

BLM ENVIRONMENTAL ASSESSMENT (EA), DOI-BLM-WY-P070-2016-0041-EA
Stinson Aggregate, LLC
Hepp Sand/Gravel Mine, WYW-168419
Bureau of Land Management, Buffalo Field Office, Wyoming

1. INTRODUCTION

1.1. Background

OFFICE: BLM, Buffalo Field Office (BFO), 1425 Fort St., Buffalo, WY, 82834.

TRACKING NUMBERS: DOI-BLM-WY-P070-2016-0041-EA.

BLM CASEFILE NO.: WYW-168419.

TITLE OF PROPOSED ACTION: New Sales Contract (“contract”) for Stinson Aggregate, LLC’s (Stinson’s) existing Hepp Sand/Gravel Mine.

PROPOSED ACTION: Mine and remove 50,000 tons of sand and gravel over 5 years’ time from approximately 15 acres of private surface estate with all federally-owned, BLM-administered mineral estate.

LEGAL DESCRIPTION:

| County | Feature | TWN | RNG | Sec | Subdivision | Approval | Acres |
|--------------|---|-------|-------|-----|----------------|---|-----------|
| Johnson | Stinson Aggregate, LLC’s Hepp Sand/Gravel Mine | 51 N. | 80 W. | 29 | NE of Tract 88 | Previous (under BLM Sales Contract WYW-170029) | 10 |
| | | | | | | New | 5 |
| TOTAL | <i>NOTE: Existing disturbance is approximately 6.5 acres; total proposed disturbance is 14 acres.</i> | | | | | | 15 |

APPLICANT: Stinson Aggregate, LLC, 3706 Spring Hill Road, Gillette, WY, 82718.

Current Sales Contract Application, Previous Sales Contract, and Potential Future Sales Contract(s)

Stinson Aggregate, LLC (Stinson, proponent, or operator), applied to the Bureau of Land Management (BLM) Buffalo Field Office (BFO) on March 20, 2013, for a new Contract for the Sale of Mineral Materials (Sales Contract, contract, or authorization) (BLM Form 3600-9). This new contract is BLM serial casefile no. WYW-168419, and includes 15 acres. An approved Sales Contract will allow Stinson to sever and remove federally-owned Mineral Materials (here, sand and gravel) from 15 acres of BLM-administered mineral lands. Stinson intends the materials to be used for various construction and road maintenance applications off-site. Just after receiving the application, BFO began identifying and assessing the state of resources in the Project Area, and how and to what extent they are anticipated to be affected by the proposed activities; work on the National Environmental Policy Act (NEPA) document for this proposal also began. A primary issue identified for this proposal is its’ location in Greater Sage-Grouse (GSG) BLM Priority Habitat Management Area (PHMA), State of Wyoming Core Population Area (Core Area).

Wyoming Game and Fish Department (WGFD) personnel were consulted to provide recommendations for achieving GSG conservation in PHMA/Core Area with this project. WGFD recommended inclusion of sagebrush and forbs in the reclamation seed mixture. It has taken some time for the affected parties

(Stinson and the surface owners, the Hepp family) to agree on mitigation measures (reclamation seed mixture) sufficient to conserve GSG.

Stinson previously performed operations at this site under BLM Sales Contract WYW-170029, which was transferred to them in early 2012 from the previous operator, Hettinger Welding (Hettinger). All 6.5 acres of existing disturbance at the site was disturbed by Hettinger during their sand/gravel mining and removal activities prior to 2012. Sales Contract WYW-170029 expired on August 19, 2014, and included 10 acres. By that date, Stinson had removed all sand/gravel previously mined, processed and stockpiled by Hettinger. Only unusable and *in-situ* unmined materials remain at the site.

Wyoming Department of Environmental Quality Land Quality Division Mining Approval

The mine is permitted by Wyoming Department of Environmental Quality (WDEQ) Land Quality Division (LQD) via mine permit #1385ET. This WDEQ LQD permit type is a Limited Mining Operation (LMO), involving disturbance of 15 acres or less. All 15 acres proposed to be disturbed here are included in their LMO approval. Of the 3 types of WDEQ LQD Mine Permits, LMOs are approved in only limited situations, as LMO's are not actual permits but approvals. Due to the inherent limitations of this approval type, LMOs have the least stringent operational, informational, and reporting requirements.

