APPENDIX A

FEDERAL LAWS, STATUTES, REGULATIONS, AND EXECUTIVE ORDERS TO WHICH THE ROCK HOUSE EA COMPLIES

Federal Laws and Statutes

- Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761)
- The Endangered Species Act of 1973 (P.L. 85-624; 16 U.S.C. 661, 664 1008)
- The National Environmental Policy Act of 1969 (NEPA, P.L. 91-190; 42 U.S.C. 4321)
- The Clean Air Act (as amended by P.L. 92-574; 42 U.S.C. 4901)
- Section 303, Title 49 U.S. Code (formerly known as Section 4(f) of the Department of Transportation Act of 1966)
- Farmland Protection Policy Act (P.L. 97-98 and 7 CFR Part 658)
- Section 201(a), Federal Land Policy and Management Act of 1976 (P.L. 94-579; 43 U.S.C. 1701 et seq.)
- The Land and Water Conservation Fund Act (P.L. 88-578)
- Section 106, National Historic Preservation Act of 1966 (P.L. 89-665; 16 U.S.C. 407(f))
- American Indian Religious Freedom Act (920 Stat. 469; U.S.C. 1996)
- The Archaeological and Historic Data Preservation Act of 1974 (P.L. 86-253, as amended by P.L. 93291; 16 U.S.C. 469)
- Native American Graves Protection and Repatriation Act (P.L. 101-601)
- Migratory Bird Treaty Act of 1918
- Federal Onshore Oil and Gas Leasing Reform Act of 1987
- Energy Policy Act of 2005
- Mineral Leasing Act of 1920

Executive Orders

- Executive Order 11988, Floodplain Management (43 CFR 6030)
- Executive Order 11990, Protection of Wetlands
- Executive Order 12372, Intergovernmental Review of Federal Programs
- Executive Order 11514, Protection and Enhancement of Environmental Quality
- Executive Order 11296, Flood Hazard Evaluation Guidelines
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Executive Order 12898, Federal Actions to address Environmental Justice in Minority Populations and Low-Income Populations
- Executive Order 13007, Indian Sacred Sites
- Executive Order 13186, The Responsibilities of Federal Agencies to Protect Migratory Birds
- Executive Order 13212, Actions to Expedite Energy-Related Projects

Federal Regulations

- 40 CFR §1500-1508, CEQ implementation of NEPA
- 36 CFR §800, as amended, Protection of Historic Properties
- 7 CFR §658, as amended, Prime and Unique Farmlands
- 43 CFR §2800, as amended, Rights-of-Way Principles and Procedures
- 43 CFR §2880, as amended, Rights-of-Way Under the Mineral Leasing Act
- 43 CFR §3160, as amended, Onshore Oil and Gas Operations

APPENDIX B

INTERDISCIPLINARY TEAM RESOURCE REVIEW

INTERDISCIPLINARY TEAM ANALYSIS RECORD CHECKLIST

Project Title: Enduring Resources' Rock House Proposal

NEPA Log Number: UT-080-07-671

File/Serial Number:

Project Leader: Stephanie Howard

DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for significant impact analyzed in detail in the EA; or identified in a DNA as requiring further analysis
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section C of the DNA form.

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Air Quality	Compressors are not proposed. Air quality impacts from the projected levels of emission are expected to be negligible. Minimum quantities of dust emissions are anticipated because the majority of the traffic from this proposal would be during the construction phase. Increased traffic during construction and drilling activities would be temporary. During the production phase traffic would be limited to an average of one vehicle per day. *Trinity and Nicholls. Air Quality Assessment Report – Vernal and Glenwood Springs Resource Management Plans. 2004.*	Stephanie Howard	2/15/06
NI	Areas of Critical Environmental Concern	No existing ACECs are present per the Book Cliffs RMP. A portion of the project falls within the Vernal FO Draft RMP Alt. A White River ACEC. The entire project falls within the Vernal FO Draft RMP Alt. C White River ACEC.	Kim Bartel	2/16/05
NI	Cultural Resources	Project specific surveys will be completed for the proposed wells, roads, and pipelines.	Blaine Phillips	2/15/06
NP	Environmental Justice	According to the EPA Region VIII, State of Utah, Environmental Justice Map, the region has been categorized as a minority population area of 10-20% and a poverty population area of 10-20%. No minority or economically disadvantaged communities or populations are present which could be affected by the proposed action or alternatives. (http://www.epa.gov/enviro/ej, 8/25/05)	Stephanie Howard	2/15/06

