WildEarth Guardians
25 YEARS

March 4, 2015

Mary Jo Rugwell, Acting State Director
Bureau of Land Management
5353 Yellowstone Road
Cheyenne, WY 82003

VIA FAX (307) 775-6203

RE: PROTEST OF CERTAIN PARCELS TO BE OFFERED AT BLM'S MAY 2015 COMPETITIVE OIL & GAS LEASE SALE

Dear Ms. Rugwell:

In accordance with 43 C.F.R. §§ 4.450-2 and 3120.1-3, WildEarth Guardians, Rocky Mountain Wild, and Frank Maurer, an individual, protest certain parcels being offered at the Bureau of Land Management's (BLM) May 2015 competitive oil and gas lease sale.

We protest all parcels in the May 2015 lease sale on the basis that BLM has not conducted a NEPA analysis on the environmental impacts of oil and gas leasing as related to the social cost of carbon, an issue that we raised in our comments on the May 2015 lease Environmental Analysis (EA).

The sage grouse parcels under protest are numbered WY-1505-001, 002, 003, 007, 018, 027, 028, 029, 030, 031, 032, 033, 034, 035, 036, 042, 046, 047, 048, 049, 050, 051, 055, 056, 057, 058, 059, 063, 067, 068, 071, 072, 073, 074, and 075. This protest is based on concerns over leasing lands within key sage grouse habitats (Preliminary General Habitats) and designated Core Areas. <u>All lease parcel numbers described in this protest are unless otherwise stated numbered in this protest according to the crosswalk list and should reflect the numbers in the Competitive Lease Sale Notice.</u> This renumbering by BLM is unnecessarily confusing to the public and is bound to wreak havoc on lease protests through no fault of the protestors, and we urge BLM to maintain consistent numbering of lease parcels throughout the entire process in the future; we see no difficulty with presenting lease parcels for auction with non-sequential numbering. Some Core Area parcels are likely to be included in the BLM's RMP amendment process and/or parallel RMP revision processes and are part of a proposed Sage Grouse ACEC under Alternative B and C of the Wyoming Sage-Grouse RMP Amendment Draft EIS, or in "stronghold" areas recommended for ever more stringent protection under the RMP amendment process by the U.S. Fish and Wildlife Service. See Attachment 1. Given that these plan revision

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processes are underway, BLM should defer these parcels so that it does not foreclose on alternatives that could be considered in these pending NEPA processes.

We appreciate the fact that the BLM has begun to implement the Interior leasing reforms. We are pleased to have had the opportunity to comment on the EA prior to the lease sale. We also appreciate that many Core Area lease parcels have been deferred from this sale. However, some of our concerns remain insufficiently addressed by the NEPA documents thus far, and so we are protesting certain parcels to be offered at the May 2015 lease auction.

This Protest incorporates by reference all Exhibits provided to Wyoming BLM with the protest of the October 2008 lease sale by Biodiversity Conservation Alliance, et al., and all attachments to the protest of the November 2014 lease sale by WildEarth Guardians and Rocky Mountain Wild. As BLM is already in possession of these documents, we have not attached them hereto. We are willing to provide electronic copies of any exhibits upon request for BLM's ease of use.

I. THE PARTIES

WildEarth Guardians (Guardians) is a non-profit conservation group with thousands of members in Wyoming and other states. Guardians is dedicated to protecting wildlife, wild rivers, and wild places throughout the American West. Members of Guardians utilize land and water resources within and near these parcels for hiking, camping, recreational, scientific study, photography, and aesthetic uses. As a side note, it is not necessary for Guardians or any other organization to establish standing to litigate individual lease parcels at the Protest stage; our standing to bring litigation on the lease parcels in this Protest is appropriately addressed at the litigationstage. Guardians and its members are actively involved in BLM oil and gas activities in this region and participate in National Environmental Policy Act (NEPA) stages of BLM oil and gas leasing and projects by submitting comments. Guardians has a long record of advocating for preventing the impacts of oil and gas development from destroying lands and wildlife in Wyoming and throughout the West. As a consequence, Guardians and its members would be adversely affected by the sale of the lease parcels being protested here and they have an interest in this matter.

Rocky Mountain Wild (RMW) is dedicated to conserving and recovering native and naturally functioning ecosystems in the Greater Southern Rockies and Plains. Its members value the clean water, fresh air, healthy communities, sources of food and medicine, and recreational opportunities provided by native biological diversity. RMW passionately believes that all species and their natural communities have the right to exist and thrive. Rocky Mountain Wild uses the best available science to forward its mission through participation in policy, administrative processes,legal action, public outreach and organizing, and education.

Frank Maurer (an individual) is a landowner and conservation easement holder with an ownership interest in the surface estate of Section 12 of lease parcel WY-1505-003, and whose property would also be affected by oil and gas development on Section 14 of this parcel, which adjoins his property, if it is leased. Mr. Maurer purchased these lands with an intention to manage them for conservation of greater sage grouse and other wildlife species, and to that end

has enrolled his properties in conservation easements to permanently protect habitat for sage grouse and other wildlife.

II. THE ISSUES

AT RISK: WILDLIFE, OPEN SPACES, AND CLEAN AIR AND WATER

Oil and gas activities on the public lands at issue herein are quickly escalating. BLM is approving record numbers of large oil and gas development projects in Wyoming. The lands at issue here are mostly federal lands managed by BLM. Many of these lands provide critical habitat for a number of species, ranging from sage grouse, to mule deer, to severely imperiled species, such as fish species in the Green/Colorado River Basin and Platte River Basin, and sage grouse on the sagebrush country. Many of the BLM lands at issue serve as quiet, serene places of natural beauty and solitude, and as such, they provide excellent recreational opportunities for hiking, birding, wildlife viewing, hunting, fishing, backpacking, and enjoyment of open spaces.

The explosion of oil and gas development on these lands threatens all of the above resources, for which BLM has a mandatory duty to protect for "multiple use." Oil and gas development has and will lead to fragmented habitat and surface disturbances through well pad construction, oil and gas well rigs, increased vehicular traffic, miles of roads, pipelines and power lines, and noise from generators and compressor stations. All of these associated activities serve to disrupt habitat, destroy nesting and brooding grounds, and disturb wildlife. These activities can significantly impact elk, mule deer, pronghorn antelope, and sage grouse, as well as many other species that live there. Many of these lands serve as crucial winter range and parturition areas for elk, pronghorn antelope and mule deer, as well as critical breeding and nesting habitat near sage grouse leks. Many rare species find some of their last secure refuges on these lands.

Protestors realize, of course, that a lease itself does not necessarily create immediate disturbances, but as BLM well knows, if a lease is not subject to a "No Surface Occupancy" (NSO) stipulation, the lessee receives contractually-enforceable surface use rights. 43 C.F.R. § 3101.1-2. In other words, once a lease is sold, the cat is out of the bag, putting sensitive resources which have yet to be properly considered through site-specific NEPA analysis at risk of significant and potentially unacceptable harm. Because it represents an irretrievable and irreversible commitment of resources, the leasing stage is extremely critical. We are deeply concerned that the BLM has disparaged the act of mineral leasing as little more than a paper transaction when, in reality, it is an important, legally consequential event that commits lands to a particular use.

III. BLM NEEDS TO DEFER CERTAIN PARCELS WITH KEY SAGE GROUSE HABITAT OR AT MINIMUM ATTACH MORE PROTECTIVE STIPULATIONS

We protest Parcels WY-1505-003, 007, 028, 029, 030, 031, 033, 042, 067, 073, and 074, which are at least partially in a sage grouse Core Area and appear to be slated for leasing. These parcels are marked for partial deferral, and from the lease notice and other documentation, it is unclear

which part of the lease is to be deferred and which part offered, or whether all Core Area lands are slated for deferral. To the extent that no part of these leases slated to be auctioned fall within a Core Area because Core Area portions have been deferred, and do not involve Preliminary General Habitats identified in sage grouse RMP amendments, we withdraw our Protest of parcels meeting these criteria. Leasing these lands on the eve of plan revision decisions would remove the potential for these lands to remain unleased, and would instead commit the agency to some form of oil and gas development on these lands for a ten-year period.

Although this decision is in some cases consistent with BLM's Wyoming Office sage grouse policy, it ignores the biological realities that oil and gas impacts outside sage grouse suitable habitat can have a negative impact on sage grouse inside suitable habitat, if wells and roads are sited close enough to the edge of the suitable habitat, and also fails to adequately protect sage grouse habitats in Core Areas where there is not contiguous ownership by BLM or contiguous unleased area greater than 11 square miles. The acknowledged inadequacy of sage grouse conservation measures in current BLM RMPs by the U.S. Fish and Wildlife Service in its 2010 "warranted, but precluded" rule on the greater sage grouse, and the major problems with the NEPA analyses for sage grouse for these plans in particular (failure to examine a range of reasonable alternatives on sage grouse conservation, failure to take a hard look at the efficacy of proposed sage grouse conservation measures) places BLM in a legally problematic position.[1] Simply put, with either a sage grouse Plan Amendment or Resource Management Plan revision underway in every Field Office in Wyoming to address the deficiencies in the current Plans, the BLM should defer all leasing in Priority Habitats (which in Wyoming is synonymous with Core Areas) until the completion of the RMP Amendment process, under which BLM will determine whether and under what conditions oil and gas leasing will occur (if at all) inside Core Areas.

As the BLM is currently undertaking a series of Sage Grouse Plan Amendments and Plan revisions for the Field Offices covered by this Lease Protest, and the issuance of these leases absent the measures recommended by the National Technical Team could foreclose on options for greater protection of sage grouse habitats within the plan amendments and/or revisions, the leases included in this Protest should at minimum be deferred pending completion of the planning processes.

According to BLM's 2001 National Greater Sage-Grouse Planning Strategy,[2] "the BLM needs to incorporate explicit objectives and adequate conservation measures into RMPs within the next 3 years." The BLM has yet to accomplish this goal, and indeed the Green River RMP, not revised since 1999, fails to meet this objective. As a result in significant part of the lack of adequate conservation measures in BLM Resource Management Plans, the U.S. Fish and Wildlife Service has listed the greater sage grouse as "Warranted but Precluded" under the Endangered Species Act, with a listing decision due in 2015. In an effort to emplace adequate conservation measures, the BLM is currently revising its Resource Management Plans throughout the range of the

[1] BLM has commented voluminously on the deficiencies of these RMPs during the EIS processes, and as we are already on record, we will not repeat these problems here but rather incorporate our comments on the RMP EISs by reference into this lease protest.

[2] Online at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2012.Par.9299.File.dat/IM%202012-044%20Att%202.pdf

greater sage grouse to address deficiencies in BLM sage grouse conservation measures. As a part of this process, the BLM Sage-grouse National Technical Team has issued a *Report on National Greater Sage-Grouse Conservation Measures* ("National Technical Team Report" or "NTT Report"),[3] which makes a number of recommendations directly germane to sage grouse conservation measures. These recommendations represent the opinions of the BLM's ranking experts on sage grouse as well as experts from state and other federal agencies. Recommendations especially salient to this oil and gas leasing EA are as follows:

- Do not allow >3% surface disturbance in any Core Area. NTT Report at 7.
- For each 640-acre section, if surface disturbance exceeds 3%, off-site compensation must occur. NTT Report at 9.
- Either close all Priority Areas to future oil and gas leasing (Alt. A) or close all Priority Areas to future leasing with a possible exception if a net increase in sage grouse can be shown. NTT Report at 22.
- No new surface disturbance on leases within Priority Habitats, with exceptions allowed if applying a 4-mile NSO buffer around the lek or (only in cases where the entire lease is within the 4-mile lek perimeter) on disturbance per 640-acre section and a maximum of 3% disturbance per section. NTT Report at 23.

These provisions have not been attached as stipulations to any of the leases to be offered at auction, and have yet top be completely considered in the RMP amendment/revision process. Leases should pass through this screen of recommendations before being offered, in order to prevent the BLM from foreclosing on management options available to the agency under the Sage Grouse Plan Amendment process as well as revision of the Green River RMP.

Some parcels are listed as having the requisite sage grouse habitat, but lack 11 square miles of contiguous unleased and manageable sage grouse habitat. The requirement of 11 square miles of habitat breaks down as a biologically appropriate conservation strategy in cases where land and minerals ownership is fragmented. BLM's current policy assumes that private or state lands are already or will become leased, and thus it is appropriate to lease interspersed BLM parcels. However, we expect BLM to show leadership on the issue of sage grouse conservation, and set a stronger example for neighboring landowners. BLM's current policy is not consistent with the NTT recommendations, which advocate a more protective approach regardless of current patterns of leasing or land ownership.

Wyoming sage-grouse populations are some of the largest left in the nation and were relatively stable until the last decade, when sage grouse populations experienced major declines range-wide. The Wyoming Game and Fish Department reported that since 1952, there has been a 20% decline in the overall Wyoming sage grouse population, with some fragmented populations declining more than 80%;[4] one of WGFD's biologists reported a 40% statewide decline over a

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[3] Available online at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2012/Par.52415.File.dat/IM%202012-044%20Att%201.pdf. Site last visited 3/6/13.

[4] WGFD. 2000. Minutes of the Sage-Grouse Conservation Plan meeting, June 21, 2000, Casper, WY. Cheyenne: Wyoming Game and Fish Department. A copy is attached to the BCA June 2008 Lease Protest as Exhibit 32.

recent 20-years period.[5] More recently, there has been a 60% decline in the statewide population between 2007 and 2013. These declines are attributable at least in part to habitat loss due to mining and energy development and associated roads, and to habitat fragmentation due to roads and well fields. Oil and gas development poses perhaps the greatest threat to sage grouse viability in the region. The area within 2 to 3 miles of a sage-grouse lek is crucial to both the breeding activities and nesting success of local sage-grouse populations. In a study near Pinedale, sage grouse from disturbed leks where gas development occurred within 3 km of the lek site showed lower nesting rates (and hence lower reproduction), traveled farther to nest, and selected greater shrub cover than grouse from undisturbed leks.[6] According to this study, impacts of oil and gas development to sage-grouse include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing displacement, (3) increased legal and illegal harvest, (4) direct mortality associated with reserve pits, and (5) lowered water tables resulting in herbaceous vegetation loss. These impacts have not been thoroughly evaluated with full NEPA analysis.

Because lek sites are used traditionally year after year and represent selection for optimal breeding and nesting habitat, it is crucially important to protect the area surrounding lek sites from impacts. In his University of Wyoming dissertation on the impacts of oil and gas development on sage grouse, Matt Holloran stated, "current development stipulations are inadequate to maintain greater sage-grouse breeding populations in natural gas fields."[7] The area within 2 or 3 miles of a sage-grouse lek is crucial to both the breeding activities and nesting success of local sage-grouse populations. Dr. Clait Braun, the world's most eminent expert on sage-grouse, has recommended NSO buffers of 3 miles from lek sites, based on the uncertainty of protecting sage-grouse nesting habitat with smaller buffers.[8] A new study by the USGS indicates that the appropriate NSO lek buffer according to the best available science ranges from 3.1 miles to 5 miles from the lek.[9] Thus, the prohibition of surface disturbance within 3 miles of a sage-grouse lek is the absolute minimum starting point for sage-grouse conservation.

Other important findings on the negative impacts of oil and gas operations on sage grouse and their implications for the species are contained in three studies recently accepted for publication.[10] Sage grouse mitigation measures have been demonstrated to be ineffective at

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[5] Christiansen, T. 2000. Sage-grouse in Wyoming: What happened to all the sage-grouse? Wyoming Wildlife News 9(5), Cheyenne: Wyoming Game and Fish Department. A copy is attached to the BCA June 2008 Lease Protest as Exhibit 33.

[6] Lyon, A.G. 2000. The potential effects of natural gas development on sage-grouse (*Centrocercus urophasianus*) near Pinedale, Wyoming. M.S. Thesis, Univ. of Wyoming, 121 pp. A copy is attached to the BCA June 2008 Lease Protest as Exhibit 34.

[7] M. Holloran. Dec. 2005. Greater Sage-Grouse Population Response to Natural Gas Field Development in Western Wyoming, at 57. This study is attached to the BCA June 2008 Lease Protest as Exhibit 35.

[8] C. Braun. May 2006. A Blueprint for Sage-grouse Conservation and Recovery. Grouse, Inc. This study is available online at http://www.voiceforthewild.org/SageGrouseStudies/Braunblueprint2006.pdf

[9] Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H., 2014, Conservation buffer distance estimates for Greater Sage-Grouse—A review: U.S. Geological Survey Open-File Report 2014–1239, 14 p., *http://dx.doi.org/10.3133/ofr20141239*. Available online at http://pubs.usgs.gov/of/2014/1239/pdf/ofr2014-1239.pdf

[10] Doherty, K.E., D.E. Naugle, B.L. Walker, and J.M. Graham. Greater sage-grouse winter habitat selection and energy development. Journal of Wildlife Management: In Press. Attached to the BCA June 2008 Lease Protest as Exhibit 37.

maintaining this species at pre-development levels in the face of oil and gas development by Holloran (2005) and Naugle et al. (2006). Naugle found an 85% decline of sage-grouse populations in the Powder River Basin of northeastern Wyoming since the onset of coalbed methane development there. BLM has repeatedly failed to provide any analysis, through field experiments or literature reviews, examining the effectiveness of the standard quarter-mile buffers where disturbance would be "avoided." There is substantial new information in recent studies to warrant supplemental NEPA analysis of the impacts of oil and gas development to sage grouse. It is incumbent upon BLM to consider the most recent scientific evidence regarding the status of this species and to develop mitigation measures which will ensure the species is not moved toward listing under the Endangered Species Act. It is clear from the scientific evidence that the current protections are inadequate and are contributing to the further decline of the bird's populations. This information constitutes significant new information that requires amendment of the Resource Management Plans before additional oil and gas leasing can move forward.

Studies have shown that the majority of hens nest within 3 miles of a lek, and that a 5.3-mile buffer would encompass almost all nesting birds in some cases (Doherty et al. 2010).[11] The minimum scientifically supportable metric for NSO buffers would be 2 miles from the lek to protect breeding birds (after Holloran 2005, finding impacts from post-drilling production extend 1.9 miles from the wellsite) with an additional Timing Limitation Stipulation going out 3 miles from a lek,[4] with the understanding that the impacts of drilling and production activity would extend into the NSO buffer area from wells arrayed along its edge.

The restrictions contained in IM No. WY-2010-012 come nowhere close to offering sufficient on-the-ground protection to sage grouse leks. Within Core Areas, the IM allows surface disturbing activity and surface occupancy just six tenths (0.6) of a mile from "occupied or undetermined" leks,[12] a far cry from the science-based 3-mile buffer recommended by field biologists. We understand that males use shrubs <1 km (0.6 mi) from a lek for foraging, loafing, and shelter.[13] In Wyoming, State and BLM policies have in the past erroneously use this as a basis for a 0.6-mile No Surface Occupancy buffer around leks. However, there is no science to indicate that preventing wells within 0.6 mile of a lek will eliminate negative population impacts on sage grouse. In fact, the 1.9-mile buffer is the minimum amount found to be needed to avoid negative impacts to breeding grouse by Holloran (2005), and indeed, to protect the nesting hens that site their nests within 5 miles of a lek, an even larger buffer may be needed. Even less

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Walker, B.L., D.E. Naugle, and K.E. Doherty. Greater sage-grouse population response to energy development and habitat loss. Journal of Wildlife Management: In Press. Attached to the BCA June 2008 Lease Protest as Exhibit 38.
Walker, B.L., D.E. Naugle, K.E. Doherty, and T.E. Cornish. 2007. West Nile virus and greater sage-grouse: estimating infection rate in a wild bird population. Avian Diseases 51:In Press. Attached to the BCA June 2008 Lease Protest as Exhibit 39.

[11] Doherty, K. E., D. E. Naugle, and B. L. Walker. 2010. Greater Sage-Grouse nesting habitat: the importance of managing at multiple scales. Journal of Wildlife Management 74:1544–1553.

[12] Instruction Memorandum No. WY-2010-012, available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/efoia/IMs/2010.Par.61358.File.dat/wy2010-012.pdf.

[13] Rothenmaier, D. 1979. Sage-grouse reproductive ecology: breeding season movements, strutting ground attendance and site characteristics, and nesting. M.S. Thesis, Univ. Wyoming, Laramie, Autenrieth, R.E. 1981. Sage-grouse management in Idaho. Id. Dept. Fish and Game Wildl. Bull. 9.; Emmons, S. R. and C. E. Braun. 1984. Lek attendance of male sage-grouse. J. Wildl. Manage. 48:1023-1028.

protective, restrictions outside Core Areas allow surface disturbing activities and surface occupancy as close as one quarter (0.25) of a mile from leks.[14] BLM has too great an abundance of data to the contrary to continue with scientifically unsound stipulations as used in IM WY-2010-012 and the current Notice of Competitive Oil and Gas Lease Sale. This is especially clear in light of the U.S. Fish and Wildlife Service's recent finding that listing the greater sage-grouse as endangered or threatened under the Endangered Species Act is warranted, but precluded by other priorities. If the BLM and other federal agencies intend to keep the sage-grouse from accelerating beyond other listing priorities, more protective measures, in adherence with the scientific recommendations of Holloran, Braun, and others, must be undertaken now. In the interim, deferral of leasing is the appropriate course of action.

BLM has the scientific information needed to recognize that any use of these parcels will result in further population declines, propelling the sage grouse ahead of other "priorities" on the ESA "candidate list." Again, it is in all interested parties favor (conservation groups, potential lessees, BLM and other federal agencies) for BLM to determine specific "modifications" prior to issuing leases, such as NSO restrictions. If the BLM fails to do so through site-specific environmental review before the APD stage, the agency will violate the "jeopardy" prohibition in the Endangered Species Act and will not adhere to the directive of Secretary Salazar and the Department of Interior's announced leasing reforms.

We remain concerned that the leasing of the parcels in question will result in significant impacts to greater sage grouse should the BLM adopt its Preferred Alternative for the Wyoming Sage-Grouse RMP Amendment EIS, rendering the decision to issue the leases in question under a Finding of No Significant Impact (FONSI) a violation of NEPA. In the past, BLM itself has stated,

> In the event post-lease development without appropriate stipulations were to occur on leases in Greater Sage-Grouse habitat, it could potentially result in surface disturbing and/or disruptive activities within 2 miles or greater of a grouse lek or other known nesting habitats during the nesting period, within winter concentration areas, and/or within ¼ mile or greater of leks during the breeding season and/ or direct mortality. Direct and or indirect impacts could result in habitat fragmentation, reduced breeding success and/or nest abandonment as well as cause Greater Sage-Grouse to move to less suitable winter habitat.

Wyoming November 2014 Lease EA Version 2 at 100-101.

The Competitive Lease Sale Notice applies only a Timing Limitation Stipulation to the parcels in question preventing drilling and construction (but not production-related activities) on an unspecified area of the lease between March 1 and July 15. Additional restrictions to protect sage grouse can be added as Conditions of Approval following completion of the RMP amendment process. However, if the leases are sold, and the RMP Amendments prescribe no future leasing, there will be no mechanism for BLM to recall the leases from the leaseholder(s). The would undermine the agency's ability to implement Alternative B or C, which would close Core Areas to future leasing (Wyoming Sage-Grouse RMP Amendment DEIS at 2-63) under the Wyoming

[14] *Id.*

Sage-Grouse RMP Amendment should either of these alternatives be adopted for implementation. In order to maintain its range of options, BLM should exclude the parcels protested on sage grouse grounds for this reason alone.

The Preferred Alternative in the Wyoming Sage-Grouse RMP Plan Amendment EIS is Alternative E, which leaves sage grouse Core Areas open to future leasing (Wyoming Sage-Grouse RMP Amendment DEIS at 2-63) and prescribes a suite of conservation measures that are inadequate to prevent significant impacts to breeding, nesting, brood-rearing, and/or wintering sage grouse using Core Area habitats. If this alternative were to be adopted and its conservation measures applied in addition to the timing limitation stipulation that currently applies to the leases in question, significant impacts would result to greater sage grouse under certain types of development allowed under the combined stipulations and Conditions of Approval.