Land Ownership at Mine Site

The land ownership at the Mine site is split estate; the surface is owned by one entity, and the minerals another. In this case, the surface estate is owned by the Hepp family, and all minerals are owned by the federal government and administered by BLM.

BLM Authority Regarding Disposal of Mineral Materials

BLM administers federally-owned Salable Minerals, also called Mineral Materials. Mineral Materials include sand, gravel, clinker, moss rock, and building stone, among others. BLM derives its' authority to dispose of federally-owned Mineral Materials from the following, among other laws, regulations, and policies:

- The Materials Act of 1947 (30 United States Code [USC] 601 et seq.), as amended;
- The Multiple Surface Use Act (30 USC 611);
- Mineral Materials Disposal regulations at 43 Code of Federal Regulations (CFR) 3600 et seq.;
- National Environmental Policy Act of 1969 (NEPA) (42 USC 4321); and,
- Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC 1701).

Economics of Aggregate (Including Sand and Gravel)

Aggregate is a term used for geological materials occurring in, or that can be processed to, a certain size range convenient for use in many construction applications, including building and maintaining roads. Aggregate can be comprised of rock and rock fragments of virtually any composition. The main desirable characteristics are size or size range, and that the material is hard enough to maintain that size or size range despite handling, wear, and weather conditions.

Aggregate is a low-price, high-volume commodity. The price obtained for aggregate tends to be low, making the profit margin from sale of this commodity slim. It often doesn't take a large increase in costs to make an operation unprofitable. To make up for the slim profit margin, aggregate mining companies therefore tend to look for and mine the largest and best quality deposits that can be found, and as close as possible to their intended site of use. The lower the quality of a deposit, the more it will have to be processed to obtain the desired amount of usable material, and the more unusable materials that will have to be handled during processing and reclamation. The farther a deposit is away from site of use the

higher the transportation costs. In addition, processing equipment tends to be moved during mining, to keep it close to the area being mined. This practice keeps costs of transporting the material from where it's being mined to where it's being processed lower, which also affects the profit margin.

Site Location, Access, and Current and Proposed Disturbance

The proposed mine site is approximately 10 miles east of Buffalo, Wyoming, and approximately 6 miles north of US Interstate 90 (I-90). The north end of the mine is entered through a locked gate directly off Tipperary Road (County Road [CR] 54) (see Figure 1), approximately 6 miles north of the junction of CR 54 and I-90. A primitive ranch road comes directly off CR 54 approximately 0.5 miles south of the mine entrance (see Figures 1 and 2), near the westernmost end of the proposed new disturbance. This "road" is well-vegetated and rarely used by the surface owners for ranch operations (see Figures 4a and 4c).

Although the mine road is relatively short, approximately 0.4 miles in length, it traverses nearly the entire length of the current disturbance area roughly down its' east side. The current disturbance of approximately 6.5 acres forms an elongated polygonal shape oriented lengthwise roughly NNW-SSE, and situated less than 0.5 miles from Dry Creek (see Figure 1). Current disturbance includes the entire area previously disturbed and mined under BLM Sales Contract WYW-170029, authorized to Hettinger (see Figures 1, 2, and 3a). BLM transferred that Sales Contract to Stinson in early 2012; Stinson has produced (removed) all remaining usable stockpiled mineral materials from the site. No new disturbance has occurred since 2012. Hettinger disturbed 6.5 acres, although BLM had approved 10 acres. Stinson is proposing here to disturb another roughly 7.5 acres, for a total proposed disturbance of 14 acres: 2.5 in the formerly approved area at the south end of the current disturbance, which will join the current area with a new one; and 5 acres in the new area (see Figures 1, 2, 3a and b, and 4a, b, and c).

The new area proposed by Stinson is a roughly rectangular shape oriented lengthwise roughly WNW-ESE, situated at, and to be joined with, the south end of the current disturbance (see Figure 1). The mine road will need to be extended by approximately 0.4 miles to traverse nearly the full length of the new disturbance area. The roughly 7.5 acres proposed disturbance includes all disturbances needed to mine and remove the proposed mass of 50,000 tons of sand/gravel from the new area. The 1-2 acre staging area would be situated within the southernmost end of the current disturbance.