Determination	Resource	Rationale for Determination*	Signature	Date
NP	Farmlands (Prime or Unique)	None Present per Book Cliffs RMP.	Stephanie Howard	2/15/06
PI	Floodplains	A portion of the project falls within the Saddletree Draw 100-year floodplain. A portion of the project falls within the Atchees wash 100-year floodplain.	Stan Olmstead	2/16/06
PI	Invasive, Non-native Species	Potential for invasive and annual weeds to occur or increase in density.	Delbert Clark	2/17/06
NI	Native American Religious Concerns	No TCPs are known in the project area.	Blaine Phillips	2/16/06
PI	Threatened, Endangered or Candidate Plant Species	Known habitat for *Sclerocactus wetlandicus* (Uinta Basin Hookless Cactus) exists nearby. Recommend survey during flowering period (May), especially along Atchees Wash. Habitat survey, conducted by Buys & Associates Nov. 2005, determined that habitat for *Penmstemon scariosus* var. *albifluvis* (White River beardtongue) exists within the project area. Recommend avoidance of potential habitat, or on-site clearance surveys during flowering period (May). No other T&E plant species occur within the Project Area.	Stephanie Howard Clayton Newberry	2/16/06 4/30/07
PI	Threatened, Endangered or Candidate Animal Species	Potential impacts to T&E fish species (water depletion and potential for increased sedimentation), depending on water sources used for drilling. Bald eagle forage habitat.	Dixie Sadlier	2/17/06
NI	Wastes (hazardous or solid)	*Hazardous Waste:* No chemicals subject to reporting under SARA Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of this well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completing of this well" *Solid Waste:* Trash would be confined in a covered container and hauled to an approved landfill. Burning of waste or oil would not be done. Human waste would be contained and be disposed of at an approved sewage treatment facility.	Stephanie Howard	2/16/05
PI	Water Quality (drinking)	Increase erosion due to roads, which is discussed through the soils section. Potential for spills of hydrocarbons and other chemicals as well as increased sediments in the river which will be	Stan Olmstead	2/16/06

Determination	Resource	Rationale for Determination*	Signature	Date
		considered through the Section 7 Consultation.		
NI	Water Quality	The operator has certified compliance with all Onshore Oil and Gas Orders. "Onshore Oil and Gas Order No. 2 Drilling Operations" will assure that the project will not adversely affect groundwater quality. Due to the state-of-the-art drilling and well completion techniques, the possibility of adverse degradation of groundwater quality or prospectively valuable mineral deposits by the proposed action will be negligible. Well completion must be accomplished in compliance with "Onshore Oil and Gas Order No. 2, Drilling Operations", These guidelines specify the following:*…proposed casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use.*	John Mayers	2/16/06
PI	Wetlands/Riparian Zones	The nearest riparian and wetland habitat is along the White River. Surface waters drain from the project area into the White River. Potential for increased invasive weeds through access to the river corridor.	Stan Olmstead	2/16/06
PI	Wild and Scenic Rivers	No existing Wild or Scenic Rivers would be impacted by the proposed project. A portion of the project would be within the area considered for Wild and Scenic Rivers, as a wild segment under alternatives A and C of the Vernal FO Draft RMP, with IMP management for "wild" eligibility.	Kim Bartel	2/16/06
NP	Wilderness	No formal wilderness areas or wilderness study areas are present in the project area.	Stephanie Howard	2/16/06
PI	Rangeland Health Standards and Guidelines	Could cause the Olsen allotment to not meet Utah Rangeland Health standards 1. (due to potential erosion issues) 3. (due to increased invasive species due to disturbance) and 4.	Dylan Tucker	2/16/06
PI	Livestock Grazing	The project is located within the Olsen allotment (sheep). About 5 AUMs would be lost. Pipelines, if any, that would be laid near a corral should be buried. Road reclamation could limit access to portions of the allotment.	Dylan Tucker	2/16/06
NP	Woodland / Forestry	No commercial woodlands present.	Steve Strong	2/16/06
PI	Vegetation including Special Status Plant	Desert shrub and/or Pinion-Juniper community vegetation will be lost in construction.	Stephanie Howard Clayton Newberry	2/16/06 4/30/07