Holloran (2005) determined that roads sited within 0.7 miles of a lek, and main haul roads sited within 1.9 miles of a lek, result in significant negative impacts on sage grouse lek populations.[15] Under the Preferred Alternative of the Wyoming Sage-Grouse RMP Amendment DEIS, constructing such roads would be "avoided," but not prohibited. Wyoming Sage-Grouse RMP Amendment DEIS at 2-96. This means that such roads, constructed to serve oil and gas facilities on leases sold pursuant to this EA, could be located in areas that result in significant impacts to breeding sage grouse.

Knick et al. (2013) found that 99% of the active sage grouse leks in the western half of the species' range were surrounded by lands with 3% surface disturbance per square mile or less. The Preferred Alternative of the Wyoming Sage-Grouse RMP Amendment DEIS would allow 5% surface disturbance on the leases in question. Wyoming Sage-Grouse RMP Amendment DEIS at 2-134. This would result in significant impacts on breeding and nesting habitat, leading to abandonment of leks and extirpation of lek populations.

Holloran (2005), Walker et al. (2007), and Tack (2009) all found that well densities greater than 1 wellsite per square mile section result in significant impacts to sage grouse lek populations.[16] The Wyoming Sage-Grouse RMP Amendment DEIS Preferred Alternative limits wellpad density to one wellpad per square mile using a Disturbance Density Calculation Tool (DDCT) that radically expands the square-mile area across which the average is calculated beyond the proposed project area (Wyoming Sage-Grouse RMP Amendment DEIS at 2-133) in contravention of the recommendations of the BLM's own experts in the National Technical

[15] Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. PhD Dissertation. University of Wyoming. Laramie, Wyoming.

[16] Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. PhD Dissertation. University of Wyoming. Laramie, Wyoming; Walker, B.L., D.E. Naugle, and K.E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. Journal of Wildlife Management 71(8):2644-2654; Tack, J.D. 2009. Sage-grouse and the human footprint. Implications for conservation of small and declining populations. M.S. Thesis, Univ. of Montana, 96 pp.

Team report (NTT 2011)[17], which prescribed calculating wellpad density per square-mile section only. This latter approach avoids wellpad densities exceeding 1 per square mile in certain parts of a Core Area if the larger DDCT area is largely undeveloped, an outcome that results in significant impacts to sage grouse populations sited inside and near the oil and gas development. Copeland et al. (2013) underscored the inadequacy of the State of Wyoming Core Area strategy (to be implemented under Alternative E of the Wyoming Sage-Grouse RMP Amendment DEIS) by concluding that sage grouse populations are predicted to significantly decline both statewide and inside Core Areas with the implementation of these conservation measures.[18]

As noted earlier in this protest, Holloran (2005) found that the presence of a producing wellsite within 1.9 mile of a sage grouse lek results in significant negative effects on lek populations. No lek buffers are applied as lease stipulations under this EA, and the Preferred Alternative of the Wyoming Sage-Grouse RMP Amendment DEIS would prohibit surface-disturbing activities (such as wellsites) within 0.6 mile of leks, but would allow them to be permitted outside this buffer. Wyoming Sage-Grouse RMP Amendment DEIS at 2-138. Thus, if the Preferred Alternative is adopted the location of oil or gas wells as close a 0.7 mile from active lek sites would be permitted, likely resulting in significant impacts to the sage grouse populations using these leks.

Under the Preferred Alternative, exceptions, modifications, and waivers would continue to be considered to any and all sage grouse conservation measures applied to minerals management in both core and general habitat. Wyoming Sage-Grouse RMP Amendment Draft EIS at 2-62. In addition, Conditions of Approval under the Preferred Alternative would only be "considered," not required. Wyoming Sage-Grouse RMP Amendment DEIS at 2-73. This means that even if such conservation measures were adequate to prevent significant impacts, there is no guarantee that they will be applied on the ground when the time comes for lessees to develop leases sold at this lease auction. For the foregoing reasons, the development of the lease parcels in question pursuant to applied stipulations plus Conditions of Approval that may be applied under the Sage-Grouse RMP Amendment would still likely result in significant impacts to sage grouse in the areas affected. The issuance of these leases under a FONSI is therefore illegal under NEPA. At minimum, these parcels must be deferred pending completion of the Wyoming Sage-Grouse RMP Amendment.

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[17] Sage-grouse National Technical Team. 2011. A Report on National Greater Sage-grouse Conservation Measures. Available at www.blm.gov/pgdata/etc/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf.

[18] Copeland, H.E., A. Pocewicz, D.E. Naugle, T. Griffiths, D. Keinath, J. Evans, and J. Platt. 2013. Measuring the effectiveness of conservation: A novel framework to quantify benefits of sage-grouse conservation policy and easements in Wyoming. PlosONE 8: e67261. 14 pp.

In 2004, BLM published its National Sage-Grouse Habitat Conservation Strategy ("Strategy").[19] According to this policy,

> "The Federal Land Policy and Management Act (1976) (FLPMA) provides the basic authority for BLM's multiple use management of all resources on the public lands. One of the BLM's many responsibilities under FLPMA is to manage public lands for the benefit of wildlife species and the ecosystems upon which they depend. ... Consistency and coordination in identifying and addressing threats to sage-grouse and sagebrush habitat in context of the multitude of programs that BLM manages is required. Addressing these threats throughout the range of the sage-grouse is critical to achieving the mandate of FLPMA and threat reduction, mitigation, and elimination to sage-grouse and sagebrush habitats."

Strategy at 4. Among other commitments, this policy binds the BLM to "use the best available science and other relevant information to develop conservation efforts for sage-grouse and sagebrush habitats." Strategy at 7. This best available science includes all studies footnoted herein.

The Strategy also required BLM to complete an Ecoregional Assessment for the Wyoming Basins Ecoregion. *Id.* at 11. This Wyoming Basins Ecoregional Assessment publication ("WBEA")[20] was completed in 2011, and all lease parcels in this EA fall entirely within the Wyoming Basins Ecoregion. In order for the BLM to meet its obligation to "use the best available science" including publications specifically mandated under the Strategy, it must have considered this document and its recommendations in this NEPA analysis. The BLM did not do this. This study included a complete land cover mapping exercise including analysis of human footprint, which would have been useful to include in the Affected Environment section of the EA. Chapter 5 of this publication (WBEA at 112) specifically addresses sage grouse avoidance of oil and gas developments and other permitted facilities. This analysis found that sage grouse density was negatively correlated with major highways, powerlines, and the presence of oil and gas wells. WBEA at 124. These researchers pointed out, "Any drilling <6.5 km [approximately 4 miles] from a sage-grouse lek could have indirect (noise disturbance) or direct (mortality) negative effects on sage-grouse populations." WBEA at 131. Thus, the WBEA further underscores the likelihood of significant impacts resulting from the sale of these parcels.

We are concerned that all or portions of Parcels WY-1505-001, 002, 018, 027, 028, 029, 030, 031, 032, 033, 034, 035, 036, 042, 046, 047, 048, 049, 050, 051, 055, 056, 057, 058, 059, 063, 067, 068, 071, 072, 073, 074, and 075 are within 4 miles of active sage grouse leks and/or are located in General Habitats under consideration for additional protections under the Wyoming Greater Sage-grouse RMP Amendment EIS, and the development of these parcels would have a significant impact on sage grouse breeding and/or nesting on or near these parcels. We are also

[19] Available online at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and.Par.9151.File.dat/Sage-Grouse_Strategy.pdf, site last visited 3/13/13.

[20] Available online at http://sagemap.wr.usgs.gov/Docs/WBEA/wbea_book_15mb.pdf, site last visited 1/24/14.

concerned that development in the Core Area parcels referenced above will similarly have significant impact on sage grouse.

In 2010, the greater sage grouse became a Candidate Species under the Endangered Species Act, and a final listing determination is due by court order in September of 2016. In addition, numerous scientific studies have been published indicating that BLM mitigation measures in these plans are insufficient and will not prevent significant impacts to sage grouse, and these studies also constitute significant new information not addressed in RMP decisionmaking. In 2011, the BLM convened its own sage grouse experts together with the experts of other state and federal agencies in the form of the Greater Sage-grouse National Technical Team, and in late 2011 this group of agency experts issued its science-based recommendations in the form of a final report. These recommendations are under consideration for implementation in the current suite of RMP amendments, but are not reflected in the lease stipulations for the sage grouse parcels in this Protest. These facts constitute significant new information that has not been addressed in programmatic NEPA analysis for any of the Resource Management Plans that underlies the Wyoming November 2014 oil and gas lease sale. Finally, in 2013 the U.S. Fish and Wildlife Service identified Priority Areas for Conservation, and BLM subsequently identified Preliminary Priority Habitats and Preliminary General Habitats in its RMP Amendment Draft EIS, which also constitute significant new information, potentially significant impacts to which have yet to be addressed through an EIS. Due to the likelihood of significant impacts to sage grouse both inside and outside designated Core Areas and the failure to consider this wealth of significant new information in any EIS underlying these lease parcels, BLM is not legally able to issue the sage grouse lease parcels highlighted in this Protest without completing a new EIS that takes this significant new information into account.

We are further concerned that the leasing of these parcels violates BLM's Sensitive Species Manual with regard to prescribing inadequate sage grouse conservation measures that contribute to the need to list the species under the Endangered Species Act. As an implementation of Resource Management Plans that fail to apply adequate conservation measures and have contributed (and continue to contribute) to the likelihood and need to list the greater sage grouse as threatened or endangered, the decision to lease these parcels violates the agency's Sensitive Species Manual.

IV. THE SOCIAL COST OF CARBON

The requirement to analyze the social cost of carbon is supported by the general requirements of the National Environmental Policy Act ("NEPA"), specifically supported in federal case law, and by a 2009 Executive Order. We raised the issue that the BLM had not undertaken an analysis of the social cost of carbon in our comments on the May 2015 Oil and Gas Lease EA, and we incorporate these comments by reference into this protest. Based on the latest version of the EA, BLM has still failed to undertake an analysis of the socioeconomic impacts of oil and gas leasing as it contributes to climate change, pursuant to Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government (February 2010). While we appreciate that BLM has undertaken a very general descriptive account of the state of climate change to date (EA at 32), the categories of impact (in a general sense) that are caused by

burning fossil fuels (EA at 55), and the cumulative effects in a broad sense of climate change (EA at 77), nowhere has the agency made any attempt to implement the EPA's recommended Social Cost of Carbon protocol to estimate the economic costs versus benefits of leasing these lands for oil and gas production. At least one recent BLM oil and gas lease sale EA used this protocol to assess the socioeconomic cost of carbon,[21] demonstrating conclusively that the agency is capable of this analysis for oil and gas leasing in particular. It has failed to do so here.

In addition, there seems to be no analysis of the potential magnitude of methane leaks, even though massive methane seeps have been documented in the Rawlins Field Office. See Attachment 2. We appreciate that BLM has disclosed that methane is an important greenhouse gas, and has provided a tabular display of overall millions of metric tons across the entire industry (EA at 57), the contribution of developing the leases in question is omitted. The agency has the responsibility to provide estimates of methane emissions and other greenhouse gases as a result of development on the leases in question. Instead, the agency has kicked the can down the road to APD-level analysis, in violation of NEPA's hard look standard.

NEPA requires agencies to take a "hard look" at the consequences of proposed agency actions. 42 U.S.C. § 4321 *et seq.*; *Morris v. U.S. Nuclear Regulatory Commission,* 598 F.3d 677, 681 (10th Cir. 2010). Consequences that must be considered include direct, indirect, and cumulative consequences. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8. A cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. Analysis of site-specific impacts must take place at the lease stage and cannot merely be deferred until after receiving applications to drill. *See New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 717-18 (10th Cir. 2009); *Conner v. Burford,* 848 F.2d 1441 (9th Cir.1988); *Bob Marshall Alliance v. Hodel,* 852 F.2d 1223, 1227 (9th Cir.1988). Any NEPA analysis of a fossil fuel development project that fails to use the government-wide protocol for assessing the costs to society of carbon emissions from the proposed action has failed to take the legally required "hard look."

Courts have ordered agencies to assess the social cost of carbon pollution, even before a federal protocol for such analysis was adopted. In 2008, the Ninth Circuit Court of Appeals ordered the National Highway Traffic Safety Administration ("NHTSA") to include a monetized benefit for carbon emissions reductions in an EA prepared under NEPA. *Center for Biological Diversity v. National Highway Traffic Safety Administration,* 538 F.3d 1172, 1203 (9th Cir. 2008). NHSTA had proposed a rule setting corporate average fuel economy standards for light trucks. A number of states and public interest groups challenged the rule for, among other things, failing to monetize the benefits that would accrue from a decision that led to lower carbon dioxide emissions. NHTSA's EA had monetized the employment and sales impacts of the proposed action. *Id.* at 1199. The agency argued, however, that valuing the costs of carbon emissions was too uncertain. *Id.* at 1200. The court found this argument to be arbitrary and capricious. *Id.* The court noted that while estimates of the value of carbon emissions reductions occupied a wide

[21] See https://www.blm.gov/epl-front-office/projects/nepa/39064/55133/59825/DOI-BLM-ID-B010-2014-0036-EA_UPDATED_02272015.pdf, p. 81. Site last checked 3/3/15.

range of values, the correct value was certainly not zero. *Id.* It further noted that other benefits were monetized by the agency although also uncertain. *Id.* at 1202.

More recently, a federal court has done likewise for a proposed coal lease modification. That court began its analysis by recognizing that a monetary cost-benefit analysis is not universally required by NEPA. *High Country Conservation Advocates v. U.S. Forest Service*, 2014 WL 2922751 (D. Colo 2014), Slip Op. at 3, citing 40 C.F.R. § 1502.23. However, when an agency prepares a cost-benefit analysis, "it cannot be misleading." *Id.* at 3 (citations omitted). In this case, the NEPA analysis prepared by federal agencies, like the case above, included a quantification of benefits of the project. The quantification of the social cost of carbon, although included in earlier analyses, was omitted in the final NEPA analysis. *Id.* at 19. Those federal agencies then relied on the stated benefits of the project to justify project approval. This, the court explained, was arbitrary and capricious. *Id.* Such approval was based on a NEPA analysis with misleading economic assumptions, an approach long disallowed by courts throughout the country. *Id.* at 19-20. It should be noted that a general acknowledgement in the EA that the proposed action would release carbon pollution, which adds to the impacts of global warming was not enough; nor did an accurate accounting of the likely emission of those greenhouse gases suffice. The social cost of carbon had to be included.

In addition to case law, Executive Order 13514 makes the "reduction of greenhouse gas emissions a priority for federal agencies." E.O. 13514, Preamble. The reduction of emissions includes emissions from both direct and indirect activities. Section 1. This Executive Order requires that, "[i]n order to create a clean energy economy that will increase our Nation's prosperity, promote energy security, protect the interests of taxpayers, and safeguard the health of our environment," it is the "policy of the United States" that agencies "shall prioritize actions based on a full accounting of both economic and social benefits and costs." Section 1. When quantifying greenhouse gas emissions, the Department of the Interior is specifically instructed to "accurately and consistently quantify and account for greenhouse gas emissions" from sources controlled by the Department, including "emissions of greenhouse gases resulting from Federal land management practices." Section 9(a). The results of quantifying emissions from proposed federal land management actions, of fully accounting for all economic and social costs and benefits of those proposed actions, and the resulting prioritization of actions based on this quantification and accounting must be fully disclosed on publically available websites. Section 1.

NEPA's hard-look doctrine and related court cases make clear that the social cost of carbon must be analyzed whenever an agency is analyzing other economic costs and benefits of a proposed public lands fossil fuel project. E.O. 13514 goes further however and requires the Department of the Interior to analyze the social cost of carbon for all federal land management decisions. For the foregoing reasons, the parcels in this lease sale must be deferred pending a full analysis on the social cost of carbon. Because these economic impacts are potentially significant, and have yet to be analyzed in an EIS that underpins oil and gas leasing, the significant new information contained in the EPA Technical Support Document warrants a full-scale EIS to address these potentially significant impacts to the human environment.

V. FAILURE TO CONSIDER IMPACTS TO LANDS WITH CONSERVATION EASEMENTS

Parcel WY-0505-003 involves minerals underlying or adjacent to private lands with conservation easements that were established to protect sage grouse, big game, and other wildlife species. *See* Attachment 3, legal description on page 21. The portion of the parcel that is Section 12 underlies the property under easement, while Section 14 is immediately adjacent. The BLM's EA makes no mention of these lands or the potentially significant impacts that could occur to wildlife and habitats on them as a result of drilling on or adjacent to these parcels. This is a NEPA 'hard look' problem that stems from the agency's inability to notify the landowners in a timely fashion (landowners first received notification from Tom Foertsch that their lands were implicated in this lease sale on February 18th of 2015, halfway through the protest period for this lease sale), and thus we were unable to bring this important environmental issue to the agency's attention until this stage in the leasing process. The conservation easements involve sage grouse habitats within 3 miles of the Windy Lek (*see* Attachment 4), inside designated sage grouse Core Area, the protection of which we raised as a primary issue in our comments on the May 2015 Lease EA. We are concerned that development in this area will result in significant impacts to Core Area sage grouse.

It appears that this parcel was not deferred due to possessing less than 640 acres of unleased BLM estate, pursuant to IM 2012-019. EA at Appendix A. This IM assumes that if BLM does not control 11 square miles of unleased habitat, then deferral of lands from lease sales does not guarantee a conservation outcome, as development may occur on interlaced private lands. In this case, the private lands in question have a conservation easement to protect habitat values for sage grouse and other species, so the implicit assumption does not apply here. This example illustrates why it is unwise for BLM to implement a policy that assumes that private lands and minerals will be developed even if BLM lands and minerals are not. In either case, one of the alternatives in the pending sage grouse RMP amendment would place Core Area lands off-limits to future fluid mineral leasing irrespective of whether 11 square miles of unleased federal lands and minerals are present, and it would violate federal law for BLM to lease the lands in question absent a completed EIS to analyze the potential significant impacts to sage grouse Core Area habitats found here (*see* sage grouse section above).

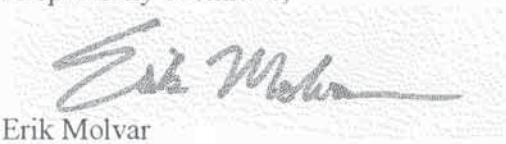
The leasing and development of these private lands, and adjoining BLM sections, could result in potentially significant impacts to the ability of these lands to provide habitat for sage grouse and other sensitive wildlife species. In addition to enrolling these lands in easements to protect their habitat values, the landowners have undertaken habitat enhancement projects (at significant cost to themselves) such as the installation of water guzzlers, which has over time resulted in increased sightings of sage grouse on the lands in question. Development directly on or immediately adjacent to these lands is likely to result in decreases in sage grouse populations in this area and/or displacement of birds away from otherwise suitable habitats in which the landowners have invested for the protection of wildlife. The existence of these easements constitutes significant new information that the BLM did not consider in its leasing EA or in any planning-level NEPA document that underpins this lease sale. As a good-neighbor gesture, BLM should defer the leasing of these parcels, beneath or adjacent to these conservation easement lands, until an accord can be reached with the landowners to ensure that BLM mineral extraction

permitting does not impair the ability of private landowners to practice conservation on their private property.

V. CONCLUSION AND REQUEST FOR RELIEF

For the foregoing reasons, WildEarth Guardians, Frank Maurer, and Rocky Mountain Wild request that the protested parcels not be offered for sale at the May 2015 competitive oil and gas lease sale. Sage grouse Core Area and General Habitat parcels need to be deferred pending completion of the RMP amendment/revision process. If BLM declines to withdraw the protested parcels, then we request that at the minimum, ***adequate*** protective stipulations be placed on the leases before the lease sale in order to provide protection for wildlife, air quality, water quality, and other special resources.

Respectfully submitted,



Erik Molvar
Sagebrush Sea Campaign Director
WildEarth Guardians
319 S. 6th Street
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Signing on behalf of

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25344 County Road 95
Davis, CA 95616
(530) 219-4477

Matthew Sandler
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Rocky Mountain Wild
1536 Wynkoop St., Suite 303
Denver, CO 80202
Phone: 303-546-0214 ext. 1

List of Attachments:

1. USFWS Strongholds letter to BLM
2. Rawlins Field Office Methane Seeps report

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3. Conservation Easement involving WY-1505-003
4. Monitoring report for easement involving WY-1505-003

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

In Reply Refer To:
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OCT 27 2014

BLM NOTE:
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Re: [illegible]

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We have proposed additional areas to be evaluated for ACEC designation. The BLM and USFS also have management plans that designate or protect the objectives within it. Well represented. The attached maps identify areas where it is most important that BLM and Forest Service work with landowners to identify opportunities to help promote preservation of the species.

Greater Sage-grouse and Habitat

We used the following criteria to identify areas within PPH that will reach the most conservation benefit for the species:

1. Where have identified specific habitat that is for sage-grouse;
2. Where there are documented occurrences of sage-grouse;
3. Areas identified in the Greater Sage-grouse Conservation Assessment and Strategy (Connelly and Hagen 2004); and
4. Areas of important federal ownership, and in some cases, adjacent private lands that serve to enhance the conservation value of the landscape.

In addition, we evaluated these areas against current BLM and USFS designations (Wilderness and Wilderness Study Areas, Wilderness Characteristics, Areas of Critical Environmental Concern, Research Natural Areas, Wild and Scenic Rivers, Special Recreation Management Areas, Visual Resource Management areas, Backcountry Conservation Areas, Sensitive Species, Wildlife Habitat Management Areas, Fish and Wildlife Service Mitigation Policy, Wyoming Game and Fish Department Recommendations, Wyoming Sage-grouse Executive Order, and Wyoming Sage-grouse Core Area Protection Strategy).

Proposed Areas (Map 1)

See below for more maps and descriptions.

Greater Sage-grouse Habitat (Map 2)

1. Southern Wyoming Basins Ecoregion: This core area is characterized by a mix of federal and state lands. The area contains the designated federal Wilderness areas, and proposed areas for additional core habitat. Management actions have declined.

2. Northern Great Plains: This area is also home to Greater Sage-grouse. More than 90% is characterized by a mix of federal, state, and private land. Large blocks of federal habitat have declined and has a high density of livestock grazing.

3. Areas adjacent to the Southern Powder River Basin Oil and Gas Project, Converse and Natrona Counties: This area occurs predominantly on federal and state lands and is the largest Greater Sage-grouse core area in Wyoming. Declining densities in Converse and both of these populations (Wyoming Game and Fish, 2008) are a primary concern for sage-grouse core

- Southeastern Oregon/northeastern Nevada: This area is predominately federal surface lands and contains five designated WSAs. Breeding densities of sage-grouse are high.

Rocky Mountain Region (Maps 3 and 4):

- Southeastern/southeastern Wyoming (Map 3): This expansive area is predominately federal surface estate and represents some of the best remaining sage-grouse habitat within the entire range of the species. The area includes four currently designated WSAs, one federal Wilderness area, and several areas managed for historic and cultural resources (which exclude development). Seedskadee National Wildlife Refuge is in the vicinity.

- Bear River Watershed (Northeastern Utah/Southeastern Wyoming, Map 3): This area has a high density of breeding sage-grouse. Cokeville Meadows NWR is located nearby.

- Northeastern Montana (Map 4): This area contains the highest breeding sage-grouse densities in Montana. It follows the Missouri River is adjacent to Charles M. Russell NWR. This area also provides winning habitat for sage-grouse migrating seasonally from Alberta, Canada, where the species listed as endangered under the Canadian Species at Risk Act.

References

U.S. Fish and Wildlife Service 2013. Greater sage-grouse (Centrocercus urophasianus) Conservation objectives final report. U.S. Fish and Wildlife Service, Denver, CO.

Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation assessment of greater sage-grouse and sage-grouse habitat. Western Association of Fish and Wildlife Agencies, Unpublished Report, Cheyenne, WY.

Dolbeer, K. E., J. D. Tack, J. S. Evans, and D. E. Naugle. 2010. Mapping breeding densities of greater sage-grouse: A tool for range-wide conservation planning. BLM Conservation Report, Interagency Agreement # L 0[illegible]

Chambers, J. C., Pyke, D. A., Maestas, J. D., Pellant, M., Boyd, C. S., Campbell, S. B., Espinosa, S., Haybrook, D. W., Mayer, K. E., Wuebbles, A. 2014. Using resistance and resilience concepts to reduce impacts of invasive annual grasses and altered fire regimes on the sage-grouse ecosystem and greater sage-grouse. A strategic multiple approach. Gen. Tech. Rep. RMRS-GTR-[illegible]. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 73 p.

Knick, S. T., and S. E. Hanser. 2013. Conservation pattern and process in greater sage-grouse populations and sage-grouse landscapes. Pp. 383 – 405 in S. T. Knick and J. W. Connelly (editors). Greater Sage-Grouse: ecology and conservation of a landscape species and its habitat. Studies in Avian Biology (vol. 38), University of California Press, Berkeley, CA.

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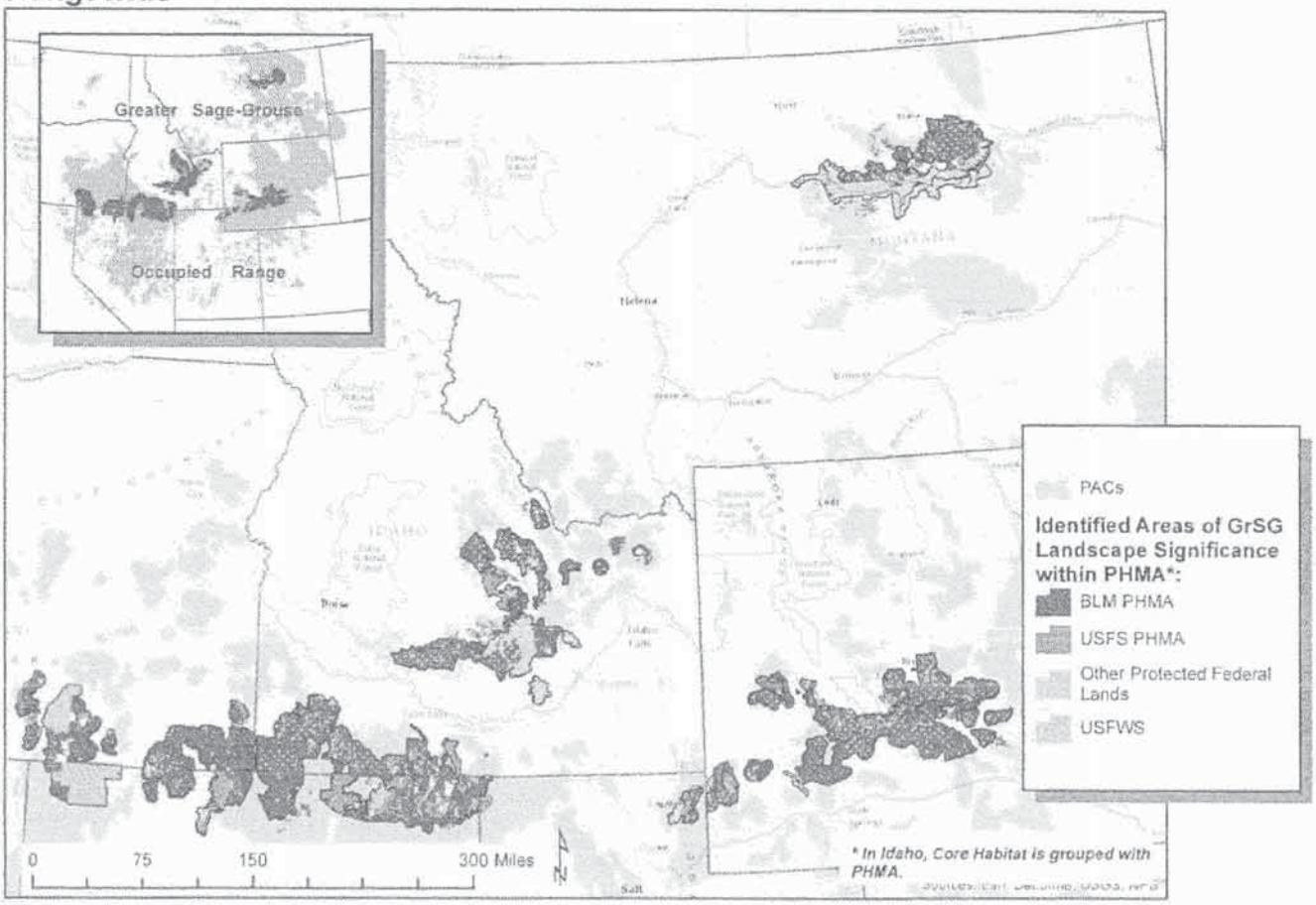
Identified Areas of GrSG Landscape Significance within BLM/USFS PHMA: Rangewide



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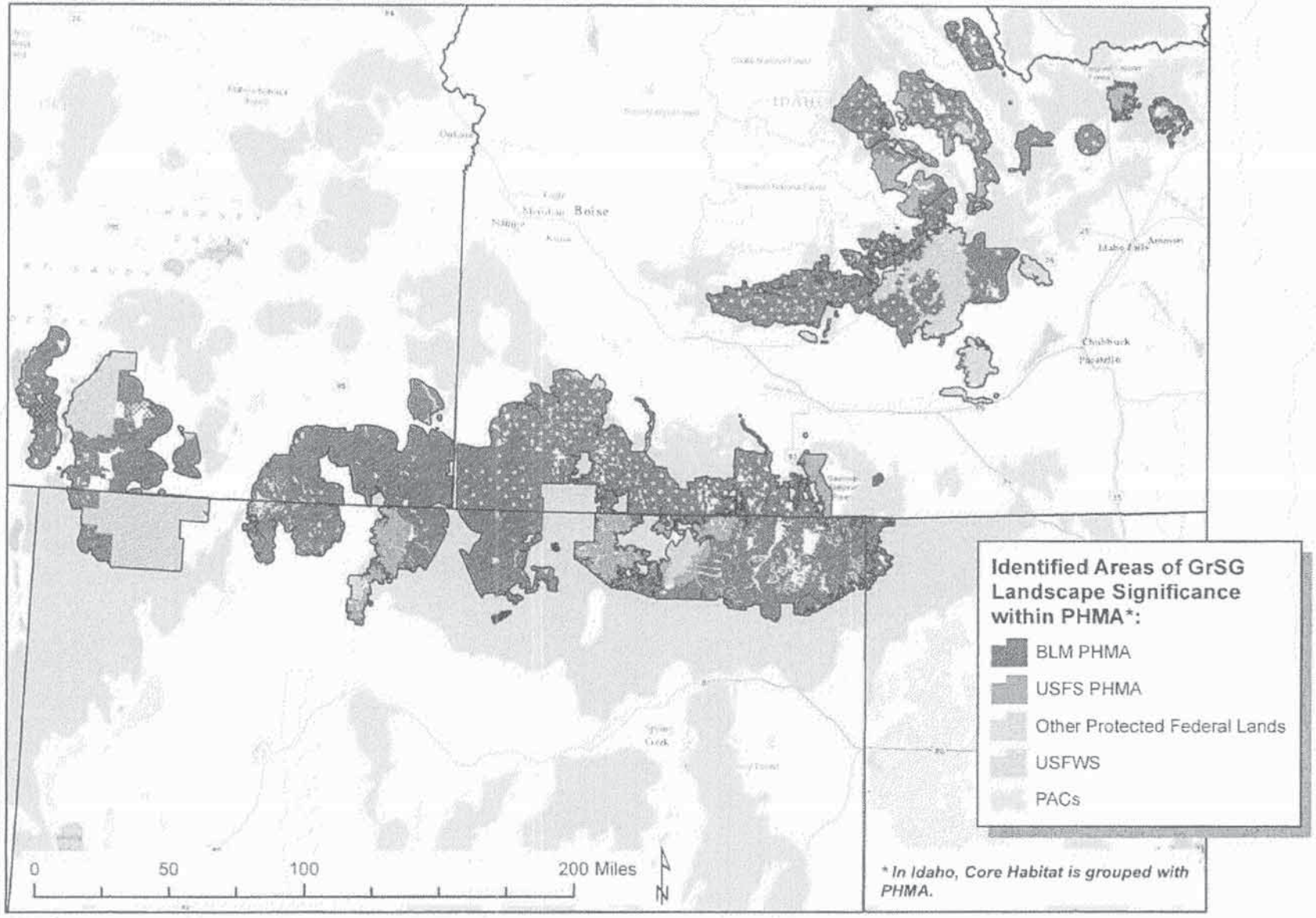
Identified Areas of GrSG Landscape Significance within BLM/USFS PHMA: Northern Great Basin



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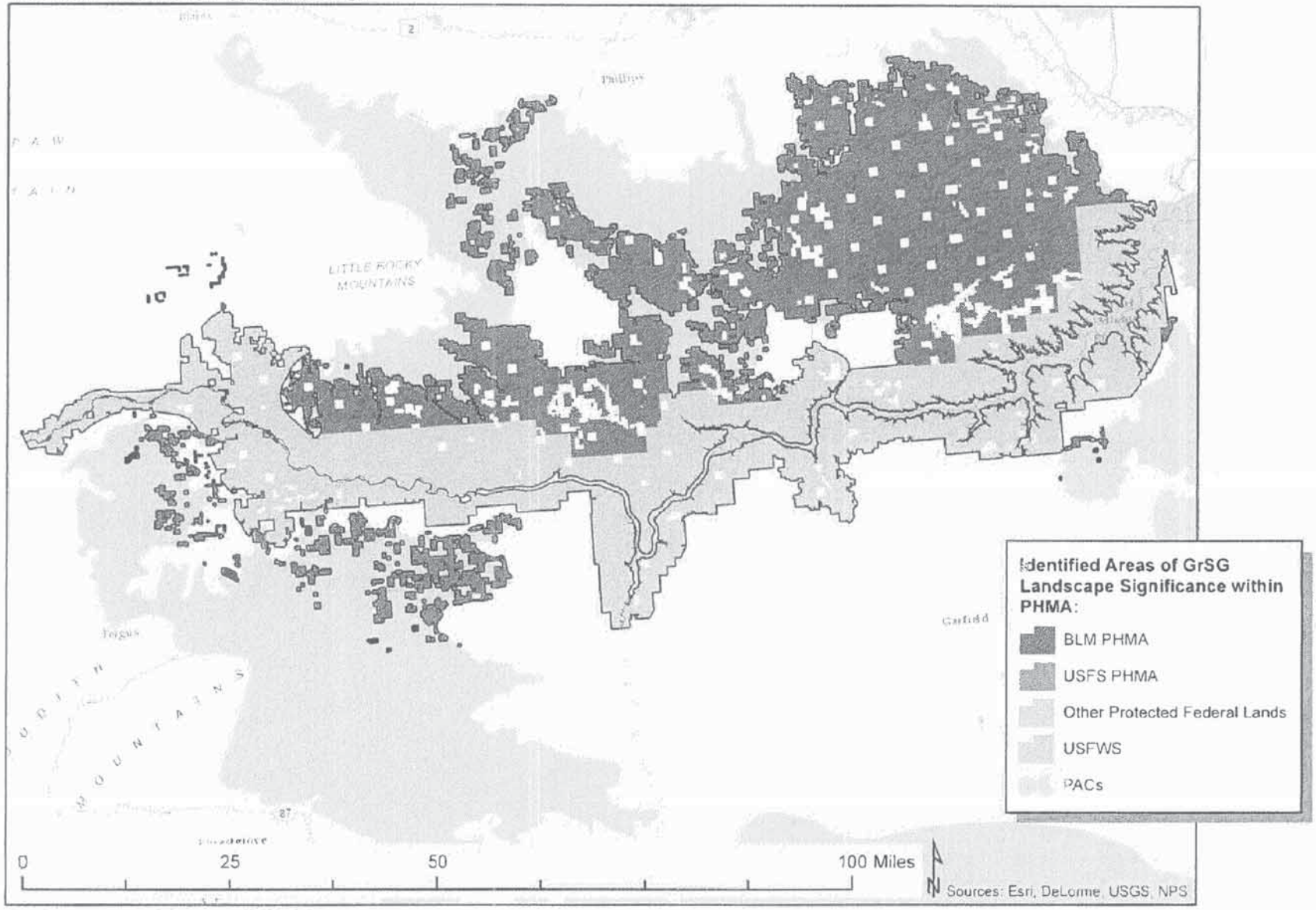
Identified Areas of GrSG Landscape Significance within BLM/USFS PHMA: North Central Montana



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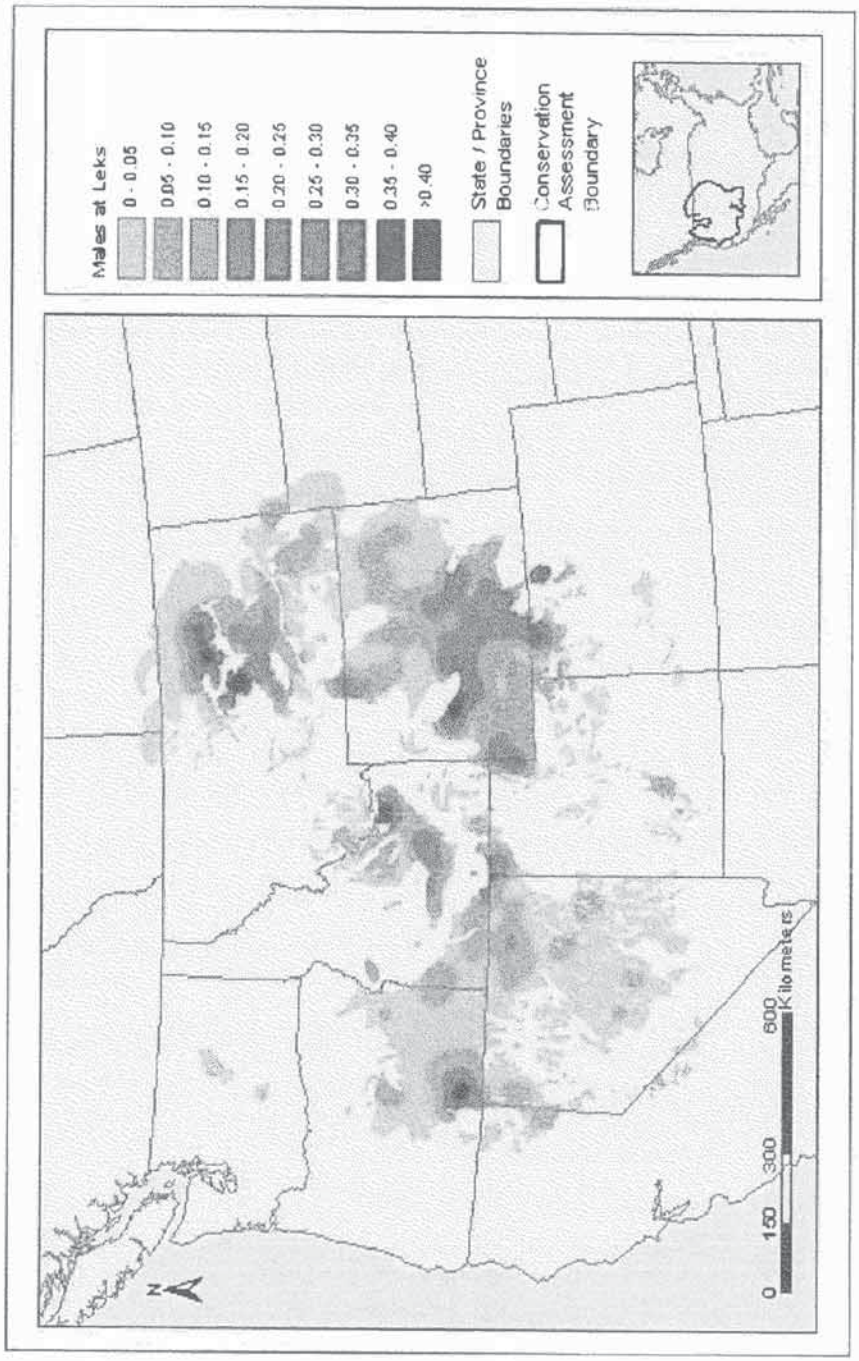


Figure 13.1 Strongholds for breeding populations of sage-grouse in western North America.

Note: The darker shades represent the greatest densities of males/km^2

Source: Connelly, J.W., Knick, S.T., Schroeder, M.A., and Stiver, S.J., 2004. Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.

Documentation and Appraisal of Known Gas Seeps within the Atlantic Rim Coal Bed Natural Gas Development Area Carbon County, Wyoming

By
Jon N. Dull
Petroleum Engineer, Rawlins Field Office

February 6, 2007

Introduction

To date we have become aware of and located several gas seeps within the Atlantic Rim Project Area (ARPA). So far these seeps have been found in association with natural occurring water springs. Due to the physical appearance of the gas seeps they have also been referred to as gas bubblers, mud bubblers, mud pots and mud bogs. Three locations have been identified within the ARPA wherein the seeps tend to be grouped in close proximity to one another. The locations of these seeps are as follows:

- 1 seep (Bubbler #1) in the extreme southeast corner of Section 16, T16N, R91W
- 4 seeps (Bubbler #'s 2, 3, 4 & 5) within the proximity of Deep Gulch drainage
  - 3 seeps(Bubbler #'s 3, 4 & 5) located close to the center of the S/2 S/2 of Section 27, T16N, R91W
  - 1 seep (Bubbler #2) likely associated with and just SW of the 3 seeps noted above is located in the NW/4 NW/4 of Section 34, T16N, R91W
- 5 seeps (Bubbler #'s 6, 7, 8, 9 & 10) within the proximity of the Wild Cow Creek drainage in the center of the S/2 N/2 of Section 15, T15N, R91W

History

Andy Stone provides the following historical information regarding gas seeps (aka mud volcanoes) within the Rawlins Field Office:

> *The earliest reference to the mud volcanoes is Dennis Knight's book, Mountains and Plains, p. 125. He describes the small area of mud volcanoes or mud springs in the lowest part of the Great Divide Basin, the Chain of Lakes area north of Wamsutter. The conical mounds are 1-5 m high and are surrounded by mudflats or playas. At one time a mud slurry oozed from their summits, then dried.*
>
> *Hayden visited the area in 1877, and described them in his report of 1879. At that time the mounds had pools of muddy water at the top. Bubbles of gas would periodically rise to the surface. "A rifle-ball shot down vertically into one of the openings produced a sudden eruption of the whole mass. Water and mud were thrown to a height of about 10 feet, covering the luckless experimenter from head*

to foot. From a safer distance the trial was several times repeated and almost always followed by the same result..." Crude as this test may be, it shows the presence of gas at some depth, held there under mechanical pressure.

Knight says that the mud volcanoes appear to be dormant (1994) but there is so little weathering that the springs must have become inactive recently. So maybe they have come alive again!

Bubbler #1:

September 2005 - Atlantic Rim field trip comprised of Jon Dull, John Ahlbrandt and Bob Lang. John Ahlbrandt had pointed out the flowing well Cherokee Creek 1-22 (aka Spitter Well & Duck Lake Well) after which he made a slight detour so that he could point out what was to become known as Bubbler #1. It was located on a knoll that was less than ¼ mile to the north west of the Cherokee Creek 1-22 well and appeared to be nothing a more than a circular pool of muddy water approximately 5 to 8 feet in diameter with a gentle rolling action in the center of the pool. Bubbler #1 also appeared to be located on an old abandoned well pad location that was void of any vegetation. The overall appearance led to the inference that the water might be coming from an improperly abandoned well.

August 2006 - The site was visited again with no apparent visual change of the spring.

September 2006 - After pointing out the location of Bubbler #1 to Anadarko, they dug into the bubbler with a back hoe to a depth of approximately 18 feet in an attempt to find any evidence of an abandoned well. Nothing was found. As a result of this lack of evidence it can be surmised that the water source was from a natural source.

October 2006 - Pat Sena and Sherri King visited the site and marked the GIS location. They also attempted to detect gas emissions with their gas monitors. No gas emissions were detected.

January 2007 – Andy Stone, Jon Dull & Ed Heffren (WSO) visit site and detect methane gas emissions. At this time the water pool had frozen over and developed a broad, low lying conical mound that was approximately 2 feet high. Low level methane emissions were detected at this time.

Bubbler #'s 2, 3, 4 & 5:

October 2006 - Jerry Dickenson stumbles across bubblers while on a hunting trip and identifies the approximate location. Within the approximate same time frame Andy Warren points out the location of the same bubblers to Andy Stone.

December 2006 - Bob Lang and Andy Stone inventory the site. They identify the GIS locations and take water samples.

January 2007 - Andy Stone, Jon Dull & Ed Heffren (WSO) visit site and detect methane gas emissions.

Bubbler #'s 6, 7, 8, 9 & 10:

October 2006 - Andy Warren points out location of bubblers to Andy Stone. No GIS identification was made at this time. Pat Sena and Sherri King visit the site and identify the GIS locations. In addition, Pat and Sherri detect methane emissions from this site with their gas monitors.

December 2006 - Bob Lang and Andy Stone inventory the site. They identify the GIS locations and take water samples.

Andy Warren has worked in the RFO for 27± years. In a recent conversation with Andy Warren, he noted that he has known about the bubblers for an amount of time approaching his time of work duration in the RFO. He further noted that the vigor of activity of the bubblers in the past was not much more than just a gentle rolling action in the center of the water pools. He further noted, in a qualitative sense, the vigor of the bubblers seems to have increased dramatically since the commencement of coal bed natural gas (CBNG) development in the immediate vicinity.

Cause and Source of the Gas Seeps

After the early reports of the gas seeps came in it was noted that the source of the seeps might be the result of improperly abandoned core holes that were drilled by the USGS in the 1970's. The USGS drilled these core holes into the Mesaverde coals in an effort to map these coals and determine their aerial extent and resource value.

Through the efforts of Andy Stone, 201 core hole locations were found in the RFO archives. Of the 201 core hole locations, 106 of the core holes are known to have been drilled and their locations identified by north and south measurements from the section lines in the sections in which they were drilled. The locations of the remaining 95 core holes were noted only by their approximate location in the nearest section quarter quarter for the section in which they were drilled. Both the known and approximate locations of these core holes were subsequently placed on a map along with the GIS coordinates of the gas seeps to see if there was any coincidence of location. The results turned out negative. Neither the 106 known core hole locations nor the 95 core holes with approximate locations coincided with the GIS locations of the gas seeps. From this information, it can be concluded that the core holes are not the cause of known gas seeps.

Upon comparing the location of the gas seeps to geologically mapped outcrops of the Lewis shale and the Mesaverde formations, it was noted that the gas seeps are located in the Lewis shale near the Lewis/Mesaverde contact. While the source and the plumbing of the gas seeps are not known with any degree of certainty, it is likely that both the water and the gas are originating from the Mesaverde coals. It should be noted there is a lack of supporting technical data and information to support this statement.

Location of Other Gas Seeps

Further attempts were made to locate additional gas seeps through the use of aerial photography. It was originally thought that by reviewing aerial photographs of known gas seep locations that might have a typical "identity pattern" (IDP) that might be extrapolated or compared with other areas to identify sites with the same or similar IDP. The gas seep locations were reviewed on aerial photos taken in 2001. While the gas seeps could be seen in the photos, the resolution of the photos was not great enough to make an IDP let alone extrapolate that IDP to other areas. Thus, this method of gas seep location identification proved fruitless.