1.2. Need for the Proposal

BLM's need for the proposal is to fulfill the goals, objectives, and management decisions of the 2015 Buffalo Approved Resource Management Plan (RMP) (BLM 2015a):

- Goal MR-5: *"Salable mineral resources (also called mineral materials) are available to support short-term and long-term local and regional demand."*
- Management Objective MR-5.1: *"Provide opportunities for exploration and development of salable mineral while avoiding or mitigating effects to other resource values."*
- Management Decision Salable-2001: *"The majority of lands in the planning area, including federally administered surface/minerals and split estate, are available for mineral exploration and development."*

Supported Management Goals in the 2015 BFO RMP Record of Decision (ROD) (BLM 2015b) include: salable minerals (p. 4-9); soil resources, including preventing erosion (p. 4-9); threatened, endangered, and candidate species, and their critical habitats (pp. 4-8 to 4-10); vegetation resources (p. 4-10); and, watershed and wildlife habitat (pp. 4-8 to 4-10); minimizing surface disturbances that promote invasive species; providing adequate reclamation; and, providing for wildlife conservation (p. 4-8).

1.3. Decision to be Made

The BLM will decide whether or not to approve Stinson’s proposed Sales Contract for their Hepp Sand/Gravel Mine project; and if so, with what attached stipulations.

1.4. Scoping and Issues

BLM internally scoped the proposal, along with receiving inputs from the surface owner, Stinson Aggregate, WDEQ LQD, Wyoming State Historical Preservation Office (WSHPO), and Wyoming Game and Fish Department (WGFD). Although WGFD is routinely consulted by BLM for mineral materials projects on BLM surface lands, they may not be consulted for such projects on private surface lands. As this proposed project is situated within PHMA/Core Area, WGFD was consulted by BLM. The outcome of this consultation is discussed in more detail later (see Sections 2.2, 3.4, 4.2.4, and 5). BLM also considered the following mandatory issues, and either they do not occur, or will not be adversely affected:

| | | |
|--|--|------------------------------|
| Areas of Critical Environmental Concern (ACECs) | Cave or karst areas | Environmental justice |
| Flood plains | Hazardous or solid wastes | Invasive, non-native species |
| Livestock grazing | Native American religious concerns | Noxious weeds |
| Paleontological resources | Prime or unique farmlands | Recreation |
| Sensitive soils | Traditional Cultural Properties (TCPs) | Visual resource management |
| Water quality & prime / sole source of drinking water | Wetlands and riparian areas | Wild and Scenic Rivers |
| Wilderness values, including Wilderness Study Areas (WSAs) | | |

2. PROPOSED PROJECT AND ALTERNATIVES

As this proposal is within GSG PHMA/Core Area and over the 5% disturbance cap, multiple alternatives were considered to address GSG mitigation. The alternatives, with the exception of the no action alternative, were designed to be consistent with Secretarial Order 3330 (Improving Mitigation Policies and Practices of the Department of Interior), Wyoming Executive Order 2015-4 (Wyoming GSG Conservation Strategy), and BLM’s GSG Habitat Management Strategy (Buffalo RMP Appendix D). BLM’s goal for any development proposal within PHMA is to meet the population management goals of the State by sufficiently demonstrating that no declines to core populations would be expected.

2.1. Alternatives Considered but Eliminated from Detailed Analysis

In addition to the three alternatives presented and analyzed in detail (Sections 2.2 through 2.4), two others were considered but ultimately rejected. These are listed and described below.

2.1.1. Acre-per-Acre Site Reclamation Prior to Disturbance

This alternative involves requiring Stinson to reclaim as many acres onsite as they plan to disturb, with the reclamation occurring before approval to disturb. For instance, Stinson would need to reclaim 1 acre of current disturbance before being approved by BLM to disturb 1 undisturbed acre. Stinson could reclaim 3.5 to 4.5 acres of the presently disturbed area (6.5 acres). The remaining 2 to 3 acres are necessary for a staging area (1 to 2 acres) and mine access road (0.4 miles long X 20’ wide, 0.97 acres). Although Stinson has no set mining sequence or timing, based on experience from other operations and operators, it’s likely they will mine the proposed extension of 7.5 acres in 3 sequences of 2.5 acres each.

As the proposed extension area is mined, each sequence would add to the length of the mine road and the total acres remaining disturbed until the end of the contract (5 years). By the end of mining, the mine road would be roughly 2.06 acres (0.85 miles x 20'), and the total area remaining disturbed would be roughly 4 to 5 acres. To access and mine the full highwall length for each of the second and third mining sequences, it was assumed that 40' needs to be left disturbed in front of the entire highwall length. This decreases the acres that can be reclaimed after mining each segment. Because reclaiming acreage at an equal rate to opening acreage for mining would be technically infeasible, this alternative was eliminated from detailed analysis.