Determination	Resource	Rationale for Determination*	Signature	Date
	Species other than FWS candidate or listed species	Habitat survey, conducted by Buys & Associates Nov. 2005, determined that habitat for *Penmstemon scariosus* var. *albifluvis* (White River beardtongue) exists within the project area. Recommend avoidance of potential habitat, or on-site clearance surveys during flowering period (May).		
PI	Fish and Wildlife Including Special Status Species other than FWS candidate or listed species eg. Migratory birds.	Project area has habitat for big game, small game, raptors, and migratory birds.	Dixie Sadlier	2/17/06
PI	Soils	Some shallow and highly erosive soils exist within the project area which could lead to an increase in soil loss, and deposition of sediment in the White River. Also some soils in the project area are rated by the NRCS as slightly saline to strongly saline.	Dylan Tucker	2/16/06
PI	Recreation	River recreation including Goblin City trail and overlook, limited hunting, sightseeing, and OHV.	Kim Bartel	2/16/06
PI	Visual Resources	VRM II and VRM IV in the project area.	Kim Bartel	2/16/06
NI	Geology / Mineral Resources/Energy Production	A portion of the project area is on or near land patented for gilsonite. The operator has certified compliance with all Onshore Oil and Gas Orders. "Onshore Oil and Gas Order No. 2 Drilling Operations" will assure that the drilling activity will not adversely affect prospectively valuable mineral deposits (such resources will be reviewed by the BLM on an APD by APD basis, similar to Water Quality (drinking/ground)) No Mineral Materials will be needed.	Pete Sokolosky	2/16/06
PI	Paleontology	The project area is within the lower Wagonhound member of the Uinta Formation with a high potential to yield fossil resources. Project specific surveys will be completed for the proposed wells, roads, and pipelines.	John Mayers	2/16/06
NI	Lands / Access	The proposed rights-of-way (ROWs) are in conformance with the Bureau of Land Management's multiple use mission governing the affected area. The pipeline ROWs would be constructed adjacent to the road ROWs to minimize impacts. The selected routes avoid other existing utilities in an effort to provide for the safe construction, operation and maintenance of the ROWs; therefore, no mitigation for Lands/Access will be necessary.	Shauna Derbyshire	2/16/06

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Fuels / Fire Management	No impact due to the pipelines being steel, and access will not be impaired.	Steve Strong	2/16/06
NI	Socioeconomics	The Proposed Action would have minor, but positive and temporary effects on the socio-economics of local cities and towns surrounding the project area. Project area work crews would likely increase local revenue through expenditures on lodging, meals, and supplies. In the last 50 years, Uintah County has shifted from an agrarian economy to an oil and gas economy with services to support oil and gas (retail trade, private services, and government services). A single well would have a total drilling and completion cost of approximately $600,000 according to IPAMs. A single well would employ approximately 34 employees over the life of the well (30 initial, 4 long term). Long term employment is approximately 15% of total employment for well development, and would be a more significant contributor to the community due to the fact that it would be more likely to draw employees from the local community than the initial employment, which would draw employees from both local and regional bases. The total drilling and completion cost of this project's 5 wells would be less than1% of the expected cost of the 6331 wells predicted under the No Action alternative of the Vernal FO Draft RMP. The No Action Alternative was chosen for comparison purposes because it is a prediction of the existing conditions. These predicted amounts are negligible in comparison with the overall picture, therefore there is No Impact to socioeconomics expected.	Stephanie Howard	2/16/06
NP	Wild Horses and Burros	None present. No HAs or HMAs exist within the project area.	Delbert Clark	2/17/06
PI	Wilderness characteristics	The project area has been determined to have wilderness characteristics.	Kim Bartel	5/4/05

