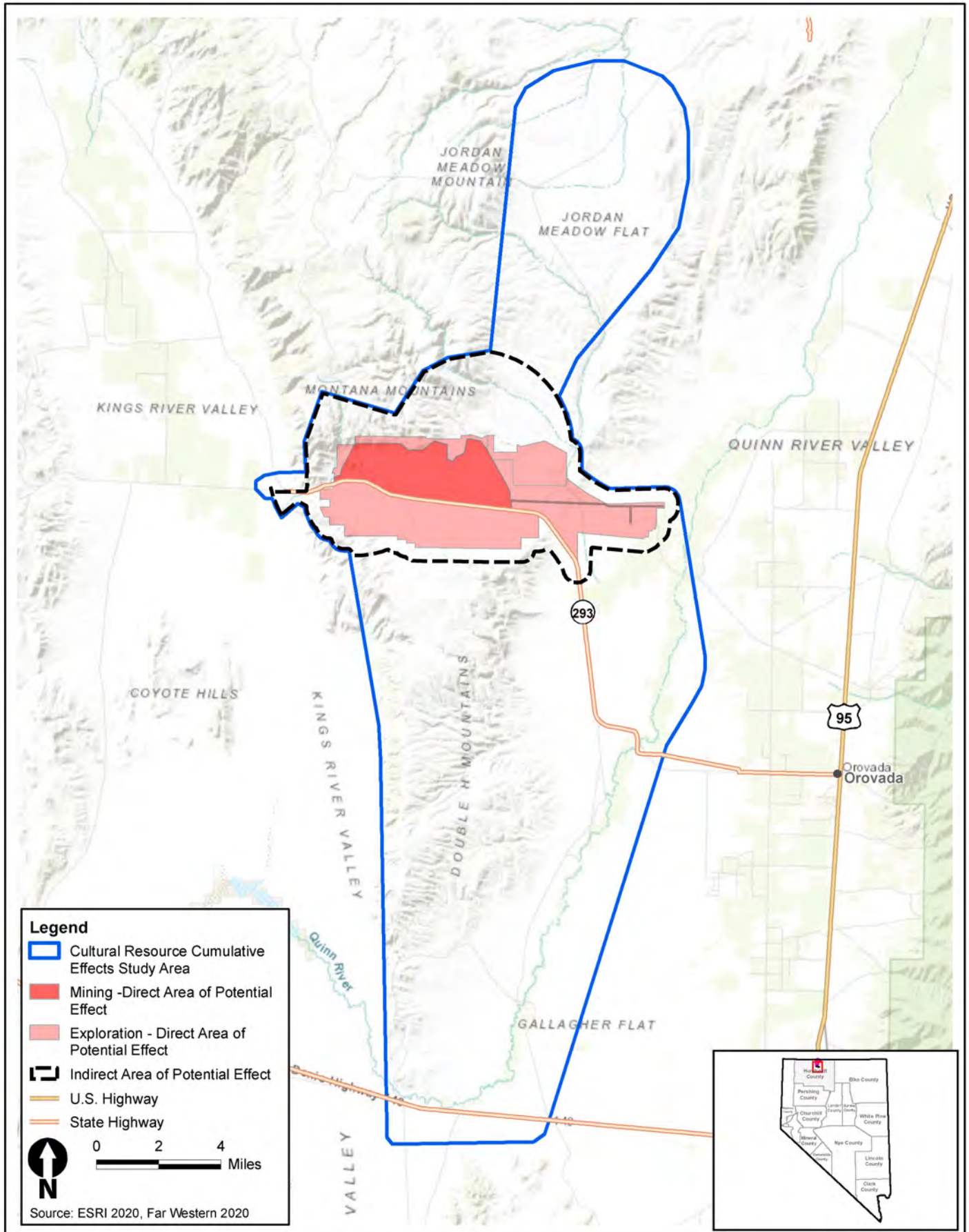


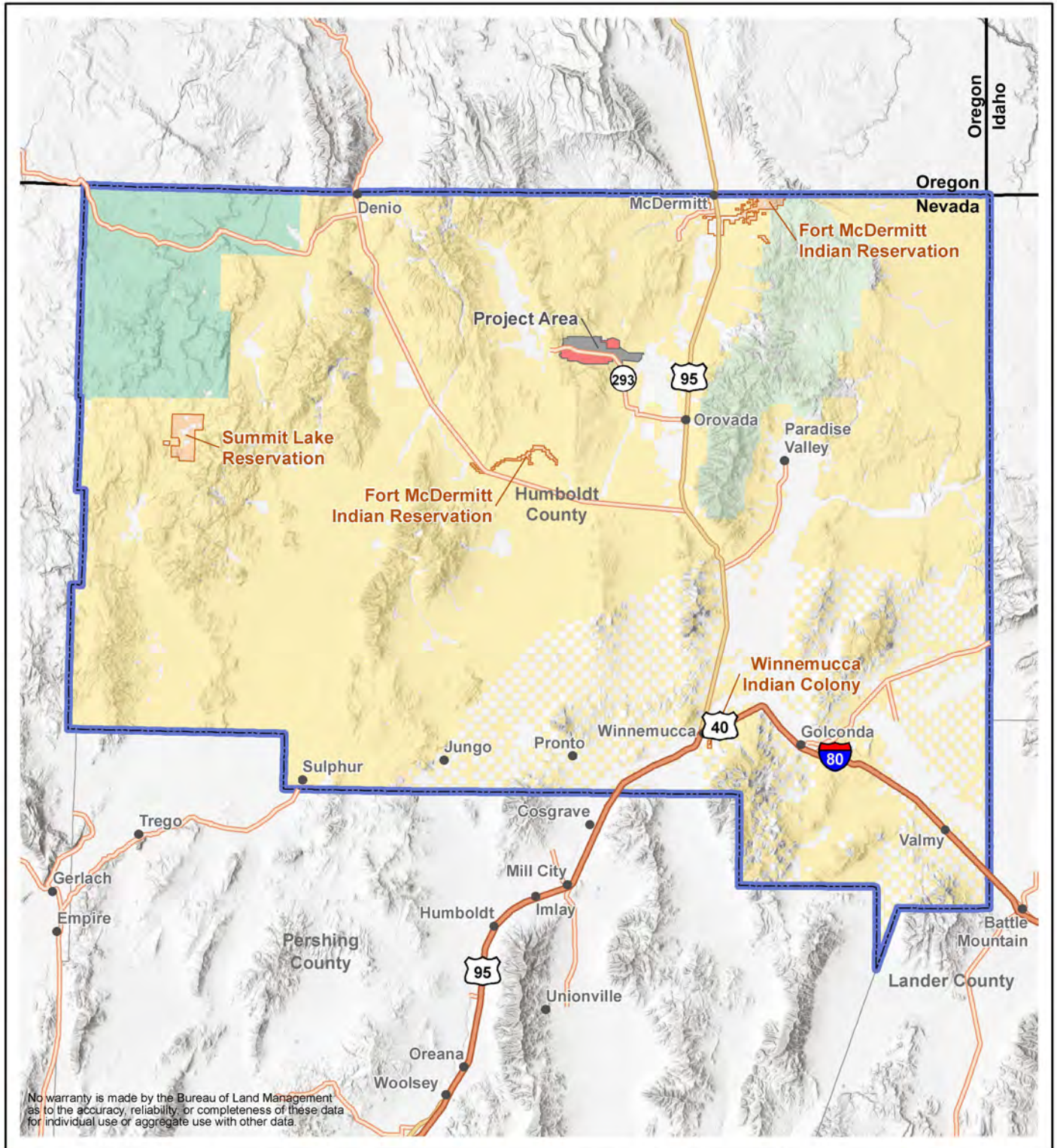
Figure 4.11-1
Mining, Exploration, and Indirect
Areas of Potential Effect



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Figure 4.11-2
Cultural Resources Cumulative Effects Study Area