2.1.2. Using an Alternative Mine Access Route

Another alternative considered but eliminated is using an alternate mine access route. The entrance to the primitive ranch road mentioned earlier is close to the westernmost end of the proposed expansion area (see Figure 1). Using it to access the proposed mining area may allow up to the entire 6.5-acre currently disturbed area to be reclaimed immediately. However, there are two problems: 1) Where to site the processing equipment; and, 2) Using this road may increase the acreage of their approved WDEQ LQD approved LMO over its' maximum limit of 15 acres. The 1- to 2-acre staging area could be situated in several places such as: 1) between the alternate access road entrance and the proposed expansion area; 2) within the proposed expansion area; 3) either north or south of the proposed expansion area; and, 4) the southernmost end of the current disturbance. Each of the options considered would require increased conveyor belts or trucks for moving material out of the excavations, and all may require additional excavation to reach the sand/gravel deposit. These options have increased cost and safety concerns, especially if the processing equipment is sited either above the mining excavation depth or outside of that excavation. These options also require building a road between the mining area and the processing area, going around the excavation which will add to the project's acreage necessary to mine the full 7.5-acre proposed expansion. Increasing the project acreage is not feasible, as their WDEQ LQD approved LMO has a maximum limit of 15 acres.

2.2. Alternative A – No Action

The No Action Alternative is for BLM to not approve a Mineral Materials Sales Contract for disposal of the federally-owned sand/gravel occurring in the project area. BLM's approval of any mineral materials disposal is a discretionary action. BLM's selection of this alternative will necessitate the applicant use another source of sand/gravel, or submit a new application for this site. In addition, Stinson's WDEQ LQD mining approval (#1385ET) for this site becomes unusable.

2.3. Alternative B – Proposed Action

2.3.1. Proposal

The Proposed Action is for BLM to approve a Sales Contract for Mineral Materials to Stinson. This will allow them to remove 50,000 tons of sand/gravel from a total of 15 acres of private surface/BLM-administered federal mineral lands over 5 years' time. A total of 14 acres are proposed to be disturbed: 6.5 acres of existing and 7.5 acres of new disturbance. All mining and removal activities would occur within the 14 acres, including the staging area which will also hold the topsoil, overburden, and prepared sand/gravel stockpiles. Stinson expects to use the sand/gravel for road surfacing and maintenance, and general construction activities, either through their direct use or via sales to other companies or the general public. Stinson owns a rock and stone yard in Gillette, Wyoming, where at least some of the sand/gravel from the proposed mine is likely to be sold.

This proposed project involves expanding an existing mine and disturbing an adjacent new area. The project area is situated in a GSG PHMA (Core Population Area). There are specific requirements within PHMA's (Core Population Areas) for conserving the species:

- To maintain (or improve) the quality of GSG habitat and forage;
- Total disturbance is limited to a maximum of 5%; and,
- Limit mineral extraction-related disturbances to a maximum of 1 per 640 acres.

The vegetation proposed to be disturbed by this project is considered as low quality GSG habitat (see Section 3.2, and Appendix A), only suitable for breeding purposes. The results of the Density and Disturbance Calculation Tool (DDCT) analysis conducted in 2014 for this proposed project are:

- Current total disturbance is 6.75% (this includes wildfires near the project area);
- This project will add 0.02% disturbance; and,
- Including this project, the density of minerals-related disturbances is 0.21 per 640 acres.

Additional information:

- Stinson has committed to vegetating all current and proposed disturbance in the project area (14 acres) with a seed mixture yielding suitable GSG nesting habitat and forage (see Sections 3.4 and 5); and,
- If the project is not approved, the 7.5 undisturbed acres will remain poor GSG habitat (crested wheatgrass), and the 6.5 current disturbed acres will be re-vegetated to a similar state (see Section 4.1).

WDEQ LQD mining approvals and permits for operations and reclamation involve requirements similar to those of BLM's in IM WY-2012-032.