Ed Heffren (WSO) suggested that it may be possible to locate other seep locations through the use of more sophisticated methods. These methods might possibly include the use of other aerial photographs or satellite photos that see the light spectrums of infrared and near infrared or possibly other identifying wave lengths within the light spectrum. To date this idea has not been explored.

It is likely that the only way that other gas seeps will be located is by actual boots on the ground exploration.

Concerns

A primary concern about the gas seeps is that there is a high degree of likelihood that the amount of gas being emitted will increase and that the amount of water emitted from the seeps will decrease as CBNG development increases within the ARPA. The primary process by which natural gas is produced from the coals is through a dewatering process where the hydrostatic head (pressure) is reduced, within the coal beds, below the gas adsorption pressure of the coals. This is accomplished by pumping water from the coal beds, which in turn allows the adsorbed gases to be released from the coals and then produced through the same well bore that water is being produced from.

The same process is likely to occur in the gas seeps.

Cause:

The ground water model that was run for ARPA predicts the drying up of natural water springs in the ARPA (dewatering). We have yet to see any evidence of this

at the gas seeps. However, if the ground water model is correct, there exists a good likelihood for this happening.

Effect:

As with controlled CBNG production, increased CBNG production is likely to occur from the gas seeps.

This already seems to be occurring as noted by Andy Warren's statement that the vigor of the bubblers seems to have increased dramatically since the commencement of CBNG development. It could very well happen that the water being emitted from the seeps completely dries up. Thus, allowing CBNG to be emitted unhampered and unchecked from the seeps.

Other concerns that precipitate from the likely increase gas seep emissions are:

- Potential damage to the atmosphere by elevated emission of coal bed gases. All of the constituents of the coal bed gases are considered to be greenhouse gases and incompatible with the well being of the earth's atmosphere.
- Potential danger to human and animal safety:
  - Accidental ignition by an unaware tourist/hunter could result in someone being seriously burned. Natural ignition via lightening or spontaneous combustion of exposed coal bed could cause wild fires that would be a danger to human life, wildlife and vegetation.
  - Some of the potential constituents of coal gases like hydrogen sulfide and carbon dioxide are poisonous to humans and wildlife. They are also heavier than air and can settle in low lying basin areas and can create potential traps for the unknowing and unwary.
- Potential danger to vegetation.
  - Some of the coal gas constituents like methane and hydrogen sulfide are incompatible with plant life and can result in vegetation die off in the adjacent vicinity of the seeps. In the San Juan Basin of Colorado there have been extensive vegetation kills adjacent to gas seeps associated with the coal bed outcrops that are being developed for CBNG.

Monitoring

Soil Monitoring

All of the above concerns pose potential liability to federal government if they are not somehow addressed. It would be through some sort of a monitoring process that the BLM would be able to come to grips with this liability conundrum. To date we have only been able to qualitatively observe the gas seeps, i.e. Andy Warren's previously noted statement. If any monitoring is to be done it should be primarily of a quantitative nature supplemented by qualitative observation.

Towards this end, the BLM's field offices in Buffalo, Wyoming and Durango, Colorado were consulted to see if they had any coal gas seeps in their areas of jurisdiction and if so, what they were doing about it. In speaking with various people in these BLM field offices the name of Ed Heffren of the Wyoming State Office finally arose. Ed had been instrumental in developing a program for monitoring methane in the soils near coal gas seeps for both the Powder River Basin (PRB) and the San Juan Basin (SJB).

There are essentially two quantitative methods that are being used in both the PRB and SJB, which will be referred to herein as Gas Monitoring Method 1 (GMM1) and Gas Monitoring Method 2 (GMM2).

GMM1 consists of taking periodic gas flow and gas composition measurements from collection tubes that have been planted in the ground to a depth of approximately 2 feet. The tubes are open ended below ground level and closed above ground allowing gas to collect within the tubes and to be later sampled at a desired time interval.

GMM2 is somewhat more sophisticated. It consists of a 4 sided pyramidal flux chamber (3 feet x 3 feet at the base and 3 feet high) that sits on the ground. Gas is collected through the open base of the pyramid and the gas flux rate and composition is continuously measured as it exits through an orifice at the top of the pyramid. Permanently installed electronic measurement equipment is the means by which the gas properties are measured as it exits the top of the flux chamber.

Both GMM1 and GMM2 have been employed in both the PRB and the SJB with GMM2 being used to a greater extent in the SJB. At first glance it would seem that GMM2 would furnish more information by being able to continuously monitor gas flux and composition changes over time. However, Dave Swanson in the Durango Field Office, who has been overseeing the gas monitoring in the SJB, is of the opinion that GMM2 needs too much fine tuning and tweaking of the electronic equipment that is incorporated into the system. He says that when they are working they work fine, but their reliability for working on a continuous basis is not very good. Dave further recommends the use of GMM1 due to the reliability of the method and the lack of need to be continually messing with electronics incorporated into the system.

Monitoring Wells

In addition to monitor gas in the soil near the gas seeps the RFO has already taken measures to monitor the aquifers overlaying the coal beds. This will be done by requiring Anadarko to drill a cluster of 3 ground water monitoring wells through the authority of the proposed federal unit agreements for the Black Pearl Unit and Jack Sparrow Unit. By drilling these ground water monitoring wells we will be able to monitor the aquifer pressure, gas pressure and composition and water flow rate if the water flux into the well bore is of an artesian nature.

Mitigation and Remediation

Should results of the monitoring described above indicate the need to mitigating or remediate the gas flux from these seeps, there exist a couple of possible alternatives.

Encapsulation

One method would be to encapsulate the gas seep on the surface and capture the gas and sell it. This could be accomplished by enclosing the area around the gas seep with a concrete footing and sealing the top with a metal dome or possibly an enclosure that would resemble half of a cylindrical steel tank lying on its side. The structure would be fitted with the appropriate control equipment to allow for the capture of the gas and allow for any associated water to be put back onto the ground.

Remediation Well(s)

The other method would be to drill one or more remediation wells into the top of the Mesaverde formation in close proximity to and down dip from the gas seeps. After the well(s) reach total depth casing would be run and cemented in place. The shoe of the casing would be drilled out and a cement slurry would be pumped into the surrounding formation in an attempt to block the surface flux of gas and water from the seeps. This is similar to what is sometimes done when a gas or oil well blows out and an attempt is made to bring the well under control. However, with a well blow out, the underground point source for the oil and gas fluxing at the surface is known while the underground point source for the gas seep flux is an unknown. Due to this uncertainty of the below ground gas flux point source, the potential for the success of this type of operation is unknown.

Conclusion and Recommendations

As previously discussed, there exist some fairly severe safety and environmental concerns and potential liability concerns for the federal government that are associated with the gas seeps in the ARPA. At this point in time there is no scientific data available to prove or disprove that CBNG development within the ARPA has caused or will cause increased gas flux from the known gas seeps. However, it is likely that future CBNG development may cause increased quantities of gas to be emitted from the known seeps. It is also possible that there exist other seeps within the ARPA that are yet to be discovered. As a result of the forgoing the following recommendations are presented:

1. Known gas seeps should be posted and possibly fenced so as to alert any unwary pedestrians of the potential dangers.

2. Identify on the ground all the known and approximate locations of the core holes that were drilled in the early 1970's in order to give credence to the assumption that none of these locations have somehow turned into gas seeps.

3. Due to the fact that Anadarko and their partners are the primary CBNG developers within the ARPA, they should play a major financial role in the backing of any future monitoring, mitigation and remediation measures that are herein recommended.

4. A soil gas monitoring program should be designed and implemented to monitor soil gas emissions in the immediate vicinity of the known gas seeps and any seeps that may be discovered in the future. The monitoring program should be carried out by a nonbiased third party, paid for by Anadarko and supervised by the BLM. The program should consist of using the GMM1 that was previously described herein and gas samples taken on 1 to 3 month intervals in order to establish base line data and identify any gas flux increases associated with the seeps. Qualitative visual monitoring should also be incorporated as part of the monitoring site visits for GMM1. This should include field notes that incorporate the observed physical vigor of the seeps along with digital video and digital still photographs.

5. Require that Anadarko drill and complete the three well cluster of aquifer monitoring wells irrespective of being required by the Black Pearl and Jack Sparrow unit agreements. Require the drilling of additional ground water monitoring well clusters should future need for this type of monitoring be indicated from historical data that is collected.

6. In the event that mitigation or remediation is deemed necessary, the amount of water being emitted from the seeps needs to be determined so that water volume replacement alternatives can be considered and implemented if necessary.

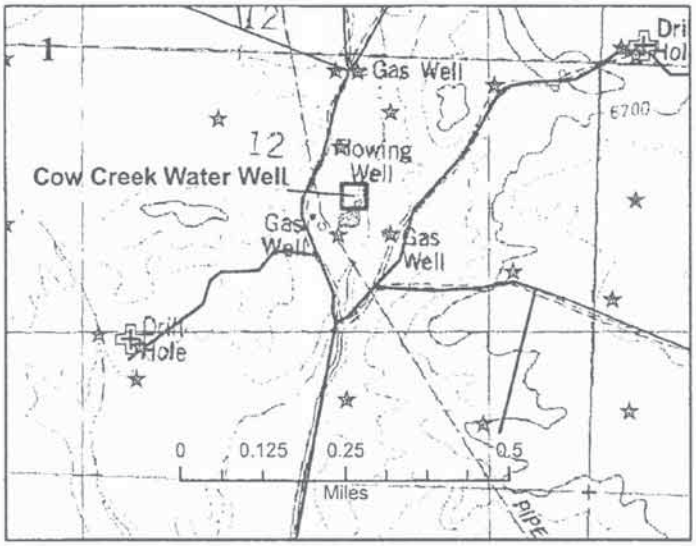
7. Should the results of the monitoring program indicate that gas emissions from the seeps are increasing and that mitigation or remediation measures need to be implemented, Anadarko should pay for any associated costs.

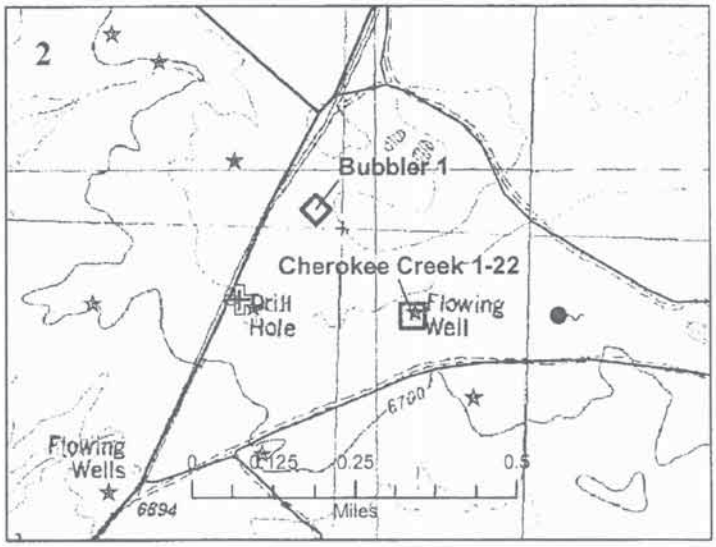
Acknowledgements

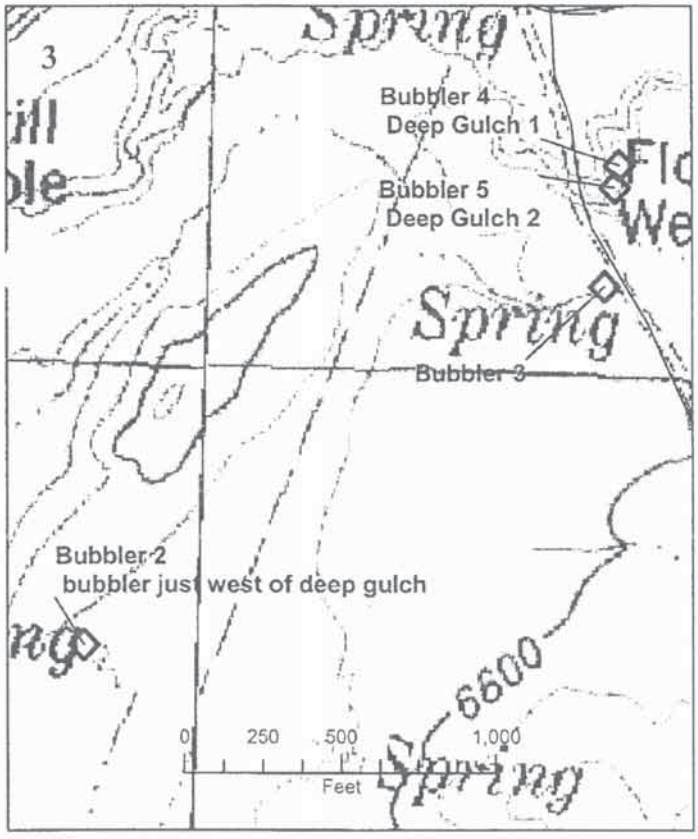
Special thanks and acknowledgement is given to the individuals who have contributed to the development of this paper. Andy Stone and Bob Lang have contributed substantially through their efforts of archival research, mapping input, field inspections and data gathering. Thanks to Pat Sena and Sherri King for their early field inspection and gas detection efforts. Thanks to Brian Robeson for his assimilation of the GIS data and mapping. Thanks to Jerry Dickinson for initially locating some of the gas seeps. Thanks to Ed Heffren of the Wyoming State Office and Dave Swanson of the Durango Field Office for their input of information regarding soil gas monitoring techniques.

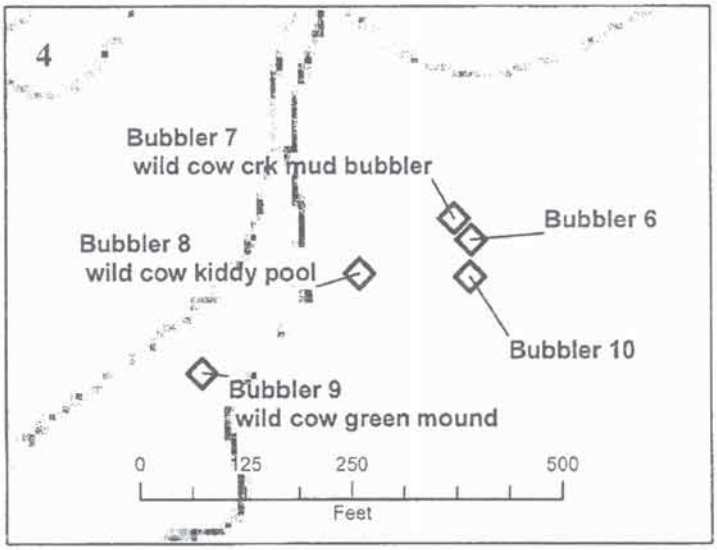
Thanks to Andy Warren for locating the seeps and his historical reference and knowledge of the gas seeps reviewed. Thanks to Andy Skordas for his CAD input.

RFO Wells of Critical Concern in the Atlantic Rim Area





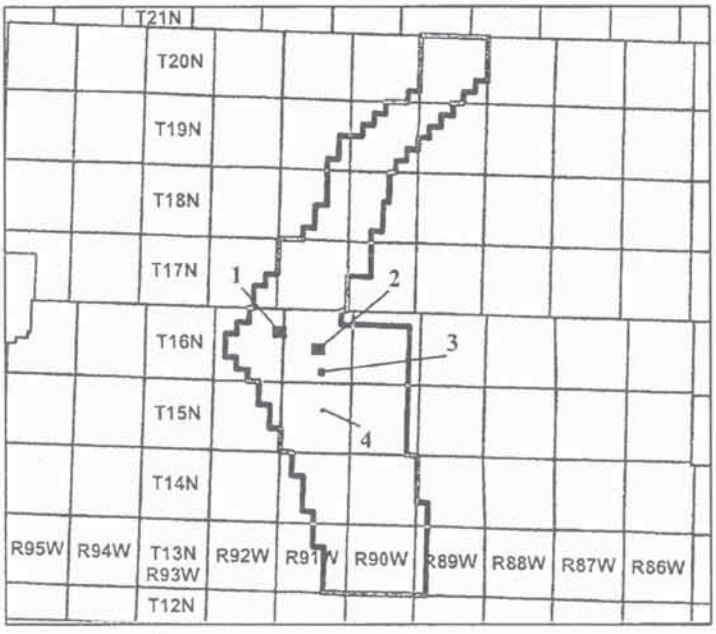




RFO Wells of Critical Concern

Type

- ◇ Bubbler
- Flowing Gas/Water Well
- ●~ Flowing Wells (Bob's)
- ⊕ Proposed Core Hole Locations
- ★ CarbonWells09052006



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CONSERVATION EASEMENT

WYOMING RANCH COMPANY, LLC (the "Grantor") and the WYOMING LAND TRUST (the "Grantee") hereby enter into this Conservation Easement (the "Easement") on _____, 2011 (the "Effective Date").

BACKGROUND

A. Grantor is a Wyoming Limited Liability Company in good standing with a principal mailing address of 1981 North Broadway, Suite 415, Walnut Creek, California 94596.

B. Grantee is a Wyoming nonprofit corporation with a principal mailing address of P.O. Box 1580, Pinedale, Wyoming 82941. Grantee is a charitable organization described in Code Section 501(c)(3), that meets the public support test of Code Section 509(a)(2). Grantee has a commitment to protect the Conservation Purposes (as defined below) of this Easement because it is organized and operated primarily or substantially for at least one of the conservation purposes specified in Code Section 170(h)(4)(A), and has the resources to enforce the restrictions described in this Easement. Grantee is a "qualified organization" under Code Section 170(h)(1)(B) and Regulations Section 1.170A-14(c)(1), and is also a "holder" as defined by Wyoming Statutes, Section 34-1-201(b)(ii)(B).

C. Grantor owns certain real property located in Sweetwater County, Wyoming consisting of 480 acres, more or less, and as more particularly described in Exhibit A (the "Property"). This Easement incorporates Exhibit A by reference.

D. The Property has certain conservation values (the "Conservation Values") generally described as follows:

D.1. The Property lies within the "Great Divide Basin" Crucial Habitat Priority Area identified by the Wyoming Game and Fish Department ("WGFD") in 2009. WGFD selected this area because, among other things, it provides "crucial winter range for pronghorn," provides "core sage-grouse breeding, nesting and brooding habitat," and "supports a number of [Species of Greatest Conservation Need] identified in [Wyoming's Comprehensive Wildlife Conservation Strategy]."

D.2. The Property lies within a 3-mile buffer of the Windy Hill sage grouse lek, first identified by WGFD in 1975.

D.3. The Property provides habitat for a variety of Wyoming's Species of Greatest Conservation Need according to WGFD.

D.4. The Property provides habitat for mule deer, elk, and pronghorn according to WGFD.

D.5. The Property, though privately owned, provides open space for the scenic enjoyment of the general public because development of the property would impair the scenic character of the local rural landscape and would interfere with a scenic panorama that can be enjoyed from nearby Bureau of Land Management land that is open to and/or utilized by the public. By conserving the Property as open space for the scenic enjoyment of the general public, the Parties intend this Easement to yield a significant public benefit and do not intend this

Easement to permit a degree of intrusion or future development that would interfere with the essential scenic quality of the land that is being furthered by Grantor's donation

E. The resource inventory (the "Inventory") attached as Exhibit B describes the Conservation Values in greater detail. This Easement incorporates Exhibit B by reference. The Parties intend the Inventory to be documentation sufficient to establish the condition of the Property at the time of Grantor's gift. The Parties acknowledge that Grantee made the Inventory available to Grantor prior to the time Grantor conveyed this Easement, and further acknowledge and agree that the Inventory is an accurate representation of the Property at the time of the conveyance of this Easement.

F. Grantor wishes to convey to Grantee, and Grantee wishes to accept from Grantor, this Easement for the "Conservation Purposes" of restricting uses of the Property to those consistent with the Conservation Values in order to preserve and protect the Conservation Values in perpetuity.

G. As evidenced by a vacation instrument recorded contemporaneously with this Easement, this Easement shall replace and supersede the following "Protective Covenants" recorded in the Office of the Clerk of Sweetwater County, Wyoming: (1) Protective Covenants recorded September 15, 2008, in Book 1129, Page 379, under Recording #1544060; (2) Protective Covenants recorded April 22, 2010, in Book 1163, Page 1304, under Recording #1580173; and (3) Protective Covenants recorded September 21, 2010, in Book 1171, Page 469, under Recording #1589527.

H. The Parties intend Grantor's donation of this Easement to be a "conservation easement" as defined by Wyoming Statutes, Section 34-1-201(b)(i).

I. The Parties intend, subject only to the Conservation Purposes, to permit all other uses of the Property that are not inconsistent with the preservation and protection of the Conservation Values, as determined by Grantee in its sole discretion, or that are not expressly prohibited in this Easement. The Parties do not intend anything in this Easement to compel a specific use of the Property other than the preservation and protection of the Conservation Values.

J. Certain capitalized terms used within this Easement are defined in Section 16.

EASEMENT

In consideration of the Background (which this Section of the Easement incorporates by reference), the mutual promises and covenants contained in this Easement, and other good and valuable consideration contained in this Easement, the Parties agree as follows:

1. The Conveyance. Grantor voluntarily, irrevocably and unconditionally grants and conveys to Grantee, with respect to the Property, of the nature and character described in this document for the Conservation Purposes described above, and Grantee voluntarily accepts from Grantor, a perpetual "conservation easement" as defined by Wyoming Statutes, Section 34-1-201(b)(i).

1.1. Elimination of Development Rights. Grantor voluntarily, irrevocably and unconditionally grants to Grantee all of the "development rights" pertaining to the Property, except for those development rights that Grantor expressly reserves in this Easement. As used in this Section, "development rights" means all development rights and development potential that

are now, or might be, allocated to, implied, reserved or inherent in the Property including, without limitation, subdivision and development density rights and potential, and the right to use any of the acreage of the Property in any acreage calculation that creates or contributes to additional development on or off the Property, whether such rights exist now or in the future under federal, state or local law, or otherwise. Grantor unconditionally and irrevocably relinquishes the right to transfer such development rights to any other property, or use such development rights for the purposes of calculating permissible lot yield, density, or development potential of the Property or any other property. The Parties agree that all such development rights are hereby terminated and extinguished in perpetuity. To elaborate without limitation: For purposes of this Section, the Property shall be considered to be non-existent for purposes of all development rights and development potential, or calculations pertaining thereto, of any and every nature, except for those development rights expressly reserved by Grantor in this Easement.

1.2. Bundled Property Rights. The Parties acknowledge and agree that this Easement conveys to Grantee a bundle of property rights that are, by this Easement's terms, irrevocably and unconditionally removed from the Property. These rights are defined by the list of "Reserved Rights and Uses" in Section 5 and "Prohibited Uses" in Section 6 below. The Parties intend, by thus controlling and limiting the rights to the future use of the Property, to permanently protect the Conservation Purposes for the benefit of the public, and permanently conserve the Property, according to this Easement's terms.

1.3. No Rights Granted to Third Parties. The Parties acknowledge and confirm that Grantor's conveyance of this Easement does not give or create for Grantee, any person, or the public, any right to access, use or possess the Property. Notwithstanding the foregoing, Grantor's conveyance does give Grantee the right to:

1.3.1. Prevent Grantor from using the Property in ways that are inconsistent with the terms of this Easement; and

1.3.2. Enter the Property for purposes of monitoring and enforcing compliance with the terms of this Easement, as expressly provided below.

1.4. Easement Runs with the Land. The Parties intend that the restrictions on the future use of the Property imposed by this Easement will run with the land and bind all future owners of the Property and any portion of it, and that this Easement will be enforceable by Grantee, in perpetuity.

1.5. Grantor's Possession, Control and Use. The Parties acknowledge and agree that Grantor will have sole possession, control and use of the Property, except as otherwise limited in this Easement and except for Grantee's rights to monitor the Property and enforce the provisions of this Easement.