Reviewer Title	Signature	Date	Comments
NEPA / Environmental Coordinator	Stephanie Howard	12/18/07	
Authorized Officer		12-18-2007	

APPENDIX C

SPECIAL STATUS PLANT CONSERVATION MEASURES

White River beardtongue (*Penstemon scariosus* var. *albifluvis*)

In order to minimize effects to the federal candidate White River beardtongue, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) will not result in a trend toward federal listing of the species. The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[2] prior to any ground disturbing activities to determine if suitable White River beardtongue habitat is present.

2. Within suitable habitat[3], site inventories will be done to determine occupancy. Inventories:
    a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
    b. Will be conducted in suitable and occupied[4] habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually May 1st to June 30th in the Uintah Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),
    c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
    d. Will include, but not be limited to, plant species lists and habitat characteristics, and
    e. Will be valid until May 1st the following year.

3. Design project infrastructure to minimize impacts within suitable habitat[2]:
    a. Reduce well pad size to the minimum needed, without compromising safety,
    b. Limit new access routes created by the project,
    c. Roads and utilities should share common right-of-ways where possible,
    d. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
    e. Place signing to limit off-road travel in sensitive areas, and
    f. Stay on designated routes and other cleared/approved areas.

4. Within occupied habitat[3], project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
    a. Follow the above (#3) recommendations for project design within suitable habitats,
    b. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant,

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[2] *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

[3] *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain White River penstemon; habitat descriptions can be found by linking to candidate species information at <http://www.fws.gov/endangered/wildlife.html>.

[4] *Occupied habitat* is defined as areas currently or historically known to support White River penstemon; synonymous with "known habitat."

c. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from May 20th to June 30th (flowering period); dust abatement applications will be comprised of water only,
d. The edge of the well pad should be located at least 300' away from plants,
e. Surface pipelines will be laid such that a 300-foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat (sparsely vegetated shale slopes of the Green River Formation) to ensure the pipelines don't move towards the population,
f. Construction activities will not occur from May 20th to June 30th within occupied habitat,
g. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
h. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
i. Designs will avoid concentrating water flows or sediments into occupied habitat,
j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied White River beardtongue habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in coordination with the U.S. Fish and Wildlife Service.

Graham's Beardtongue (*Penstemon grahamii*)

In order to minimize effects to the federally proposed Graham's beardtongue, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the Endangered Species Act (ESA). The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[5] prior to any ground disturbing activities to determine if suitable Graham's beardtongue habitat is present.

2. Within suitable habitat[6], site inventories will be done to determine occupancy. Inventories:
    a. Must be conducted by qualified individual(s),
    b. Will be conducted in suitable and occupied[7] habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (April 15th to May 20th, unless extended by the BLM),
    c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
    d. Will include, but not be limited to, plant species lists and habitat characteristics, and
    e. Will be valid until April 15th the following year.

3. Design project infrastructure to minimize impacts within suitable habitat[2]:
    a. Reduce well pad size to the minimum needed, without compromising safety,
    b. Limit new access routes created by the project,
    c. Roads and utilities should share common right-of-ways where possible,
    d. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
    e. Place signing to limit off-road travel in sensitive areas, and
    f. Stay on designated routes and other cleared/approved areas.