In this case, since, the project is situated in a PHMA a stipulation will be attached requiring all existing disturbed areas unneeded for the proposed project to immediately begin undergoing reclamation; this is roughly half the 6.5 acres (approximately 3.5 to 4 acres, as calculated under Section 2.1.1). An additional stipulation will be attached requiring final site reclamation to occur within 12 months of fulfillment of the contract (50,000 tons removed over 5 years), whichever occurs first; by the end of 6 years from Sales Contract approval, the entire area must be re-contoured, topsoil re-applied, and the topsoil seeded. A WGFD-developed seed mixture will also be stipulated for all reclamation in the project area; this mix contains sagebrush and forbs to provide suitable habitat and forage for GSG. See Section 5.1 for these stipulations.

See Sections 3.4, 4.2.4, and 5 for more details regarding GSG concerns and needs, priority habitat and PHMAs, DDCT used to determine important information for these areas, and the WGFD-developed reclamation seed mixture.

As mentioned above, this proposed mine site is on private surface lands and achievement of satisfactory reclamation will be determined by WDEQ LQD (and the surface owner). WGFD will also monitor reclamation at this site to ensure final re-vegetation (including sagebrush) has achieved satisfactory density and height suitable for GSG habitat. As BLM has committed to following the GSG-related guidelines and requirements set up by the State of Wyoming, BLM consulted with WGFD to ensure GSG issues and needs would be addressed adequately in the proposed project. Reclamation of all disturbed acres will be required to achieve the same WDEQ and surface owner acceptable (regarding contouring, runoff, etc.), and WGFD acceptable (regarding vegetation) standards.

2.3.2. Mining Activities

Much of the basic information on mining and reclamation outlined here is from Hettinger's Mine and Reclamation Plans (2009a, b). Stinson indicated via oral and email communications to use Hettinger's information as theirs; their methods will be very similar. Stinson provided updates to this information as needed (2015; and, various oral and written communications with Stinson between June 2014 and September 2015). To help conserve GSG, the project will be stipulated: 1) to restrict disruptive activities between March 15 and June 30, annually; 2) no new surface disturbance; and, 3) no crushing/hauling of sand/gravel between the hours of 6pm and 8am.

Topsoil Removal and Storage. Before mining begins, the vegetation and topsoil covering the sand/gravel deposit will be removed. Topsoil thickness at the site varies, but generally between 18-24 inches. During their June 17, 2014, joint site visit, Stinson and Ms. Aggen visually estimated that several feet of overburden (unusable materials) sit below the topsoil and atop the sand/gravel. As each portion of a deposit is uncovered, it is determined visually at that time the thickness of the overburden. Blades, front-end loaders, scrapers, and dozers will be used to separately remove and stockpile the topsoil and overburden; scrapers whenever possible for topsoil to be as precise as possible. A buffer zone will be maintained around overburden stockpiles to keep these materials from mixing with topsoil. Topsoil stockpiles will be broadcast or drill seeded with a mixture of 1 or 2 quick-growing wheatgrass species at a rate of at least 20 pounds/acre to minimize erosion and weeds. This also helps retain the viability of the topsoils' microorganisms', essential for successful reclamation efforts. Each topsoil stockpile will be seeded at the first opportunity in the next growing season.

Sand/Gravel Mining and Processing. The sand/gravel deposit at this site is up to 10' or more thick. Mining will proceed in steps; one area of the deposit will be exposed and mined, then another, then another. The first excavation will be adjacent to the south end of the current disturbance. A stockpile of raw (unprocessed) sand/gravel, a "surge" pile, will be built up near the processing plant using front-end loaders as mining of the first area proceeds. The surge pile will be fed into the plant via front-end loaders. Blasting will not be needed or performed at this site. The processing plant will sit atop the currently existing working "floor" of this mine at the south end of current disturbance area. A mine floor or working floor is a sub-horizontal surface achieved after a given excavation to a certain depth.

The plant will consist of a portable screener and crusher. Conveyers will be used to transport the raw sand/gravel to the screener, the oversize material from the screener (typically up to 5" in diameter) to the crusher, and the undersize material from the screener (typically 2" or less in diameter) to the prepared product stockpile. As mining and processing progress, the stockpile of "fines" (very tiny particles, dust through very fine-sized sand) and other unusable materials will grow. This stockpile, and any large pieces that cannot be crushed, will be placed back into the pit post-mining. The processing plant will run via a portable generator. Dump trucks will haul the prepared sand/gravel off-site, usually for immediate use or to be stockpiled at Stinson's Gillette rock and stone yard for later sales.