2. Mutual Consideration. This Easement irrevocably and unconditionally conveys a real property interest in the Property to Grantee. In exchange, Grantee agrees to monitor the use of the Property, and enforce the restrictions on the future use of the Property imposed by this Easement, in perpetuity. The Parties recognize that accepting the responsibility to permanently monitor and enforce such restrictions represents a substantial commitment of time and financial resources by Grantee.

RECEIVE: NO.1411 03/04/2015/WED 03:01PM BLM Wyoming M & L

3. Grantor'sWarranties. Grantor represents, warrants and covenants that, as of the Effective Date and to the best of Grantor's knowledge:

3.1. Grantor is lawfully seized of an indefeasible estate in fee simple in and to the Property, and has a good right and power to convey this Easement;

3.2. Grantor possesses the authority to convey this Easement;

3.3. No mortgages, liens, or other encumbrances affecting the Property exist that would prevent Grantee from enforcing the terms of this Easement;

3.4. Grantee, and its successors and assigns in title to this Easement, will have the quiet and peaceful possession of this Easement;

3.5. No Hazardous Materials exist, or have been previously generated, treated, stored, used, disposed of, deposited, or transported, in, on, or across the Property, and that there are no underground storage tanks located on the Property;

3.6. Grantor and the Property are in compliance with all federal state, and local laws, regulations and requirements applicable to the Property and its use;

3.7. There is no pending or threatened litigation in any way affecting, involving, or relating to the Property; and

3.8. No civil or criminal proceedings or investigations have been instigated at any time or are now pending, and no notices, claims, demands, or orders have been received, arising out of any violation or alleged violation of, or failure to comply with, any federal, state, or local law, regulation, or requirement applicable to the Property or its use.

3.9. Grantor will defend title to the Property, and Grantor's right to convey this Easement, according to this Easement's terms, against all persons who may claim such title or challenge Grantor's right to make this conveyance.

4. Rights Conveyed to Grantee. To accomplish the Conservation Purposes, Grantor conveys to Grantee, and Grantee's employees and representatives, the rights to:

4.1. Preserve the Conservation Values in Perpetuity. Identify, preserve and protect the Conservation Purposes in perpetuity, subject to the terms of this Easement, with the understanding that nothing in this paragraph gives Grantee the right to expand the Conservation Purposes beyond those defined in this Easement or included in the Inventory.

4.2. Enter the Property to Monitor and Enforce. Enter the Property to monitor its use and enforce compliance with this Easement's terms, provided that Grantee does not (a) exercise its right to enter the Property in a manner that unreasonably interferes with Grantor's proper uses of the Property when Grantee enters and (b) enter the Property without giving Grantor at least seven (7) days' advance written notice, except as provided below.

4.3. Enter the Property without Notice. Enter the Property without notifying Grantor if:

4.3.1. Grantee determines that immediate entry is essential to prevent, or mitigate, a violation, or threatened violation, of this Easement; or

4.3.2. Grantor has not provided Grantee with an address to which Grantee can send written notice as required by Section 8.

4.3.3. If Grantee enters the Property without notifying Grantor, Grantee will limit its actions to those necessary to prevent, or mitigate, a violation or threatened violation. In addition, as soon as possible after Grantee enters the Property without notifying Grantor, Grantee will explain to Grantor in writing why Grantee needed to enter the Property without notifying Grantor and what, if any, actions Grantee took while on the Property.

4.4. Legally Remedy Violations. Legally remedy violations of this Easement's terms, including:

4.4.1. Enjoining any activity on, or use of, the Property that violates the terms of this Easement as provided under Section 9;

4.4.2. Enforcing the restoration of such areas or features of the Property that may be damaged by any activity on, or use of, the Property that violates the terms of this Easement as nearly as possible to the condition that existed prior to the date this Easement was recorded as provided under Section 9; and

4.4.3. Seeking and recover damages and costs as provided under Section 9.

4.4.4. Notwithstanding Grantee's right to legally remedy violations of this Easement's terms, nothing in this Easement entitles Grantee to bring any action against Grantor for any injury to, or change in, the Property resulting from causes beyond Grantor's control, including acts of trespassers, unauthorized wrongful acts of third parties, fire, flood, storm, earth movement, invasive or noxious weeds, tree disease, or any prudent action necessarily taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from any of these causes. This paragraph takes precedence over any other provision in this Easement, express or otherwise, unless Grantor may reasonably be expected to have knowledge of an impending, or ongoing, violation of the terms of this Easement by a trespasser or third party and fails to take reasonable and prudent steps to prevent or stop such violation.

5. Reserved Rights and Uses. As of the Effective Date, Grantor uses the Property for non-commercial recreational purposes. Under this Easement, Grantor reserves the right to continue these uses, as well as the other uses described in this Section, provided Grantor undertakes such uses only in a manner that is consistent with the Conservation Purposes and any other specific standards related to a particular use below. In some cases, this Easement conditions the right to undertake a reserved use on Grantee's advanced written approval according to the provisions of Section 8.3. Subject to these conditions, Grantor reserves the right to:

5.1. Agriculture. Use the Property for only the following agricultural uses: (a) grazing, pasturing and maintaining livestock; (b) constructing and maintaining stock water wells; and/or (c) leasing any or all of the Property for grazing, pasturing and maintaining livestock, provided the lease incorporates by reference the terms of this Easement as required by Section 17.4. This provision shall not be deemed to require such uses of the Property, but only the preservation of its availability for such uses. Grantor shall make all reasonable efforts to undertake agricultural uses in a manner that maintains habitat for wildlife and does not disturb habitat enhancements, including water guzzlers. Grantor is encouraged to consult with the

USDA Natural Resource Conservation Service, or a similar, qualified organization, to ensure that agricultural uses are undertaken in such a manner.

5.2. Improved Management. Implement new, improved methods for reserved agricultural uses and general management of the Property's natural resources as those methods become available. Before implementing any substantial change in current land management practices, Grantor must notify Grantee and obtain Grantee's written approval for the proposed change, which Grantee will not withhold unreasonably.

5.3. Fencing. Build, maintain, relocate, repair, and use fences on the Property to fence out livestock, particularly from habitat enhancements, including water guzzlers. Any new, relocated or substantially replaced fencing (meaning fencing where more than half of a particular run is replaced) must be configured to reasonably allow wildlife to move on or across the Property unless such configuration diminishes the fence's function for the purposes described above. Grantor will restore any areas disturbed for construction of new or replacement fencing as provided in Section 5.14.

5.4. Utilities. Install, maintain, remove, repair, replace, and use utility systems within existing, or currently identified, utility easements or rights of way, as necessary for reserved agricultural uses. Except for existing utilities, or utilities to be located within existing rights of way over which Grantor has no control, utilities must be located underground to the extent practical (recognizing that what is practical does not only depend on financial considerations). The requirement that utilities be located underground does not apply to junction boxes, meters, transformers, and similar equipment that cannot be located underground. The area disturbed to install, maintain, remove, repair or replace utilities will be the minimum amount reasonably necessary and be promptly restored according to the provisions of Section 5.14.

5.5. Roads and Trails. Use roads and trails on the Property as follows (as used in this paragraph, "road" means a hard-surfaced, open way for 4-wheeled vehicles, persons, and animals, and "trail" means a marked or established single-track route for 2-wheeled vehicles, persons and animals):

5.5.1. Use, maintain, relocate, or remove, the existing roads and trails shown in the Inventory, if any; and

5.5.2. Grantor may not pave existing trails, but may cover them with gravel, woodchips, or similar materials. Any area disturbed to construct, use, maintain, relocate or remove existing or new roads and trails will be the minimum amount reasonably necessary and be promptly restored according to the provisions of Section 5.14. If Grantor relocates any road or trail, Grantor will restore the area originally occupied by the road or trail according to the provisions of Section 5.14.

5.6. Motorized Vehicles. Use motorized vehicles, including snowmobiles and ATVs on reserved roads and trails anywhere on the Property and off reserved roads and trails as necessary for (a) reserved agricultural uses, (b) reserved recreational uses (provided that Grantor may not use motorized vehicles for any purpose where use of the vehicle itself is the primary recreational activity), (c) fire suppression, (d) emergency or severe winter weather access to the Property when ordinary vehicle access is not available, and (e) normal maintenance.

5.7. Planting. Plant and maintain native, non-noxious, plant species or other plant species common to current agricultural practices in the county where the Property lies, (a) to maintain plant and animal habitat existing as of the Effective Date and (b) for reserved agricultural uses.

5.8. Chemicals. Use chemicals (a) for reserved agricultural uses and (b) to control noxious weeds and pests (including spraying chemicals from an aircraft to control mosquitoes). Grantor may only use chemicals according to the manufacturer's instructions and in amounts necessary for the particular purpose. Notwithstanding anything herein to the contrary, this Section will not be construed so as to impose any liability on Grantee for Hazardous Materials, nor will it make Grantee an "owner" of the Property, nor will it permit or require Grantee to control any use of the Property that may result in the treatment, storage, disposal or release of Hazardous Materials within the meaning of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA").

5.9. Recreation. Use the Property for non-commercial recreational uses, including, without limitation, hiking, camping, snowshoeing, horseback riding, cross-country skiing, wildlife observation, photography (including commercial photography), or other traditional non-commercial recreational activities. Grantor may lease any or all of the Property for these uses, provided the lease incorporates by reference the terms of this Easement as required by Section 17.4.

5.10. Scientific Study. Use the Property for scientific study of wildlife, plant and animal habitats, agricultural practices and/or forestry practices.

5.11. Vegetation Removal. Remove vegetation as follows:

5.11.1. Remove dead trees that pose a threat of injury to people, livestock, or domestic animals;

5.11.2. Clear vegetation as necessary to (a) install reserved utilities, (b) construct and maintain reserved roads and trails, (c) prevent and suppress fire, and (d) stop the spread of insect infestation or disease. Unless necessary to protect structures from approaching fires, Grantor may only remove vegetation to prevent and suppress fire and stop the spread of insect infestation or disease with Grantee's prior written approval, which Grantee will not withhold unreasonably.

5.12. Noxious Weeds. Control the spread of noxious weeds to the extent reasonably possible.

5.13. Problem Animals. Control problem animals using only selective methods limited in their effectiveness to specific animals reasonably believed to have caused damage to livestock, crops or other property. Grantor may not use cyanide, or other non-selective techniques.

5.14. Surface Disturbance. Grade, fill, level, berm or ditch as reasonably necessary to (a) accomplish uses expressly reserved in this Easement, (b) prevent damage to the Property including, without limitation, damage to structures, utilities and other improvements from surface water run-off and migrating water courses, and (c) repair any areas damaged by migrating surface water. Upon completion of any grading, filling, leveling, berming or ditching (or when that work has stopped for more than sixty (60) days for reasons other than seasonal weather conditions), Grantor will promptly restore any area disturbed by this work (including

any areas used for parking or storage of equipment, materials, or debris) to a condition roughly equivalent to the surrounding undisturbed land to Grantee's reasonable satisfaction, or to such other condition as Grantee may approve in writing in Grantee's absolute discretion.

5.15. Habitat Enhancement. Enhance existing plant and animal habitat, including the construction of ponds. Any enhancements require Grantee's prior written approval, which Grantee will not withhold unreasonably.

5.16. Boundary Adjustments. Adjust the boundaries of the Property (but not the Easement) and convey any portions of the Property absorbed into adjoining parcels as a result of such adjustment separately, provided that (a) all land subject to this Easement prior to any adjustment remains subject to this Easement after the adjustment and (b) the boundary adjustment does not result in any development that could not occur but for such adjustment. Grantor must notify Grantee in writing prior to undertaking any boundary adjustment and include with its notice a map showing the existing and proposed new boundary resulting from the adjustment. Grantor must receive Grantee's written approval for any boundary adjustment, which Grantee will not withhold unreasonably.

5.17. Water Improvements. Remove, modify, construct, rebuild and maintain any improvements related to the water rights appurtenant to the Property, including, without limitation, streambed and bank restoration, headgates, and ditches, and as may be approved by the Army Corps of Engineers, the Wyoming State Engineer's Office or any local authorities with appropriate jurisdiction over the matter.

5.18. Mineral Interests.

5.18.1. As of the date of this Easement, Grantor owns none of the Mineral rights located on, under, or in the Property or otherwise associated with the Property. For this reason, a mineral assessment report dated February 24, 2011 has been completed by Hurley Geological Consulting in compliance with Code Section 170(h)(5)(B)(ii) and Regulations Section 1.170A-14(g)(4)(ii), which report concludes that as of the date of the report, the probability of surface mining occurring on the Property is so remote as to be negligible.

5.18.2. With regard to the Mineral rights currently owned by third party Mineral Owners (including lessees), such third party Mineral owners (including lessees) shall be allowed to conduct Mining on the Property, provided that Grantor will, to the greatest extent legally possible, only allow Mining if the third party agrees to complete the Mining in a manner that conforms to the greatest extent possible with the following provisions:

5.18.2.1. Mining occurs only according to reasonable, site-specific stipulations developed by Grantee to protect the Conservation Purposes and ensure that any Mining (a) has only a "limited, localized impact on the Property" that is "not irremediably destructive of significant conservation interests" within the meaning of Regulations Section 1.170A-14(g)(4)(i), and (b) does not allow the removal of Minerals or other materials by any surface mining method within the meaning of Code Section 170(h)(5)(B)(i) and Regulations Section 1.170A-14(g)(4)(i).

5.18.2.2. Grantor notifies Grantee in writing prior to any proposed Mining operations on the Property so Grantee can monitor the operations for compliance with the terms of this Easement.

5.18.2.3. The operator undertaking the Mining, before commencing any Mining activities:

5.18.2.3.1. Posts and maintains a bond in a form and amount satisfactory to Grantee that guarantees the Property's restoration to the approximate condition of the surrounding, undisturbed land after the operator has completed or ceased Mining; and

5.18.2.3.2. Agrees in writing to escrow, on a quarterly basis, an amount equal to one-tenth of one percent (0.1%) of the gross revenues from Mining to guarantee the Property's restoration to the approximate condition of the surrounding, undisturbed land after the operator has completed or ceased Mining.

5.18.2.3.3. Upon completion of such restoration to the Parties' satisfaction, any amount remaining in such escrow, plus any accrued interest, shall be promptly returned to the operator and the bond posted may be terminated. Notwithstanding, upon completion or cessation of Mining, the Property shall be promptly restored as previously described, to Grantee's reasonable satisfaction.

5.18.2.4. Equipment, improvements, and operations related to Mining may not be located within five hundred (500) feet of any stream or in any zone of riparian vegetation, but Minerals underlying this zone may be explored for or developed by directional drilling from adjacent land.

5.18.2.5. No refineries, compressor stations, evaporation pits, secondary production facilities or facilities utilized for production from other properties may be located on the Property, and any hydrocarbons produced from the Property must be transported by pipeline or other means approved in advance by Grantee. The location of pipelines or other transportation facilities is subject to Grantee's prior written approval, which Grantee may deny if necessary to protect the Conservation Purposes.

5.18.2.6. Any travel must occur only on existing roads or new roads approved in advance and in writing by Grantee, which approval Grantee may deny if necessary to protect the Conservation Purposes.

5.18.2.7. Areas of surface disturbance must (a) have only limited and localized impact, (b) be in sites approved in advance by Grantee, which approval Grantee may deny if necessary to protect the Conservation Purposes, (c) not significantly impair the Conservation Purposes, and (d) be promptly restored following completion or cessation of Mining activities to the approximate condition of the surrounding, undisturbed land.

5.18.2.8. Facilities must be screened from view from public roads or public lands by vegetation, topography, berms and coloring to blend with the natural environment in a manner approved by Grantee.

5.18.2.9. Exclusive of areas disturbed for the location of roads and pipelines, the total area that may be disturbed on the Property for Mining shall not exceed twenty five (25) acres. No new well site shall exceed five (5) acres in size for single wells drilled from one site, or twenty five (25) acres in size for multiple wells drilled from one site. Regardless of size, no more than one (1) un-reclaimed well site may exist on the Property at any one time.

5.18.2.10. The location of these well sites, and any other areas to be subject to Mining on the Property, shall be subject to Grantee's prior written approval in its reasonable discretion, such approval to be for the purpose of ensuring that the location of such sites and Mining activities does not impair any significant conservation interests. A well site shall include all permitted facilities and disturbed areas, except for permitted access roads, utilities, and pipelines.

5.18.2.11. Prior to undertaking any Mining activity on the Property, a map shall be presented to Grantee showing the location and nature of such activity. All wells, exploratory or otherwise, shall be encased in concrete and steel to a depth significantly below the level of any surface water or groundwater to prevent contamination.

5.18.2.12. No person engaged in any Mining activity shall use the Property for any use not necessary to those uses, as such uses are expressly provided for in this Section.

5.18.3. With respect to the Mineral rights owned by third parties, Grantor agrees not to enter into any lease, surface use agreement or other instrument granting approval for the exploration or extraction of the Minerals, without first submitting such instrument to Grantee for its review and written approval, which Grantee may grant or deny in its discretion. Such lease, surface use agreement or other instrument must (i) reference this Easement and the fact that such lease, surface use agreement or other instrument is subordinate and subject to this Easement, (ii) include the provisions of Section 5.18.2.1 through 5.18.2.12 and the definition of "Mining" and "Minerals" contained in this Easement, and (iii) specifically require the lessee or other contracting party to carry out any such Mining in strict accordance with all the provisions of said Sections and said definitions.

5.18.4. Grantee and the Indemnified Parties shall be released, indemnified and held harmless from any liabilities, damages, or expenses resulting from any claims, demands, costs, or judgments arising out of the exercise of any rights by Grantor, any lessee or other third party relating to Mining.

5.19. Other Reserved Uses. Make any other use of the Property that is consistent with the Conservation Purposes, provided Grantor (a) obtains Grantee's written approval prior to undertaking such uses, which Grantee will not withhold unreasonably and (b) Grantor's proposed use is consistent with the standards for amendment or termination described

in Section 17.9 below. Uses reserved pursuant to this paragraph will not be deemed "expressly reserved" for any other purposes of this Easement.

6. Prohibited Uses. Except for uses of the Property (a) reserved in Section 5 of this Easement, or (b) expressly authorized by Grantee in writing prior to their undertaking, this Easement prohibits Grantor from the following, which Grantor covenants, warrants and agrees not to undertake or permit third parties to undertake on the Property:

6.1. Inconsistent Uses. Using the Property in ways that are inconsistent with the Conservation Purposes in perpetuity.

6.2. Impairment of the Conservation Values. Using the Property in ways that would impair the Conservation Values or which would otherwise interfere with the essential scenic quality of the land.

6.3. Alteration of Surface. Altering the surface of the land, including, without limitation, moving, excavating or removing soil, sand, gravel, rock, peat or sod.

6.4. Alteration of Ponds, Wetlands and Streams. Altering, impairing, modifying or adversely changing existing ponds, wetlands or stream channels.

6.5. Commercial or Industrial Uses. Using the Property for commercial or industrial activities.

6.6. Feed Lot. Establishing or maintaining a feed lot. As used in this Easement, "feed lot" means a permanently constructed confined area or facility used and maintained continuously and exclusively for purposes of warm-up or fattening large numbers of livestock for market.

6.7. Trash. Dumping or accumulating any kind of trash, sludge, or refuse on the Property, provided that Grantor may dump or accumulate agricultural trash and refuse produced on the Property so long as the dumping or accumulation is not inconsistent with the preservation and protection of the Conservation Purposes.

6.8. Chemicals and Hazardous Materials. Treating, storing, disposing or releasing chemicals or Hazardous Materials on, from or under the Property.

6.9. Towers. Constructing and maintainingtowers.

6.10. Mineral Exploitation. Extracting or removing any minerals by any surface mining method.

6.11. Water Rights. Transferring, encumbering, leasing, selling, or otherwise separating any water rights from the Property without the prior written approval of the Grantee in the sole and absolute discretion of the Grantee. Grantor shall use its best efforts to retain any and all water rights, now or in the future, appurtenant to the Property.

6.12. Hunting. Hunting on the Property.

6.13. Other Prohibited Uses. Using the Property in any and all other ways that are inconsistent with the Conservation Purposes, including, without limitation, the construction and maintenance of golf courses, sod farms, helicopter pads, and airstrips.

7. Use of Inventory. The Parties may use the Inventory to monitor compliance with the terms of this Easement and assist in enforcing its terms. The Parties may also use other relevant evidence to assist in resolving any dispute regarding compliance.

8. Notice and Approval Requirements. Any notices, demands or other communications that this Easement requires or permits must be in writing and delivered (a) in person (with delivery evidenced by a signed receipt), (b) by certified mail, return receipt requested, (c) by U.S. Express Mail or commercial overnight courier (e.g., FedEx or UPS), (d) by regular U.S. Mail, (e) by telephone facsimile, or (f) by electronic mail.

8.1. Effective Date of Notice. Notices will be deemed to have been "given" (a) when actually delivered if personally delivered, (b) when delivered as confirmed by an official return receipt if sent by certified mail, (c) within two (2) business days of deposit with a courier if sent by U.S. Express Mail or commercial overnight courier, (d) when actually received if sent by U.S. Mail, (e) when sent, with a confirmation of delivery if sent by telephone facsimile, or (f) when received if sent by electronic mail. Such notices must be sent to the Parties' respective addresses listed above, or such other address as a Party may direct pursuant to the notice provisions of this paragraph.

8.2. Notice of Change of Address. Notice of change of address will only be effective when done according to this Section.

8.3. Written Notice to Grantee Required. By signing this Easement, Grantor relinquishes any right to use the Property in ways that (a) may be inconsistent with the Conservation Purposes or (b) require Grantee's express permission unless and until Grantor notifies Grantee according to this Section and receives Grantee's approval.

8.4. Response by Grantee. Grantee will respond to any notice that complies with this Section 8 in writing within thirty (30) business days. Unless and until Grantor receives Grantee's response, Grantor may not commence the activity described in the notice.

8.4.1. If Grantee fails to respond in writing to a request from Grantor that complies with this Section within thirty (30) days, the requested approval will be "deemed" granted. No "deemed" approval will allow any activity on the Property that is inconsistent with the Conservation Purposes.

8.4.2. All activities requiring Grantee's prior written approval must be conducted consistently with such approval when granted, or, in the case of a "deemed" approval, conducted consistently with the terms of the request.

8.4.3. Grantee may object to any proposed activity Grantor notifies Grantee about if Grantee reasonably believes the proposed activity is inconsistent with the Conservation Purposes or the terms of this Easement. If Grantee objects to Grantor's proposed activity, Grantee will inform Grantor in writing how, if at all, Grantor can modify the proposed activity to satisfy Grantee's objections. After that, Grantor may submit a revised proposal accommodating the objections, which Grantee will review and respond to like the original notice. In no event can Grantee permit any activity on the Property that would be inconsistent with the Conservation Purposes.

8.5. Form and Content of Notices. All notices required or permitted by this Easement shall be in writing and provide sufficient information, in addition to any information required by specific provisions of this Easement, to allow Grantee (in the case of notice to

Grantee) to determine whether the proposed activity is consistent with the Conservation Purposes. In the case of notice to Grantor, the notice shall inform Grantor of the purpose of the notice and the provision(s) of this Easement that the notice concerns, refers or relates to.

9. Enforcement and Remedies for Violation.

9.1. Right to Injunction. The Parties recognize that money damages, or other non-injunctive relief, may not adequately remedy a violation of this Easement's terms. Therefore, the Parties agree that any violation of this Easement may be remedied through injunctive proceedings, including the imposition of temporary restraining orders, preliminary injunctions, specific performance, or any other legal means. The Parties also agree that no bond will be required of either Party in seeking an injunction, and no proof of damages, or the inadequacy of other remedies, will be required of either Party, in seeking injunctive relief.