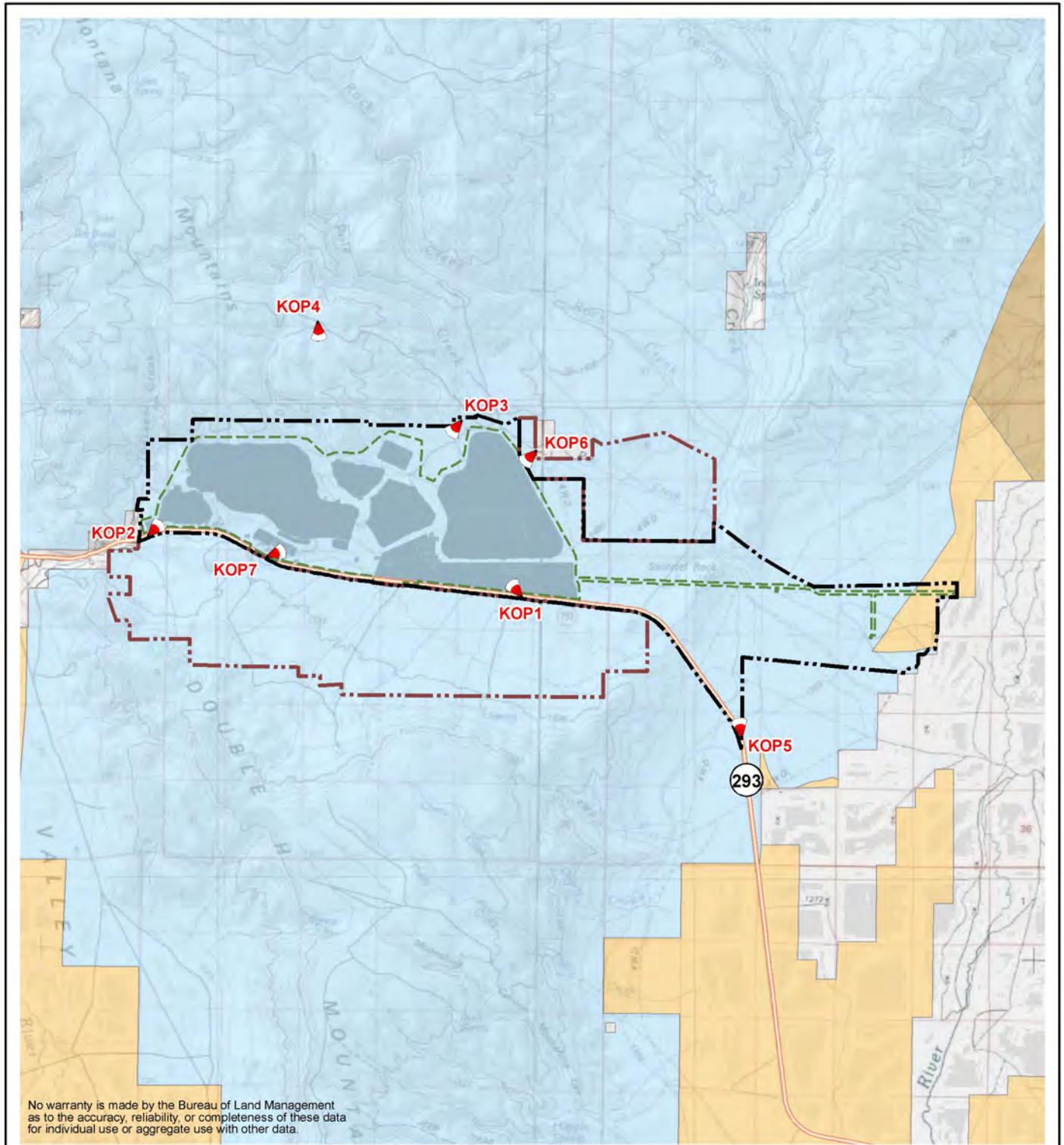


- | | | |
|---|---|---|
| <ul style="list-style-type: none"> Proposed Mine PoO Boundary Proposed Exploration PoO Boundary Socioeconomic Study Area Native Community | Surface Management Agency <ul style="list-style-type: none"> Bureau of Land Management Tribal Land U.S. Forest Service U.S. Fish and Wildlife Service Private | <ul style="list-style-type: none"> City or Town Interstate U.S. Highway State Highway |
|---|---|---|



Source: BLM 2017, U.S. Census Bureau 2017.

**Figure 4.12-1
Socioeconomic Study Area**



- PoO Boundary
- Proposed Exploration PoO Boundary
- Disturbance Area Boundary
- Mining Facilities
- State Highway

- Key Observation Point (KOP)
- Visual Resource Management**
- Class I
- Class II
- Class III
- Class IV



Source: BLM 2015, LNC 2020.

0 0.5 1
Miles

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Figure 4.15-1
Visual Resource Management Classifications