The working floor will be some depth below the ground surface; possibly up to 20'. This depth is estimated to be the deepest depth of the base of the sand/gravel deposit. Noise from the mining and processing operations will be muffled to a great degree, except during vegetation and topsoil removal stages. No permanent structures will be built on site. The mine floor will expand over time, as mining progresses, and the portable processing plant will move over time as the particular "face" being mined will move over time. Average annual production of 10,000 tons is anticipated, although the actual amount per year may be greater or lesser, depending upon actual need.

Occupancy of Site. Mine operations will include vegetation removal, topsoil and overburden removal/stockpiling, sand/gravel mining, processing and stockpiling, unusable materials stockpiling, setting up and moving the processing plant, and transporting processed sand/gravel off-site. Operations will typically be sporadic, but will occur from 8am to 5pm, Monday through Saturday. The mine site will be unoccupied except during the above activities. Transport of processed sand/gravel off-site will occur sporadically throughout the year, based upon need, subject to any timing stipulations on this project.

Noise and Dust Control. There will be dust and noise during mining, processing, and transport. Water for dust suppression in the mining area, staging area, and roads will be obtained from private or municipal sources. This water will be transported in and applied using water tanker trucks. No impoundment is anticipated at the site. Exhaust mufflers on all vehicles and generators will reduce project noise. As mining progresses, the depth of the sand/gravel pit will channel noise upward, muffling it to a large degree from nearby areas.

Prevention of Erosion and Siltation. Stinson will control surface runoff by channeling (via constructing V-shaped ditches) and/or berming (constructing berms) around the road and mine area to direct runoff away from these areas. Temporary vegetation can reduce or eliminate erosion from stockpiles, berms, and any area threatened by erosional runoff. Other erosion controls that may be used are erosion logs, silt fencing, and culverts.

Handling of Toxic, Hazardous, Acid-Generating Substances. No toxic or hazardous materials will be used, or are expected to be generated, during the proposed activities. All waste generated at this site, including human waste, will be disposed of properly at an off-site designated location. Solid waste that may be generated are used tires, drained oil filters, empty lubricant containers, and metal equipment parts. In the event of a spill, or the uncovering of some toxic or acid-generating substance, it will be handled using proper procedures, and all necessary agencies will be advised of the situation. Spills of liquid petroleum products such as gasoline, diesel fuel, and used or unused motor oil, will be treated by removing affected soil to an area of the mine where it can be turned, disced, and left to weather; this soil will then be used during reclamation. Spills of refined petroleum products of 25 gallons or more will be reported to WDEQ Water Quality Division (WQD), and treated according to their specifications. Any and all waste produced in the mine area will be removed and disposed of properly.

Handling of Petroleum Products. All petroleum products (such as diesel fuel, motor oil, hydraulic fluid, brake fluid, etc.) that may be used on-site will be kept in a protected area to eliminate the possibility of groundwater contamination. Most of these products will be stored in containers, and the fueling area will be protected. All oil, lubricant, and fuel containers, as well as containers holding used oil and lubricants, will be stored in containers or a plastic-lined spill containment structure.

Physical Safety of Site. Stinson will berm all highwalls and deep excavations to help keep humans and wildlife from falling into them via their visual and physical cues. A sign providing company and contact person information has been erected, and will be properly maintained and updated (if needed), at the mine entrance. Signage may be erected along the public roadways (CR 54, and possibly also nearby TW Road) providing warnings that truck traffic will occur along those roads.

Weeds/Undesired Vegetation. There are no known concentrations of designated or prohibited noxious weeds on lands at the proposed mine site. Stinson will prevent the spread and/or serious infestation of

such vegetation in the mine area as recommended by WGFD (see Appendix A), and as will be stipulated in the Sales Contract. They will do so utilizing the following practices:

- The minimum amount of surface needed will be disturbed at any time;
- Surface disturbance across the proposed mine site will occur in stages;
- A mixture of quick-growing grasses will be broadcast on all topsoil stockpiles, and select disturbed surface areas, to limit the potential for undesired vegetation infestations;
- Grazing deferrals, selective fencing, and other practices, will be used to limit grazing by domestic animals on disturbed (and reseeded) lands, if needed;
- Should undesired vegetation take hold, Stinson will consult with Johnson County Weed and Pest Agency for suitable control practices; and,
- All applications of chemical herbicides will be performed by licensed applicators.