9.2. Right to Restoration. Grantee has the right, but not the obligation, to enforce the reasonable restoration of all, or any portion, of the Property damaged by activities inconsistent with the Conservation Purposes. This restoration will be, as nearly as possible, to the condition that existed on the Effective Date, except for such changes as may have been made to the Property that are consistent with the terms of this Easement.

9.3. Right to Recover Damages. If any term of this Easement is violated Grantee may seek and recover all damages (in addition to the other remedies described in this Section and any other remedies available in law or equity) necessary to place Grantee in the same position Grantee would have been in but for the violation.

9.3.1. In determining such damages, the Parties agree that the following factors, among others, may be considered: (a) the costs of restoring the Property as provided in Section 9.2, and (b) the full market cost of purchasing a conservation easement containing terms comparable to the terms of this Easement on land in the vicinity of the Property, whose size and conservation values roughly compare to the Property's.

9.3.2. In addition to other damages that Grantee may seek and recover, Grantee may seek and recover the costs of enforcing any terms of this Easement, including reasonable attorneys' fees, expenses and court costs, and any costs of restoration necessitated by Grantor's violation of the terms of this Easement; provided, however, that if Grantor ultimately prevails in a judicial enforcement action, each party shall bear its own costs.

9.4. Grantor's Right to Recover Damages. Grantor may seek and recover all damages (including reasonable attorneys' fees, expenses and court costs) if a court with jurisdiction finds that Grantee has violated the terms of this Easement (a) willfully or wantonly and (b) in direct contravention of this Easement.

9.5. Right to Proceed Against Third Parties. Grantee may proceed against any third party(ies) whose actions threaten or damage the Conservation Purposes and pursue all remedies and damages against those third parties that are provided in this Section. Grantor shall cooperate with Grantee in any such proceeding, but does not have to assist financially in such proceeding unless Grantor wants to. In any case, Grantor may not prevent such proceeding.

9.6. Right to Require Assignment of Trespass Claims. At Grantee's request, Grantor agrees to assign to Grantee any cause of action for trespass that results in damage to the Conservation Purposes that Grantor may have. Grantor may condition Grantor's assignment on (a) Grantee's diligent prosecution of any such action, and (b) division, according to the ratio

determined pursuant to Section 13.2 below, between Grantor and Grantee of any recovery over and above Grantee's attorneys' fees, expenses and court costs incurred, and costs of restoration of the Property, resulting from such action.

9.7. No Waiver. In the event of any violation of this Easement's terms, failure by either Party, for any reason, to exercise the rights granted by this Easement, will not be deemed or construed as a waiver of either Party's rights under this Easement as to that, or any subsequent, violation. The Parties expressly waive any defense of laches, estoppel, or prescription.

10. Payment of Costs, Taxes and Assessments.

10.1. Costs of Operation. Grantor will pay all costs of operation, upkeep and maintenance for the Property.

10.2. Taxes and/or Assessments. Grantor will pay all real estate taxes and/or assessments lawfully levied on the Property. Grantee will have no obligation or responsibility for payment of such taxes or assessments, but will have the right to make any payment or participate in any foreclosure or similar proceeding resulting from any delinquency, as necessary to protect Grantee's interest in the Property. Grantor will reimburse Grantee for any costs Grantee incurs in case of any such payment or participation.

10.3. Indemnification for Costs and Expenses. Grantor will indemnify Grantee and the Indemnified Parties from any liability or expenses Grantee incurs in connection with the payment of costs and taxes under this Section.

11. Indemnification from Damages. The Parties acknowledge and agree that Grantee has no right or responsibility to possess, maintain, keep up, or control use of the Property, except to enforce the provisions of this Easement. Grantor acknowledges and agrees that Grantor retains all such rights and responsibilities exclusively.

11.1. Grantor's Indemnification of Grantee. Subject to Grantor's right to tender a defense in such cases, Grantor will indemnify and hold Grantee, and the Indemnified Parties, harmless from any court awarded damages, together with reasonable attorneys' fees and expenses incurred by Grantee and the Indemnified Parties, and all attorneys' fees and expenses assessed against Grantee and the Indemnified Parties, resulting from (a) personal injury or property damage that occurs on the Property not due to the negligence of Grantee and Grantee's agents and (b) liability, including, but not limited to, liability under CERCLA, and similar local, state or federal laws, relating to cleanup of hazardous substances that were released or in any way deposited on the Property, other than by Grantee and Grantee's agents.

11.2. Grantee's Indemnification of Grantor. Subject to Grantee's right to tender a defense in such cases, Grantee will indemnify and hold Grantor, and Grantor's heirs, successors and assigns, harmless from any court awarded damages, together with reasonable attorneys' fees and expenses incurred by Grantor, and Grantor's heirs, successors and assigns, and all attorneys' fees and expenses assessed against Grantor, and Grantor's heirs, successors and assigns, resulting from (a) personal injury or property damage that occurs on the Property due to the negligence of Grantee and Grantee's agents and (b) liability, including, but not limited to, liability under CERCLA, and similar local, state or federal laws, relating to cleanup of hazardous substances that were released or in any way deposited on the Property, by Grantee and Grantee's agents.

12. Transfer of this Easement. Grantee may transfer this Easement on the following terms and conditions:

12.1. Transfer Limited to Qualified Organizations. If Grantee decides to transfer this Easement, or ceases to be a "qualified organization," as defined by Code Section 170(h)(1)(B) and Regulations Section 1.170A-14(c)(1), Grantee may only transfer this Easement to an organization qualifying, at the time of the transfer, as an "eligible donee" under Section 1.170A-14(c)(1) of the Regulations, that agrees, as a condition of the transfer, to continue carrying out the Conservation Purposes in perpetuity.

12.2. Notice to Grantor Prior to Transfer. Prior to transferring this Easement, Grantee will give Grantor thirty (30) days written notice of Grantee's intent to transfer this Easement and provide Grantor an opportunity to name a transferee organization. Whenever reasonably practical, Grantee will honor Grantor's preference regarding a transferee organization, provided (a) Grantor informs Grantee of Grantor's preference within such thirty (30) day period and (b) any preferred transferee meets the requirements of this Section.

13. Extinguishment; Condemnation.

13.1. Extinguishment. If circumstances arise in the future that render the purpose of this Easement impossible to accomplish, this Easement can only be terminated or extinguished, in whole or in part, by judicial proceedings in a court of competent jurisdiction. The amount of the proceeds to which Grantee shall be entitled from any sale, exchange or involuntary conversation of all or any portion of the Property subsequent to such termination or extinguishment, shall be determined by multiplying such amount of proceeds by the ratio set forth in Section 13.2, unless state law provides that the Grantor is entitled to the full proceeds from the conversion without regard to the terms of the Easement.

13.2. Valuation. This Easement constitutes a property right, immediately vested in Grantee, which the parties stipulate to have a fair market value determined by multiplying (A) the fair market value of the Property unencumbered by the Easement (minus any increase in the value after the date of this grant attributable to improvements) by (B) the ratio of the value of the Easement at the time of this grant to the value of the Property, without deduction for the value of the Easement, at the time of this grant. The values applicable for purposes of the calculations required by this Section will be determined by a "qualified appraisal" (as defined by Section 170(f)(11)(E) of the Code) performed by an independent appraiser mutually agreed to by Grantor and Grantee, the costs of which shall be split equally between Grantor and Grantee. If Grantor and Grantee cannot agree on an independent appraiser, Grantor and Grantee will each obtain a "qualified appraisal" (as defined by Section 170(f)(11)(E) of the Code) at their respective sole cost, and the values applicable for purposes of the calculations required by this Section will be the average of such two "qualified appraisals."

13.3. Condemnation. If all or any part of the Property is taken by exercise of the power of eminent domain or acquired by purchase in lieu of condemnation, whether by public, corporate or other authority, so as to terminate this Easement, in whole or in part, Grantor and Grantee will act jointly to recover the full value of the interests in the Property subject to the taking or in lieu purchase and all direct or incidental damages resulting therefrom. All expenses reasonably incurred by Grantor and Grantee in connection with the taking or in lieu purchase shall be paid out of the amount recovered. Grantee's share of the balance of the amount recovered shall be determined by multiplying that balance by the ratio set forth in Section 13.2.

13.4. Application of Proceeds. Grantee shall use any proceeds received under the circumstances described in this Section 13 in a manner consistent with this Easement's Conservation Purposes.

14. Notice to Grantee of Property Transfer. Grantor will notify Grantee in writing at least thirty (30) days before conveying the Property, any portion of the Property, or any interest in the Property. The notice must include the address of the transferee. Failure to provide this notice will not in any way affect the conveyance or validity or enforceability of this Easement against any subsequent owner of the Property.

15. Access and Control of Trespass. Nothing contained in this Easement will be construed to give the public any right of access to, or use of, the Property. Grantor reserves the right to post the Property against trespassing, hunting, or fishing, and eject and prosecute trespassers, subject to the provisions of Section 9.6.

16. Definitions. As used in this Easement the following terms will have the following definitions unless otherwise expressly provided to the contrary:

16.1. "Code" and "Regulations" mean the Internal Revenue Code of 1986, as amended, and the Treasury Regulations promulgated under the Code, respectively, and shall include reference to the comparable provisions of any subsequent revision of the Code and Regulations.

16.2. "Grantee" means the Wyoming Land Trust and its successors and assigns in title to this Easement.

16.3. "Grantor" means Grantor and Grantor's successors in title to the Property or any other owner of the Property shown in the Sweetwater County, Wyoming land records, and specifically including tenants, lessees and licensees of the Property or any portion of the Property.

16.4. "Hazardous Materials" means any chemical, material, substance or waste (a) that is regulated under any applicable federal, state or local law or regulation, (b) that is classified as hazardous or toxic under federal, state, or local law or regulation, or (c) to which exposure is regulated under federal, state, or local law or regulation.

16.5. "Indemnified Parties" means Grantee's officers, employees and Board members, and their heirs, successors and assigns.

16.6. "Mining" means, without limitation, any activity conducted in connection with, or in preparation for, the exploration for, or removal of, Minerals from the Property including, without limitation, drilling, seismic testing, earth moving, or construction, location, or preparation for construction or location, of improvements, structures or equipment of any kind or description for the purpose of, or related to, exploration for or removal of Minerals from the Property, expressly including those activities enumerated in Wyoming Statutes, Section 30-2-101(a)(x).

16.7. "Minerals" means soil, sand, gravel, rock, stone, decorative stone, oil (as further defined by Wyoming Statutes, Section 30-5-101(a)(vii)), natural gas, coalbed methane (including any and all substances produced in association therewith from coal-bearing formations), hydrocarbon, fuel, gas (as further defined by Wyoming Statutes, Section 30-5-101(a)(vii)), and any other mineral substance, of any kind or description.

16.8. "Necessary" shall mean essential or absolutely required to accomplish the particular use or function.

16.9. "Parties" collectively refers to both the Grantor and Grantee.

16.10. The term "Property" means the real property, and any portion of the real property, subject to this Easement. A legal description of the Property is contained in the Background section of this Easement.

16.11. "Section" means the referenced section or subsection, and any and all of the subsections of a referenced section, if any, unless otherwise specifically stated.

17. Miscellaneous Provisions.

17.1. Severability. Each provision of this Easement must be interpreted in a way that is valid under applicable law. If any provision is held invalid, the rest of the Easement will remain in full effect.

17.2. Limitation on Liability. Grantor and Grantee's respective rights and obligations under this Easement will terminate if and when either of them transfers their interest in the Easement or all of the Property. However, Grantor and Grantee will remain liable for any of their respective acts or omissions that occurred while either of them held an interest in the Property regardless of whether Grantor and Grantee transfer their respective interests in the Easement or all of the Property.

17.3. Recordation. This Easement will be recorded in the Office of the County Clerk in the County where the Property is located and may be re-recorded at any time by Grantor or Grantee.

17.4. Reference to Easement Required. Grantor agrees to incorporate by reference the terms of this Easement in any deed or other legal instrument by way of which Grantor transfers or divests itself of any interest, including, without limitation, a leasehold interest, in all or any portion of the Property. Grantor shall notify Grantee in writing at least thirty (30) days before conveying the Property, or any part thereof or interest therein, to any third party. Failure of Grantor to comply with any provision of this paragraph shall not impair the validity of this Easement or limit its enforceability in any way.

17.5. Construction. This Easement will be construed according to the laws of the State of Wyoming. Notwithstanding, and regardless of any general rule of construction, Grantor and Grantee agree that this Easement will be liberally construed in favor of the grant to Grantee to effect the Conservation Purposes, and the policy and purpose of the Wyoming Uniform Conservation Easement Act. The provisions of this Easement shall be construed accordingly. If any provision of this Easement is found to be ambiguous, an interpretation consistent with advancing the Conservation Purposes and the policy and purposes of the Wyoming Uniform Conservation Easement Act, shall be favored over any other interpretation. Neither Grantor nor Grantee shall be deemed the draftsman of this Easement or any part of this Easement, each having had the benefit of counsel of its own choosing in negotiating its terms.

17.6. Venue and Jurisdiction. Any action relating to enforcement or violation of the terms of this Easement must be brought in the state trial court serving the County where the Property is most significantly located, and no proceeding shall be initiated in any other court, except for appeals from the decision of such trial court.

17.7. Relation to Governmental Land Use Regulations. The restrictions imposed by the terms of this Easement are independent of any and all governmental regulations that apply to the use of the Property, including the Land Development Regulations of the Wyoming County where the Property is most significantly located, or where any particular portion of the Property at issue is located. The relationship between this Easement and any such regulations is such that, although the terms of this Easement and such regulations apply simultaneously to the Property, on a case-by-case basis, the more restrictive regulation or Easement restriction will govern the use of the Property. Grantor and Grantee intend this provision as a clarification of the relationship of the restrictions of the Easement and applicable governmental regulations only, and do not intended to, and do not, impose any additional restrictions on the use of the Property.

17.8. Control of the Property. Nothing in this Easement shall be construed as giving rise to any right or ability in Grantee to exercise physical or managerial control over the day-to-day operations of the Property, or any of Grantor's activities on the Property, or otherwise to "participate in management" of the Property or create in Grantee the obligations or liabilities of an "owner" or "operator" within the meaning of CERCLA, or similar federal, state, or local laws.

17.9. Amendment and Termination. This Easement is perpetual and may not be amended or terminated, in whole or in part, without Grantee's written consent, in Grantee's sole and absolute discretion. Nevertheless, and regardless of whether any federal or state tax benefits were sought in connection with the original grant of this Easement, no amendment or termination, in whole or in part, of this Easement shall be valid unless it is pursuant to the order of a court having jurisdiction in the case, or unless Grantee's action in consenting to such amendment or termination complies with Grantee's then-existing policies, if any, governing the amendment of conservation easements.

17.10. No Merger. If Grantee or any successor holder of Grantee's interests under this Easement acquires a fee interest in the Property (a) this Easement shall not merge, and shall survive the deed and shall continue to encumber the Property in view of the public interest enforcement and (b) Grantee or such successor holder of Grantee's interests shall as promptly as practicable transfer the Grantee's interests in this Easement to another holder in accordance with the guidelines established for transfer in Section 12.

17.11. Consent to Conveyance. Frank W Maurer, Jr. and Lenora A. Timm, as Buyer under certain Agreements for Sale of Real Estate for the Property, hereby join in the execution of this Easement to evidence their consent to the Easement's conveyance.

_____

Frank W Maurer, Jr.

_____

Lenora A. Timm

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GRANTOR

_____
WYOMING RANCH COMPANY, LLC
BY: _____
ITS: _____

GRANTEE

_____
WYOMING LAND TRUST
BY: Scott Williams
ITS: President

STATE OF _____ }
ss.
COUNTY OF _____ }

The foregoing instrument was acknowledged before me by _____, as _____ of WYOMING RANCH COMPANY, LLC, on this _____.

WITNESS, my hand and official seal.

_____
Notary Public for the State of _____
My Commission Expires: _____

STATE OF WYOMING }
ss.
COUNTY OF _____ }

The foregoing instrument was acknowledged before me by SCOTT WILLIAMS, in their capacity as the President of the Wyoming Land Trust, a Wyoming nonprofit corporation, on this _____.

WITNESS, my hand and official seal.

_____
Notary Public for the State of Wyoming
My Commission Expires: _____

STATE OF _____ }
ss.
COUNTY OF _____ }

Section 17.11 of the foregoing instrument was acknowledged before me by FRANK W MAURER, JR. on this _____.

WITNESS, my hand and official seal.

_____

Notary Public for the State of _____
My Commission Expires: _____

STATE OF _____ }
ss.
COUNTY OF _____ }

Section 17.11 of the foregoing instrument was acknowledged before me by LENORA A. TIMM on this _____.

WITNESS, my hand and official seal.

_____

Notary Public for the State of _____
My Commission Expires: _____

EXHIBIT A

LEGAL DESRIPTION OF PROPERTY

A parcel of land located in Township 21 North, Range 91 West, 6th P.M., Sweetwater County, Wyoming, more particularly described as follows:

Section 2:	SW¼
Section 11:	SE¼
Section 12:	NW¼

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EXHIBIT B

RESOURCE INVENTORY

EXHIBIT B

NATURAL RESOURCE INVENTORY

FOR

WYOMING RANCH COMPANY, LLC PARCELS, SUNDANCE MESA RANCHES

INTRODUCTION

This Natural Resource Inventory ("Inventory") documents the condition of certain real property owned by Wyoming Ranch Company, LLC ("Grantor") in Sweetwater County, Wyoming (the "Property").

The Wyoming Land Trust ("WLT" or "Grantee") prepared the Inventory in May and June 2011 in compliance with the applicable provisions of the Internal Revenue Code, Treasury Regulations and Land Trust Alliance *Standards and Practices* to support the Grantor's contribution of a conservation easement ("Easement") over the Property to the Grantee.

Jordan Vana, WLT Director of Conservation, visited the Property on May 16, 2011.

In the event of any conflict between the terms and provisions of this Inventory and the Easement, the terms and provisions of the Easement shall govern.

LOCATION

The Property consists of ±480 acres in Township 21 North, Range 91 West, 6th P.M., Sweetwater County, Wyoming, more particularly described in Exhibit A to the Easement.

To access the Property from Pinedale, Wyoming, travel south on U.S. Highway 191 approximately 102 miles to Rock Springs. From Rock Springs, travel east on Interstate 80 approximately 90 miles to Exit 196 (Riner Road). Take Exit 196 and pass under the I-80 to the frontage road north of I-80. Travel west on the frontage road and pass through an unlocked gate. After approximately 4.4 miles, bear hard right and travel north 0.2 miles to a locked gate (combination available from Grantor). Pass through the gate and continue north approximately 1.6 miles to an unlocked gate. Pass through the gate and continue north 2.7 miles (past corrals and tanks on the east side of the road) to a locked gate (combination available from Grantor). Pass through the gate and use a GPS to locate the Property.

HISTORY[1]

Grantor purchased the Property from USA Ranches, Inc. in 1998. The Property was part of a larger ranch that USA Ranches, Inc. purchased from Richard L. Goodman in 1996. Following its purchase, Grantor marketed and sold portions of the larger property in parcels ranging in size from 40 acres up.

Conservationist Frank Maurer contracted to purchase the Property in 2005. When Maurer learned that a large sage grouse mating area (or "lek") existed on or near some of the parcels,[2] he found conservation-minded buyers to

[1] Based on personal communications with Marvin Levin of Wyoming Ranch Company, and information received from the Office of Sweetwater County, Wyoming, Clerk.

[2] Named the Windy Hill lek by the Wyoming Game and Fish Department (WGFD). According to a WGFD Sage Grouse Lek Observation History provided to Grantee in January 2010, WGFD discovered the lek in 1975. During annual observations since that time, WGFD has observed as many as 90 male and 50 female birds on the lek.

purchase these parcels and encumber them with protective covenants to ensure the lek's continued viability. The conservation easement will supersede those covenants and ensure the Property's conservation in perpetuity.

CONSERVATION VALUES

A. Agriculture and Open Space

Grantor does not use the Property for agriculture. However, the Property will remain available for agricultural uses (including livestock grazing and leasing the Property for livestock grazing) subject to the terms of the conservation easement.

B. Scenic Views

The Property provides scenic views for the general public from nearby BLM land. As depicted in the attached photographs, factors such as the compatibility of the use of the Property with other land in the vicinity, the degree of visual contrast and variety provided by the Property, the openness of the Property, and the harmonious variety of its shapes and textures, among other factors, contribute to the Property's scenic values.

C. Significant, Relatively Natural Habitat for Wildlife and Plants

1. Hydrology

No visually-observable permanent hydrologic features, including wetlands (according to the U.S. Fish and Wildlife Service's National Wetlands Inventory), appear to exist on the Property. Notwithstanding, the National Hydrography Dataset indicates that the Property contains 0.63 miles of 1st order streams.

According to a water rights search conducted by Carol Velez in May 2011, no water rights attach to the Property.

2. Ecological Communities

Based on data from the U.S. Geological Survey's Gap Analysis Program, the following visually observable and distinct ecological communities exist on the Property (see Figure 5):

a. Inter-Mountain Basins Big Sagebrush Shrubland

Big sagebrush shrublands are one of the most widespread ecological systems in the western U.S., found in broad basins between mountain ranges, on plains and in foothills between 1,500 and 2,300 m elevation. The soils are deep, well-drained and not salty. The most important sages are Wyoming or basin big sagebrush; other common shrubs include bitterbrush, rabbitbrush, or mountain snowberry. Shrubs are the dominant vegetation, with grasses making up less than 25% of the cover, distinguishing this from the Intermountain Basins Big Sagebrush Steppe system, which has higher grass cover.

b. Inter-Mountain Basins Cliff and Canyon

This ecological system is found from foothill to subalpine elevations and includes barren and sparsely vegetated landscapes (generally <10% plant cover) of steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous, sedimentary, and metamorphic bedrock types. Also included is vegetation of unstable scree and talus slopes that typically occurs below cliff faces. Widely scattered trees and shrubs may include white fir, two-needle pinyon, limber pine, singleleaf pinyon, juniper spp., basin big sagebrush, antelope bitterbrush, curl-leaf mountain-mahogany, jointfir spp., hillside oceanspray, and other species often common in adjacent plant communities.

c. Inter-Mountain Basins Mat Saltbush Shrubland

This ecological system occurs on gentle slopes and rolling plains in the northern Colorado Plateau and Uinta Basin on Mancos shale and arid, windswept basins and plains across parts of Wyoming. These are stands of dwarf-shrubs (< 15 cm tall) and grasses, usually with < 25% plant canopy cover, that grow on gentle terrain with fine-textured,

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saline or shale soils. The shrubs are pure or mixed stands of mat saltbush, Gardner saltbush, birdfoot sage, longleaf wormwood, bud sagebrush, or winterfat. Grasses and herbs are not abundant; grasses include western wheatgrass, bottlebrush squirreltail, and Sandberg bluegrass. Woody aster usually is present and often is common as is Hood's phlox. Other wildflowers may be present as well. Taller shrubs, especially Wyoming big sagebrush and shadscale saltbush may be present but contribute little cover. Annual plants are seasonally present, with spring moisture or summer rainstorms.

d. Western Great Plains Riparian Woodland and Shrubland

These are the stream and creek-side woodlands and shrublands found in the western Great Plains. They usually occur within shortgrass prairie or other types of grasslands. They occur in draws and along small rivers in deep cut ravines to wider meandering streambeds. Flows in these streams can be flashy, and may dry down completely for some portion of the year. Dominant species vary with the size of the stream and valley type. Plains cottonwood, willows and silver sagebrush are the most common with an herbaceous understory composed of grasses including little bluestem, western wheatgrass, and sand dropseed. When heavily used, such as too frequent livestock grazing, or heavy agricultural runoff, increasing streams salinity, non-native trees such as tamarisk and Russian olive can replace the native species.

e. Inter-Mountain Basins Mixed Salt Desert Scrub

In the interior west, salt desert shrublands are found in some of the driest of habitats, in basins, on rocky slopes, and plains. The soils usually have a high percentage of salts or calcium, often because of the rocks from which the soil is derived, or because of the high rate of evaporation of water from the surface of the soil. These salt desert shrublands experience extreme climatic conditions, with warm to hot summers and freezing winters, with low amounts of rain or snow fall. The shrubs are adapted to these dry, "saline" conditions, often having spines, going dormant during extended dry periods, and having small leaves. The most common shrubs are called "saltbush" species, and include shadscale, fourwing saltbush, cattle-spinach, spinescale, spiny hop-sage, or winter-fat. They usually are low growing, and scattered, but sometimes can be dense. Grasses and herbs are also found, but because of the dry conditions are rarely abundant.

f. Wyoming Basins Dwarf Sagebrush Shrubland and Steppe

These very short sagebrush shrublands and shrub-steppe (grassland with scattered shrubs) occur in wind-scoured areas in the plains, on slopes near mountains, and in high-elevation basins and plateaus in southern and central Wyoming. These sites are cold and dry with shallow, often rocky soils. The dwarf shrubs are so short they may be hidden by grasses. The common dwarf-shrubs are Wyoming three-tip sagebrush, alkali sagebrush, black sagebrush, and Wyoming big sagebrush, which may occur alone or in combinations. Grasses, cushion plants and other low growing herbs are common in shrub-steppe and some shrublands.

g. Inter-Mountain Basins Big Sagebrush Steppe

Open sagebrush steppe, which are habitats of mixed grassland with scattered shrubs, contain Wyoming or basin big sagebrush, bitterbrush or other western sage-like shrubs with usually between 10% and 25% cover. Native 'bunchgrasses' that form dense clumps at their base, along with other native grasses, tend to cover well over 25% of the ground, distinguishing this from Big Sagebrush Shrublands which are more shrubs and less grass. With overgrazing and/or supression of natural wildfire, some sagebrush steppe can be converted to sagebrush shrublands. This is a very widespread type occurring on rolling and flat plains, with a variety of soil conditions. This type occurs throughout the western U.S., and is dominant in the Columbia Plateau and the northwestern Great Plains of Wyoming and Montana. Pronghorn antelope, sage grouse, pygmy rabbit, sage sparrow, and many plant and animal species utilize sagebrush steppe as their primary habitat.