4. Within occupied habitat[3], project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
    a. Follow the above (#3) recommendations for project design within suitable habitats,
    b. Construction of roads will occur such that the edge of the right of way is at least 100' from any plant,
    c. Where occurring within delineated area (see map), roads will be graveled; the operator is encouraged to apply water for dust abatement to such areas from April 15 to May 30 (flowering period); dust abatement applications will be comprised of water only,

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[5] Potential habitat is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

[6] Suitable habitat is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Graham's beardtongue. Habitat descriptions can be found in the Federal Register 71(12):3158-3196.

[7] Occupied habitat is defined as areas currently or historically known to support Graham's beardtongue; synonymous with "known habitat."

d. The edge of the well pad should be located at least 300' away from plants,
e. Surface pipelines will be laid such that a 50 foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat (exposed raw shale knolls and slopes derived from the Parachute Creek and Evacuation Creek members of the geologic Green River Formation) to ensure the pipelines don't move towards the population,
f. Construction activities will not occur from mid-April through may within delineated area,
g. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
h. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
i. Designs will avoid concentrating water flows or sediments into occupied habitat,
j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Graham's beardtongue habitats within 50' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Graham's beardtongue occurs as a result of project activities.

Additional measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

Uinta Basin hookless cactus (*Sclerocactus glaucus (= brevispinus* and *wetlandicus*)

In order to minimize effects to the federally threatened Uinta Basin hookless cactus, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service), developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the Endangered Species Act (ESA). The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat[8] prior to any ground disturbing activities to determine if suitable Uinta Basin hookless cactus habitat is present.

2. Within suitable habitat[9], site inventories will be conducted to determine occupancy. Inventories:
    a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
    b. Will be conducted in suitable and occupied[10] habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods:
        i. *Sclerocactus brevispinus* surveys should be conducted March 15th to June 30th, unless extended by the BLM
        ii. *Sclerocactus wetlandicus* surveys can be done any time of the year, provided there is no snow cover,
    c. Will occur within 115' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 100' from the perimeter of disturbance for the proposed well pad including the well pad,
    d. Will include, but not be limited to, plant species lists and habitat characteristics, and
    e. Will be valid until March 15th the following year for *Sclerocactus brevispinus* and one year from the survey date for *Sclerocactus wetlandicus*.

3. Design project infrastructure to minimize impacts within suitable habitat[2]:
    a. Reduce well pad size to the minimum needed, without compromising safety,
    b. Limit new access routes created by the project,
    c. Roads and utilities should share common right-of-ways where possible,
    d. Reduce width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
    e. Place signing to limit off-road travel in sensitive areas,
    f. Stay on designated routes and other cleared/approved areas, and
    g. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.

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[8] *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

[9] *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Uinta Basin hookless cactus. Habitat descriptions can be found in the U.S. Fish and Wildlife Service's 1990 Recovery Plan and Federal Register Notices for the Uinta Basin hookless cactus (http://www.fws.gov/endangered/wildlife.html).

[10] *Occupied habitat* is defined as areas currently or historically known to support Uinta Basin hookless cactus; synonymous with "known habitat."

4. Within occupied habitat[3], project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
    h. Follow the above (#3) recommendations for project design within suitable habitats,
    i. Buffers of 100 feet minimum between the edge of the right of way (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated,
    j. Surface pipelines will be laid such that a 100 foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat to ensure the pipelines don't move towards the population,
    k. Before and during construction, areas for avoidance should be visually identifiable in the field, e.g., flagging, temporary fencing, rebar, etc.,
    l. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
    m. Designs will avoid concentrating water flows or sediments into occupied habitat,
    n. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
    o. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied Uinta Basin hookless cactus habitats within 100' of the edge of the surface pipelines' right-of-ways, 100' of the edge of the roads' right-of-ways, and 100' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.

6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the Uinta Basin hookless cactus is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.