Cultural and Paleontological Resources Protection Plan. Stinson will report any unanticipated discoveries or findings of any cultural resources (including burial sites) or paleontological resources to the Wyoming State Historic Preservation Office (WSHPO) or the Wyoming State Geological Survey (WSGS), respectively. Stinson will protect any sites of discovery from further disturbance, and consult with WSHPO or WSGS to ensure that the resource(s) are properly evaluated and mitigated. These actions will occur before any mine activities in the site(s) of discovery resume.

2.3.3. **Reclamation Activities**

Much of the basic information regarding mining and reclamation outlined here is from Hettinger's Mine and Reclamation Plans (2009a, b). Stinson has indicated to use this information as theirs, as their methods will be very similar to those outlined to be used by Hettinger. Stinson has provided updates to this information as needed (2015; and, various oral and written communications with Stinson between June 2014 and September 2015).

As discussed earlier, BLM will stipulate that all existing disturbed acres not needed for continued operations will begin to be reclaimed immediately upon the contract's approval. Also, the entire project area is to be reclaimed (through seeding, as mentioned earlier) within 12 months of the mines' exhaustion, or the contract's fulfillment, whichever occurs first. Another stipulation will be that all final reclamation in the project area is to use the WGFD-developed seed mixture (see Section 5.1). Appendix C provides the reclamation requirements of Wyoming BLM; these requirements are also included in WDEQ LQD's operations and reclamation requirements.

Timing of Reclamation. After mining has begun, final reclamation may begin in areas of the mine where the sand/gravel has been exhausted or areas no longer needed. These areas are outside those that Stinson will be stipulated to begin reclaiming immediately upon contract approval due to the proposed project being in a GSG PHMA/Core Area (roughly 3 to 4 acres).

Backfilling, Recontouring, Grading, and Topsoil Redistribution. The post-mining pit slopes will be contoured to a 3:1 slope, or less, using a dozer. The mine floor will be graded to establish a uniform and smooth condition, as needed for reseeded. Once the backfilling, re-contouring, and grading have been completed satisfactorily, the topsoil will be re-spread via a scraper in as even and uniform a fashion as possible. All unusable sand/gravel (fines, low quality material, larger pieces, etc.) will be placed back in the pit prior to re-contouring. Any uncrushable boulders may be placed in the re-contoured pit, or along its' edges, in small groupings at irregular intervals to approximate a natural setting.

Prevention of Erosion and Siltation. Similar practices as those outlined for use in controlling/preventing erosion and siltation during mining activities may also be used during reclamation activities. These practices are especially important if some time elapses between backfilling, re-contouring, grading, and/or topsoil replacement and seeding. Stinson will use these practices as needed, until WDEQ LQD, assisted by WGFD, determines the reclamation to be adequate.

Seeding. After completing topsoil replacement, seeding will proceed in spring or fall, depending on anticipated precipitation and weather. No trees or shrubs are planned to be seeded/planted at this site. Prior to seeding, the seedbed will be prepared using tillage via a disc, harrow, or other similar equipment. Seeding will be accomplished using a drill seeder; the WGFD-developed seed mixture is provided in Section 5.1.

Protection of Newly-Seeded Areas. Areas newly-seeded should receive protection from grazing through either grazing deferrals or fencing. These areas will be protected in this manner for a minimum of 2 growing seasons, or when the WDEQ, WGFD, and the surface owner finds the re-vegetation acceptable.

Water Use. Water will be used during reclamation primarily as a dust suppressant. A water truck will be used to apply water to the access road, stockpiles/staging area, and/or mine pit, as needed. Water will also be used as a dust suppressant during backfilling, re-contouring, grading, topsoil redistribution, and seeding, if needed.

2.3.4. Conformance of Alternative B with Buffalo Resource Management Plan (RMP)

Alternative B (the proposed activities) conforms to the terms and the conditions of the BFO RMP (2015a) and the regulations at 43 CFR 3600. All activities associated with this project, should it be approved, must comply with all applicable state and federal laws.

2.4 Alternative C – Off-Site Mitigation

This alternative is identical to Alternative B, the Proposed Action, except it incorporates compensatory mitigation located off-site for effects that cannot be immediately mitigated on-site.