3. Wildlife

The Property contains diverse habitats for a variety of wildlife species. The following paragraphs describe these species in greater detail based on the Property's location and GIS data provided by WGFD and others. Grantee does not intend this list to be exclusive or exhaustive.

As a preliminary matter, the Property lies within WGFD's "Great Divide Basin" Crucial Habitat Priority Area. According to the Narrative prepared by WGFD and available on its website, the Area includes "crucial winter range for pronghorn; provides core breeding, nesting and brood rearing habitat for sage-grouse . . . ; [and] supports a number of [Species of Greatest Conservation Need] identified in [Wyoming's Comprehensive Wildlife Conservation Strategy] report." WGFD selected the Area as a priority because of these conservation values. In addition, WGFD selected the Area as a priority because "intense gas development has caused habitat loss and fragmentation in sage-grouse breeding and nesting habitat and pronghorn habitat and populations are below objective. This has increased utilization of adjacent habitats resulting in a decline in conditions on some of these areas."

a. Invertebrates

A number of invertebrate species likely occur on the Property, but, aside from sage moths (*Grapholita imitativa), which have been observed on or near the Property,* cannot be identified with any degree of certainty at this time. According to a June 20, 2011 phone conversation with Dr. Lusha Tronstad, head of the invertebrate zoology program at the Wyoming Natural Diversity Database, Wyoming is working on a database of invertebrate species of greatest conservation need. According to Wyoming's State Wildlife Action Plan (2010), "to increase understanding about Wyoming's invertebrates, a cooperative agreement was signed between the WGFD and the Wyoming Natural Diversity Database (WYNDD) in May 2010."

b. Amphibians

According to WGFD GIS data, the Property likely provides habitat for the following amphibian Species of Greatest Conservation Need (SGCN) in Wyoming:

Great Basin Spadefoot (*Spea intermontana*)

c. Reptiles

According to WGFD GIS data and landowner observation, the Property provides habitat for the following reptilian Species of Greatest Conservation Need (SGCN) in Wyoming:

Greater Short-horned lizard (*Phrynosoma hernandesi*)

d. Fishes

The Property does not provide habitat for any fish species.

e. Birds

According to a WGFD Wildlife Observation Report provided to Grantee on June 17, 2011, WGFD personnel have observed the following bird species on or near the Property. Several of these species have also been observed on or near the Property by Frank Maurer.

American Avocet (*Recurvirostra americana*)
Golden Eagle (*Aquila crysaetos*)
Greater Sage Grouse (*Centrocercus urophasianus*)
Northern Harrier (*Circus cyaneus*)
Northern Pintail (*Anas acuta*)
Lesser Scaup (*Aythya affinis*)
Green-Winged Teal (*Anas crecca*)

Frank Maurer has also observed Mourning Doves (*Zenaida macroura*) and Northern Flickers (*Colaptes auratus*) on or near the Property.

According to WGFD GIS data, the Property likely provides habitat for the following bird Species of Greatest Conservation Need (SGCN) in Wyoming. Several of these species have also been observed on or near the Property by Frank Maurer.

Burrowing Owl (*Athene cunicularia*)
Ferruginous Hawk (*Buteo regalis*)
Greater Sage Grouse (*Centrocercus urophasianus*)
Mountain Plover (*Charadrius montanus*)
Brewer's Sparrow (*Spizella breweri*)
Lark Bunting (*Calamospiza melanocorys*)
Lesser Scaup (*Aythya affinis*)
Redhead (*Aythya Americana*)
Sage Sparrow (*Amphispiza belli*)
Sage Thrasher (*Oreoscoptes montanus*)
White-faced Ibis (*Plegadis chihi*)
Swainson's Hawk (*Buteo swainsoni*)

The Property provides particularly important habitat for sage grouse. The Property lies within a sage grouse "core area" established pursuant to Wyoming Governor's Executive Order 2008-02 (Greater Sage Grouse Core Area Protection) (as amended) (available on the WGFD website). The Executive Order seeks to maintain Wyoming's sage grouse populations and their habitats. The Order recognizes that "[i]t is critical that existing land uses and landowner activities continue to occur in core areas, particularly agricultural activities on private lands." Conservation of the Property will both maintain habitat function and forever eliminate the habitat fragmentation and degradation that could result from full-scale residential or commercial development of the Property.

As above, the Property lies within 3 miles of the Windy Hill sage grouse lek, which WGFD discovered in 1975. During annual observations since that time, WGFD has observed as many as 90 male and 50 female birds on the lek.

f. Mammals

According to WGFD data available to Grantee, the Property provides the following habitat for big game species:

Yearlong habitat for elk
Winter/yearlong habitat for mule deer
Spring/summer/fall habitat for pronghorn

The Property also lies near a number of pronghorn migration routes and pronghorn crucial winter/yearlong range.

According to a WGFD Wildlife Observation Report provided to Grantee on June 17, 2011, WGFD personnel have observed the following mammalian species on or near the Property:

Coyote (*Canis latrans*)
Mule deer (*Odocoileus hemionus*)
Elk (*Cervus canadensis*)
Pronghorn (*Antilocapra americana*)

WGFD personnel believe the Property also provides habitat for the white-tailed prairie dog (*Cynomys leucurus*), which Frank Maurer has observed on or near the Property, along with badgers (*Taxidea taxus*).

In addition, the Property likely provides habitat for the following mammalian Species of Greatest Conservation Need (SGCN) in Wyoming according to WGFD:

Little Brown Myotis (*Myotis lucifugus*)
Olive-backed Pocket Mouse (*Parognathus fasciatus*)
Pygmy Rabbit (*Brachylagus idahoensis*)

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Property Buildings, Structures and Other Human Improvements

The following human improvements and incursions exist on the Property:

Two-track roads
Fencing
Wildlife water guzzlers
Teepee poles
Old garden
Historic landing strip

Figure 4 shows the location of these improvements and incursions.

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Acknowledgement Of Property Condition

The Grantor and Grantee acknowledge and agree that this Inventory, together with the Figures and Appendices, is an accurate representation of the Property at the time of the conveyance of the Easement and that the Inventory was available to the parties to the Easement prior to its conveyance to the Wyoming Land Trust.

GRANTOR: WYOMING RANCH COMPANY, LLC

_____

By: _____

Its: _____

Date: _____

GRANTEE: WYOMING LAND TRUST

_____

By: Jordan Vana

Its: Director of Conservation

Date: _____

STATE OF _____

ss.

COUNTY OF _____

The foregoing instrument was acknowledged before me by _____, as _____ of Wyoming Ranch Company, LLC on this _____ day of _____, 2011.

WITNESS, my hand and official seal.

_____

Notary Public

My commission expires: _____

STATE OF WYOMING

ss.

COUNTY OF SUBLETTE

The foregoing instrument was acknowledged before me by Jordan Vana as Director of Conservation for the Wyoming Land Trust on this _____ day of _____, 2011.

WITNESS, my hand and official seal.

_____

Notary Public

My commission expires: _____

DESCRIPTION OF FIGURES

Figure 1 Map of Sweetwater County, Wyoming prepared for Grantee by WLC Engineering, Surveying and Planning using ESRI ArcGIS 9.3 showing the location of the Property, surrounding state and federal lands, and other proposed conservation easement parcels.

Figure 2 Map of the Property prepared for Grantee by WLC Engineering, Surveying and Planning using ESRI ArcGIS 9.3 underlaid with the relevant USGS Topographic Quadrangle map.

Figure 3 Map of the Property prepared for Grantee by WLC Engineering, Surveying and Planning using ESRI ArcGIS 9.3 underlaid with an aerial photograph taken by the USDA National Agricultural Imagery Program in 2009 (representing the most recent aerial photograph of the Property available to Grantee).

Figure 4 Map of the Property prepared for Grantee by WLC Engineering, Surveying and Planning using ESRI ArcGIS 9.3 underlaid with an aerial photograph taken by the USDA National Agricultural Imagery Program in 2009 (representing the most recent aerial photograph of the Property available to Grantee) depicting the existing human improvements and incursions on the Property based on GIS aerial imagery analysis and observation and documentation by Grantee using a Garmin GPS III+ unit.

Figure 5 Map of the Property prepared for Grantee by WLC Engineering, Surveying and Planning using ESRI ArcGIS 9.3 underlaid with an aerial photograph taken by USDA National Agricultural Imagery Program in 2009 (representing the most recent aerial photograph of the Property available to Grantee) depicting vegetative communities according to GIS data from the USGS Gap Analysis Program.

Figure 6 Map of the Property prepared for Grantee by WLC Engineering, Surveying and Planning using ESRI ArcGIS 9.3 underlaid with an aerial photograph taken by USDA National Agricultural Imagery Program in 2009 (representing the most recent aerial photograph of the Property available to Grantee) depicting wildlife habitats and migration routes occurring on or near the Property according to GIS data from the WGFD.

Figure 7 Map of the Property prepared for Grantee by WLC Engineering, Surveying and Planning using ESRI ArcGIS 9.3 underlaid with an aerial photograph taken by USDA National Agricultural Imagery Program in 2009 (representing the most recent aerial photograph of the Property available to Grantee) depicting locations of photographs taken on the Property during site visit as documented by Grantee on the ground with a Garmin GPS III+ unit.

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APPENDICES

A. Photographic Descriptions
B. Photographic Documentation of the Property
C. Water Rights Documentation

APPENDIX A

PHOTOGRAPHIC DESCRIPTIONS

Grantee took the following photos of the Property on May 16, 2011 with a Canon EOS Rebel XSi camera and documented the location of the photos with a Garmin GPS III+ unit using the Latitude-Longitude (Decimal Degrees) projection system.

PHOTO	GPS COORDINATES (LAT/LONG DECIMAL DEGREES)	DESCRIPTION
1	41.81530 -107.65717	Teepee poles on Wyoming Ranch Company parcel in SW4, Section 2, looking WNW
2	41.81320 -107.65741	Old garden on Wyoming Ranch Company parcel in SW4, Section 2, looking SW
3	41.82042 -107.65046	Taken from NE corner of Wyoming Ranch Company parcel in SW4, Section 2 looking W
4	SAME	Taken from same location as photo 3 looking SW
5	SAME	Taken from same location as photo 3 looking S
6	41.81325 -107.64077	Taken from NW corner of Wyoming Ranch Company parcel in NW4, Section 12, looking E
7	SAME	Taken from same location as photo 6 looking SE
8	SAME	Taken from same location as photo 6 looking S
9	41.81322 -107.64015	Water guzzler on Wyoming Ranch Company parcel in NW4, Section 12, looking SE
10	41.81329 -107.65042	Taken from SE corner of Wyoming Ranch Company parcel in SW4, Section 2, looking W
11	SAME	Taken from same location as photo 10 looking NW
12	SAME	Taken from same location as photo 10 looking N
13	41.80595 -107.65052	Taken from NW corner of Wyoming Ranch Company parcel in SE4, Section 11, looking S
14	SAME	Taken from same location as photo 13 looking SE
15	SAME	Taken from same location as photo 13 looking E
16	41.80584 -107.65027	Water guzzler on Wyoming Ranch Company parcel in SE4, Section 11, looking SE
17	41.80134 -107.65049	Taken near SW corner of Wyoming Ranch Company parcel in SE4, Section 11, looking N
18	SAME	Taken from same location as photo 17 looking NE
19	SAME	Taken from same location as photo 17 looking E
20	41.80030 -107.65013	Taken near SW corner of Wyoming Ranch Company parcel in SE4, Section 11, looking S
21	SAME	Taken from same location as photo 20 looking SE
22	SAME	Taken from same location as photo 20 looking ENE
23	41.80463 -107.64081	Taken from ridge overlooking SE corner of Wyoming Ranch Company parcel in SE4, Section 11, looking S
24	SAME	Taken from same location as photo 23 looking SW
25	SAME	Taken from same location as photo 23 looking W
26	41.80600 -107.64081	Taken from NE corner of Wyoming Ranch Company parcel in SE4, Section 11, looking W
27	SAME	Taken from same location as photo 26 looking SW

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PHOTO	GPS COORDINATES (LAT/LONG DECIMAL DEGREES)	DESCRIPTION
28	SAME	Taken from same location as photo 26 looking S
29	41.80600 -107.64081	Taken near SW corner of Wyoming Ranch Company parcel in NW4, Section 12, looking N
30	SAME	Taken from same location as photo 29 looking NE
31	SAME	Taken from same location as photo 29 looking E
32	41.80592 -107.64150	Water guzzler on Wyoming Ranch Company parcel in SE4, Section 11, looking S
33	41.81320 -107.63230	Water guzzler on Wyoming Ranch Company parcel in NW4, Section 12, looking S

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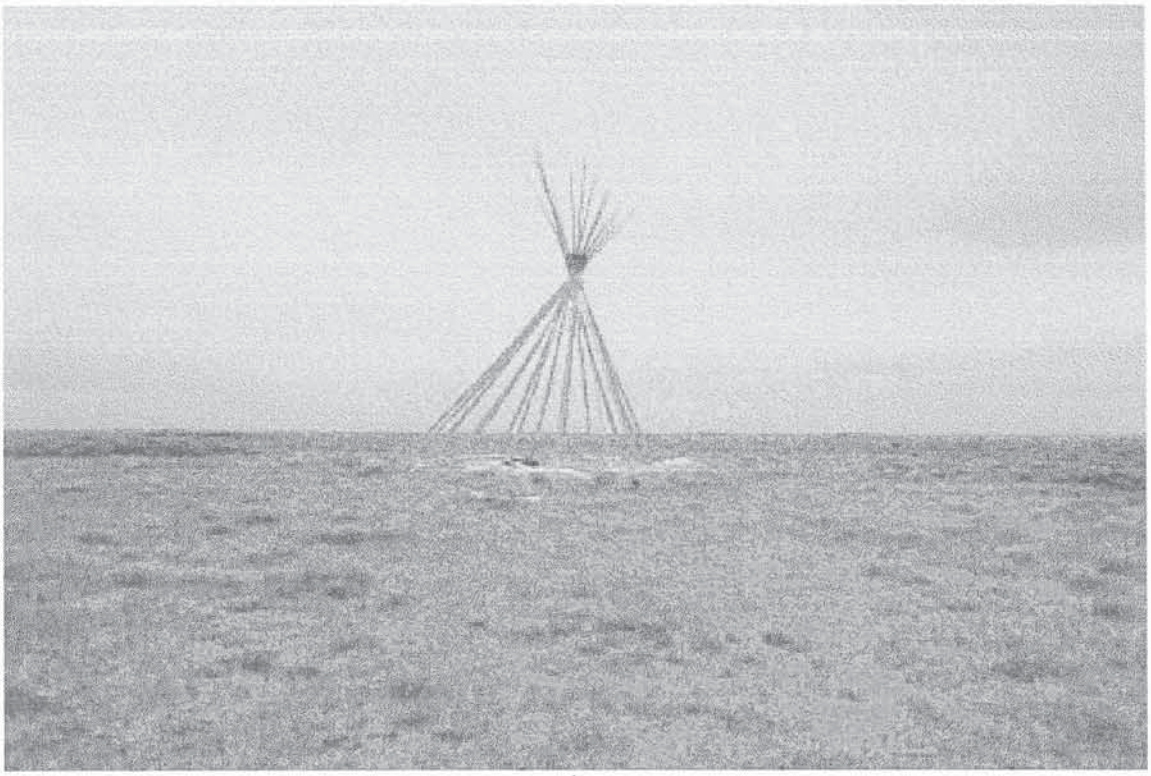
APPENDIX B

PHOTOGRAPHIC DOCUMENTATION OF PROPERTY
(May 16, 2011)



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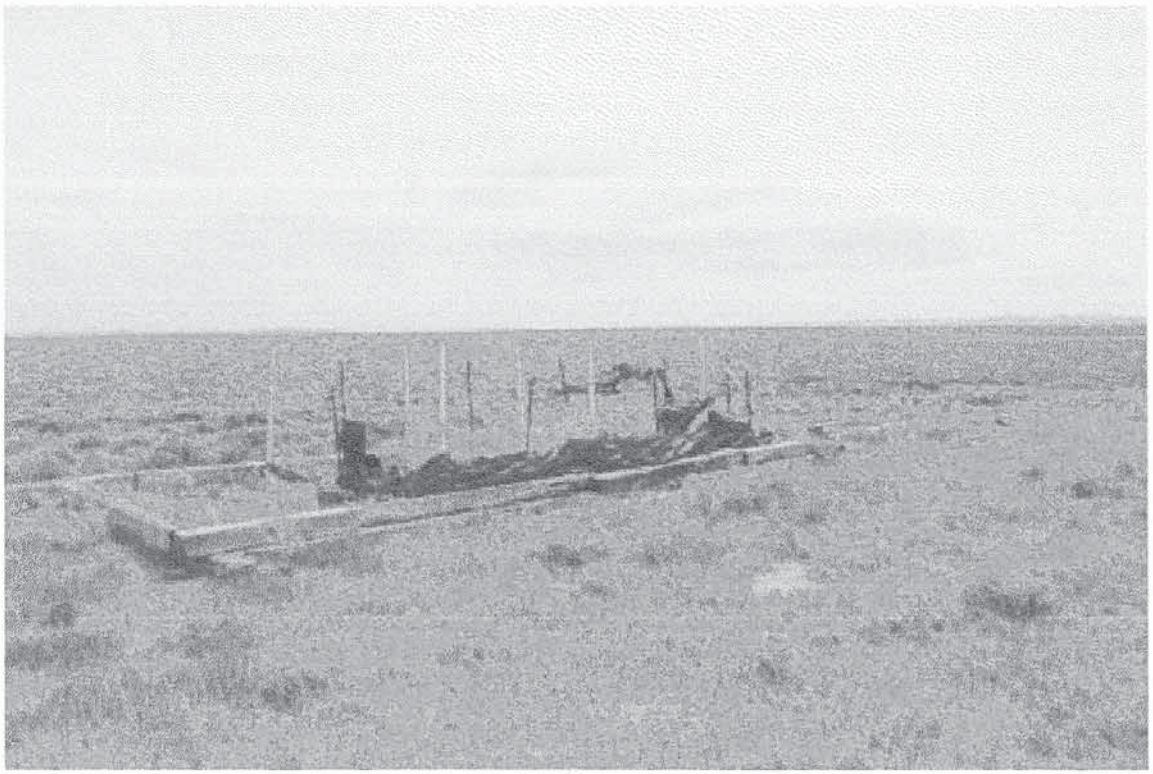

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3

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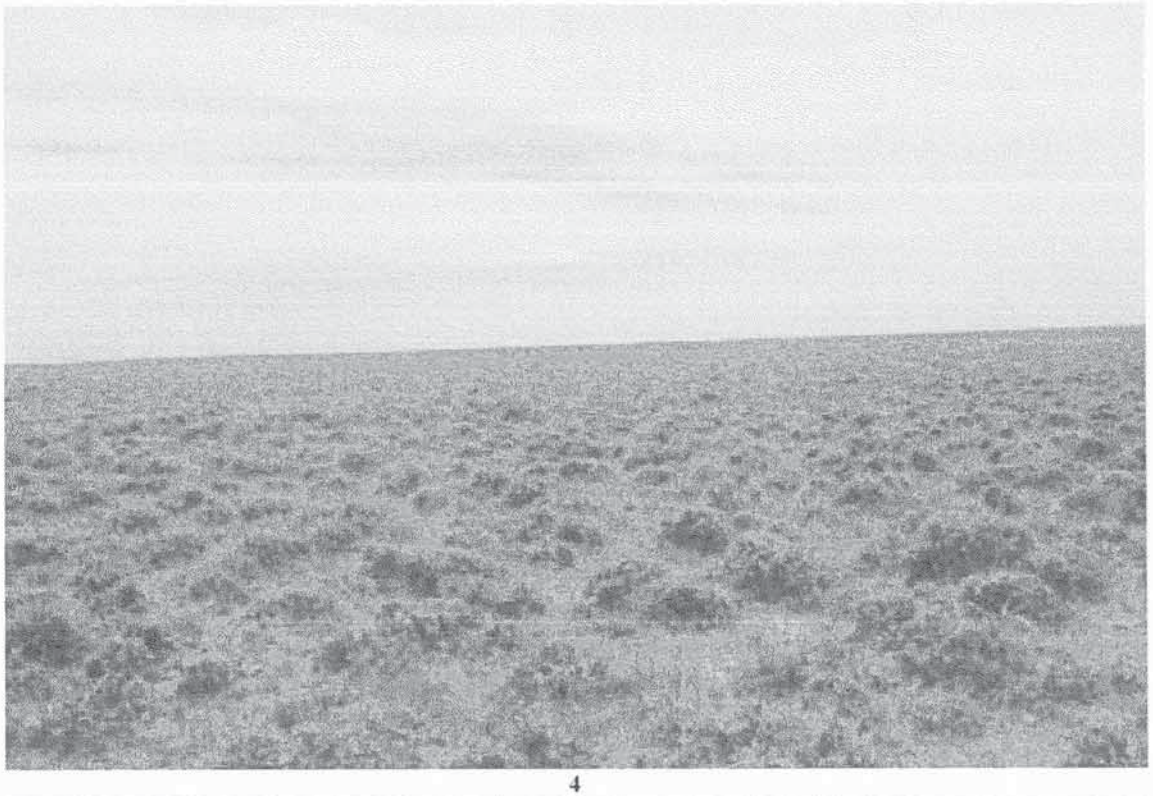

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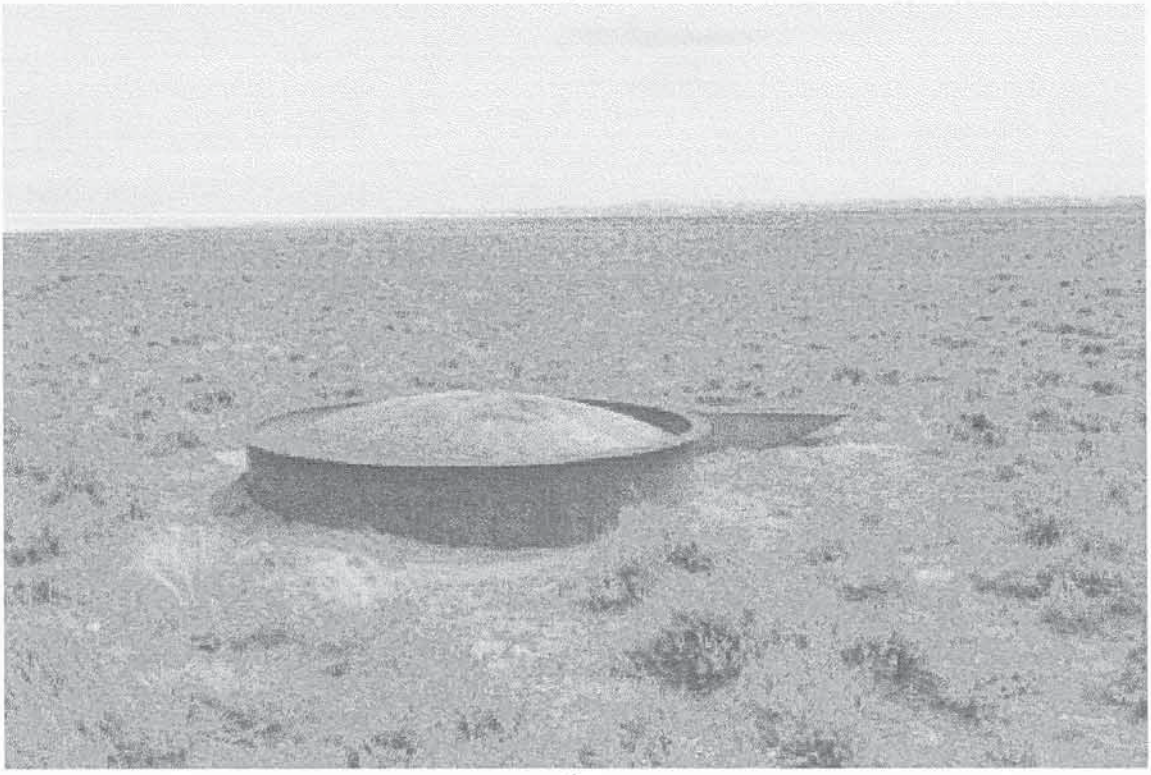

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TRANSACTION REPORT

MAR/04/2015/WED 04:37 PM

FAX(RX)

#	DATE	START T.	SENDER	COM.TIME	PAGE	TYPE/NOTE	FILE
001	MAR/04	03:01PM	15052131895	1:34:16	77	MEM.FULL G3	1411

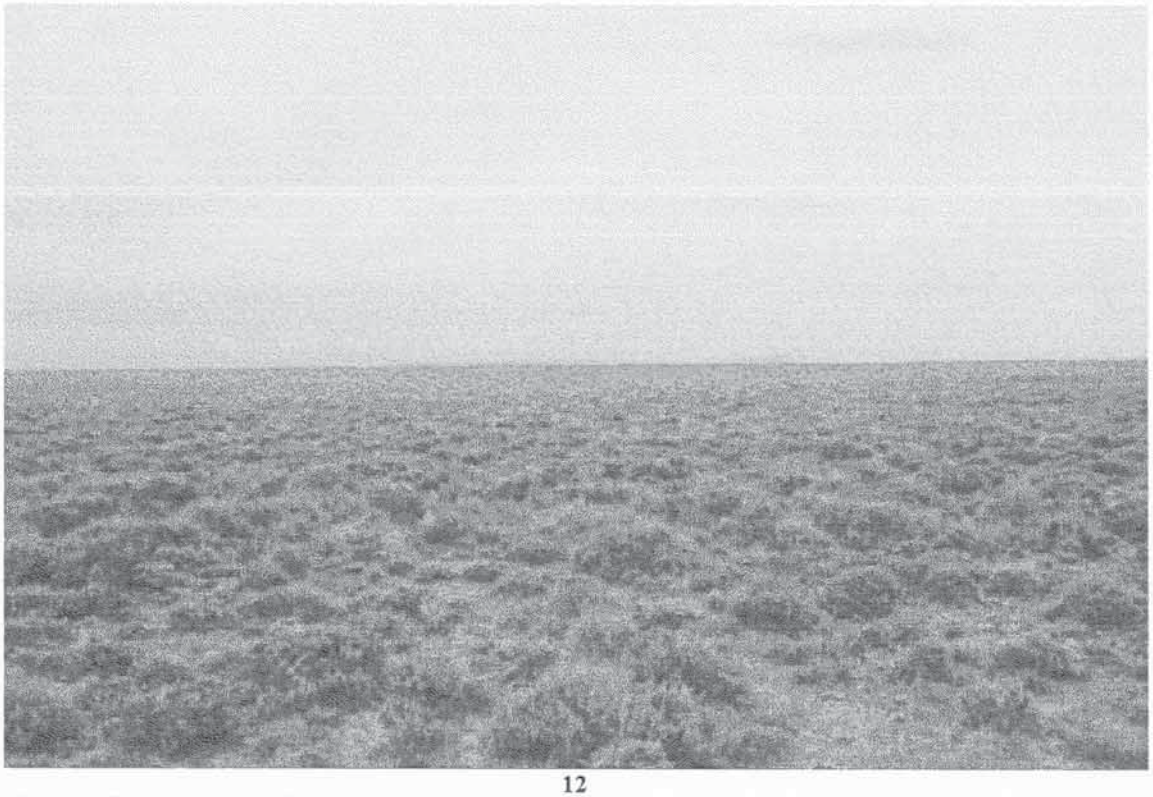
FAX COVER SHEET

TO	Mary Jo Rugwell
COMPANY	WildEarth Guardians
FAX NUMBER	13077756203
FROM	WildEarth Guardians
DATE	3/4/2015 2:54:06 PM MST
RE	May 2015 Wyoming Lease Protest

COVER MESSAGE

Contact:

Erik Molvar, WildEarth Guardians, (307) 399-7910



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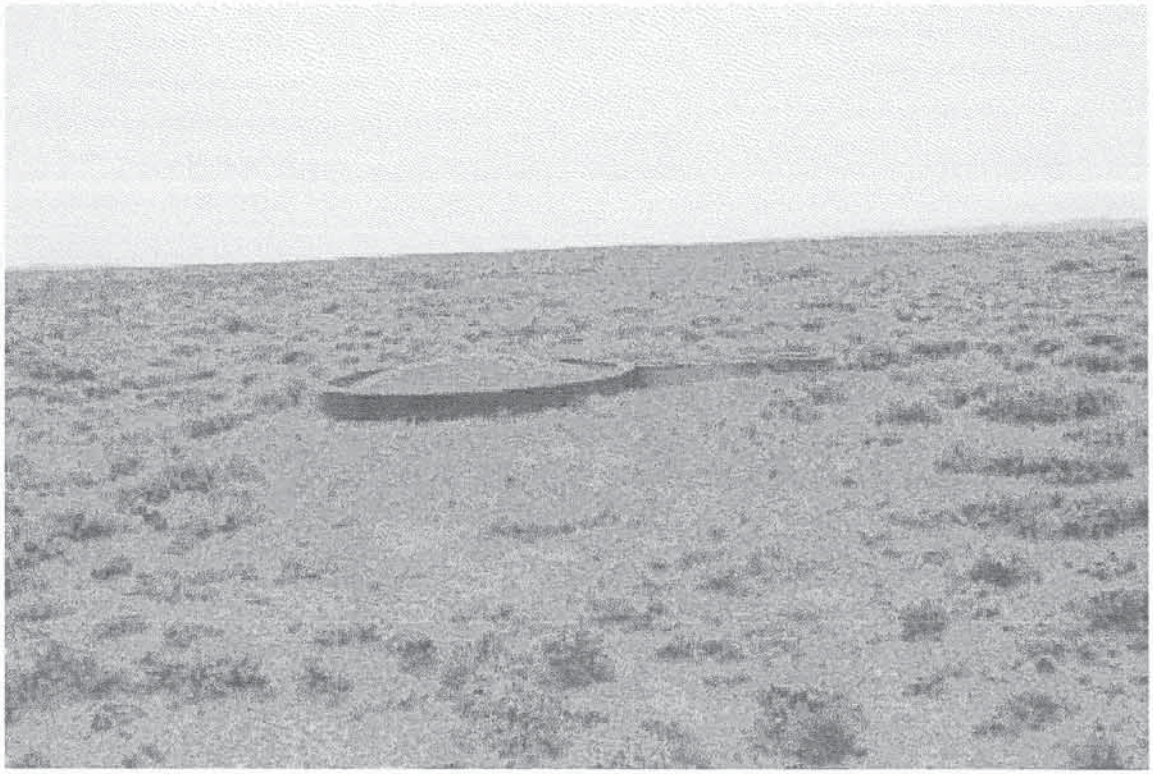

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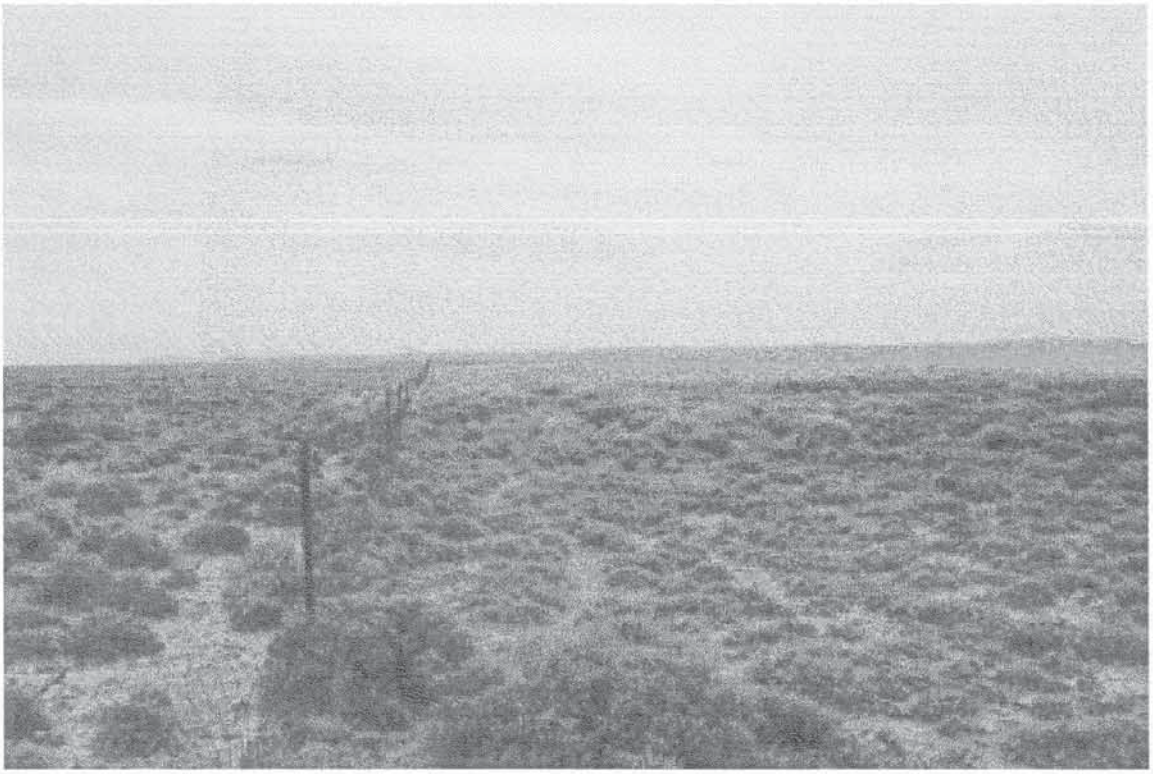

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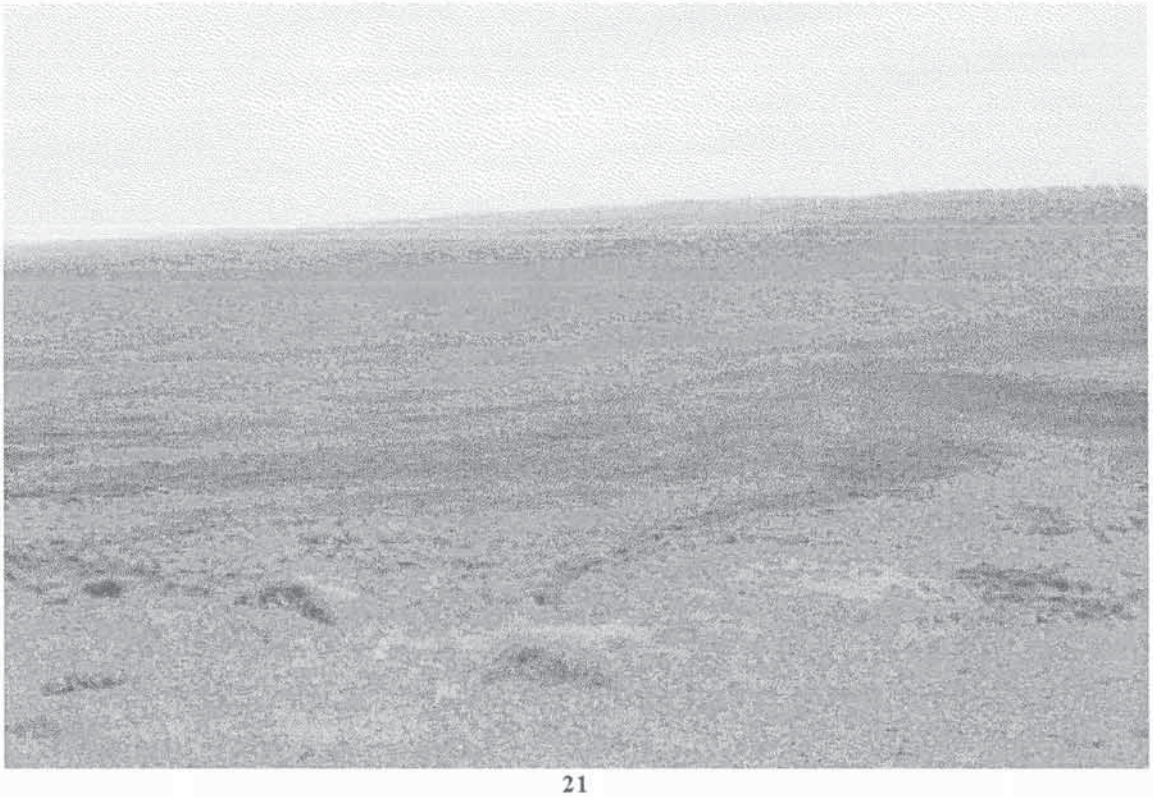

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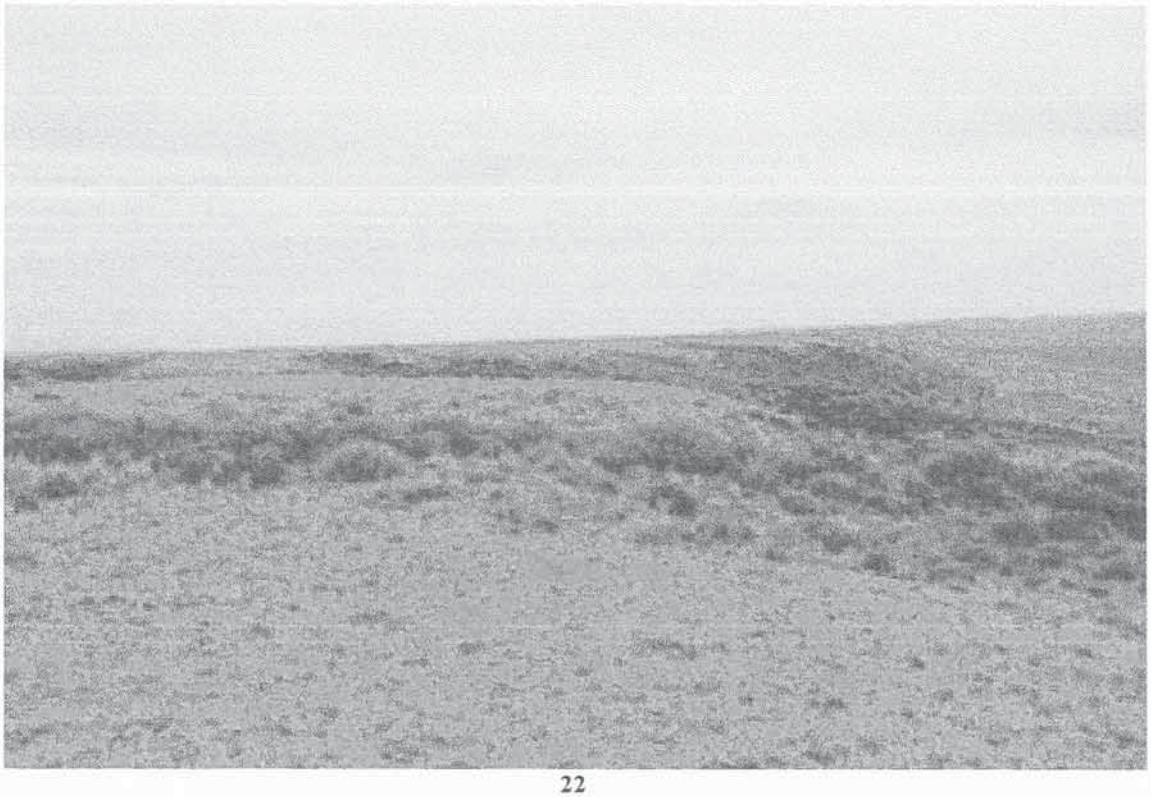

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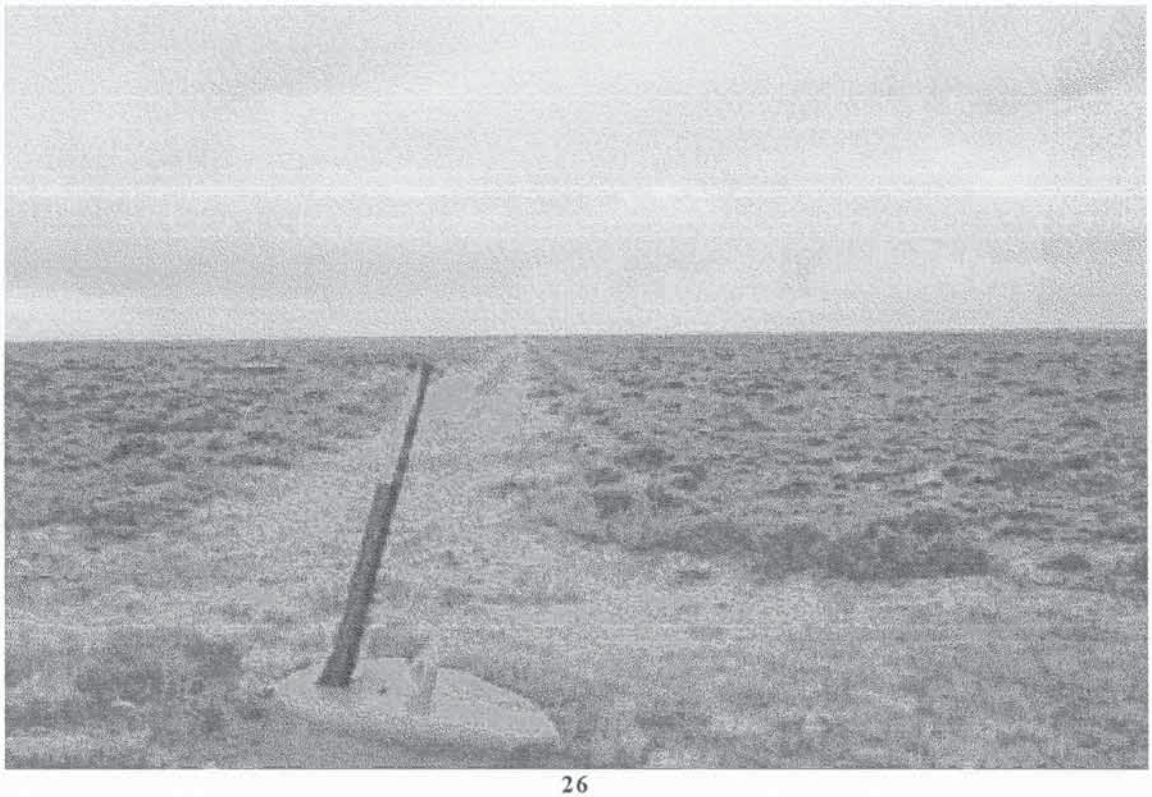

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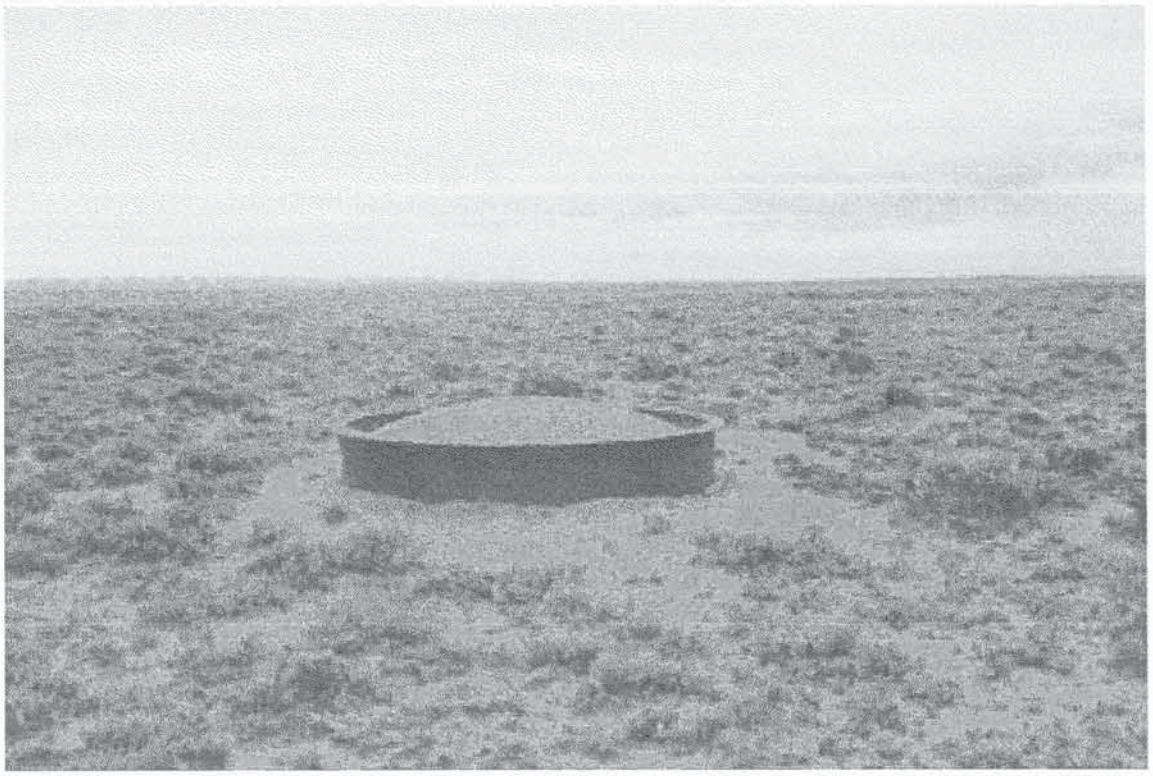

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APPENDIX C

WATER RIGHTS DOCUMENTATION

BLM NOTE:
Transmitted document
ends at this page

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