The number of acres required to be mitigated or reclaimed was calculated via the US Forest Service (USFS) “Instructions for Off-Site Mitigation Score Card – Sage Grouse Habitat” (2016), developed by the Thunder Basin National Grasslands and Medicine Bow National Forest. The “score card” calculations for this project are described and provided below.

Three “screens” are included in the score card: Habitat Presence, Landscape, and Site. The project area is within 2 miles of a lek and the poor quality habitat is suitable for breeding only; the Habitat Presence score is 4. The project area is in a Core Area, but not within a contiguous sagebrush stand, with no sagebrush height variation, no conifer encroachment, and the nearest lek is 1.8 miles (see Section 3.4); the Landscape score is 7. The sagebrush in the project area is suitable for breeding/lekking only; the Site score is 2. The Final score is 9; summing the Landscape and Site scores, corresponds to a grade of “F.” This grade of habitat is assigned an acre ratio of 1:1, meaning that for every 1 acre proposed to be disturbed, 1 acre must be mitigated or reclaimed. For this project, 7.5 acres are proposed to be disturbed, and therefore, 7.5 acres are required to be mitigated before the project will be approved.

A 2010 fire removed GSG habitat on BLM’s nearby Dry Creek Petrified Tree Environmental Education Area (EEA), less than 2 miles west of the project area. Using the estimated costs outlined in the USFS “score card” (2016), reclaiming one acre in this area would cost approximately \$1,218.00; for 7.5 acres

the total cost would be approximately \$9,135.00. (Costs: Application of herbicide, \$254.00; Planting shrubs, \$500.00; Mechanical (drill) seeding, \$100.00, or Broadcast seeding, \$114.00; and, Monitoring, \$350.00.)

3. AFFECTED ENVIRONMENT

The climate is semi-arid, receiving approximately 10 inches of precipitation annually. The proposed mine site is about 4,330 feet above sea level. There are no toxic or acid-producing materials or significant drainages present in the area that would be affected by the mining operation. The area is stable and not susceptible to erosional damage. No flooding problems exist in the area. Past and existing land uses in the area of the proposal include ranching, livestock and wildlife grazing, sand/gravel recovery, and oil/gas exploration and development. Post-reclamation land uses in/near the proposed project site will consist of these same activities. Surface disturbances have occurred, and are occurring, on other parcels to the north, west, and south of this proposed site. Ranching, livestock and wildlife grazing, and some aggregate development activities are all occurring near and surrounding the mine site. The mine site occurs on a low grassy hill and adjacent low sandy areas nearly adjacent on its' east boundary to Dry Creek. More low grassy hills surround the area, and somewhat higher hills capped by more resistant clinker (locally called "scoria," as these rocks often resemble true scoria) surround those.

Tipperary Road (County Road [CR] 54) runs roughly NNE-SSW in the area of the mine site, and is approximately 0.1 mile west of it; the mine entrance and access road come off CR 54 (see Figure 1). TW Road (CR 204) runs roughly E-W and is approximately 2.75 miles south of the mine site. US Interstate 90 (I-90) runs roughly NW-SE in the area; CR 54 crosses I-90 approximately 6 miles south of the mine site. All these roads are well travelled, being main transportation routes in the area. The City of Buffalo, Wyoming (approximately 4,600 people), is approximately 10 miles west of the mine site.

The nearest residents are members of the Hepp family, and several buildings of their ranch are approximately 1.5 miles south of the mine site; the ranch house lies just south of these buildings, and will be protected from much of the noise and dust that might be produced at the mine site. Aside from the current 6.5 acres disturbed at the site, the Hepp Ranch (1.25 mi) and Fuller Construction Inc.'s Hepp sand and gravel mine (0.75 mi) are the only existing surface disturbance within 1.5 miles of the proposed mine site. The Dry Creek Petrified Tree EEA is a BLM area of special interest, as it includes areas containing numerous partially to fully exposed petrified stumps and logs (see Section 3.6). The entrance to this area is approximately 1.5 miles southwest of the mine site, across Tipperary Road (CR 54) from the Hepp ranch house.

There are five other BLM-approved sand/gravel mines within 10 miles of this site: Fuller Construction, Inc., Hepp Mine, approx. 0.75 miles SW, inactive approx. 2 years, BLM casefile WYW-168382; Earth Work Solutions (WY), Stranahan Mine, approx. 5 miles SE, inactive approx. 4 years, WYW-170033/168461; Johnson County, Hakert Mine, approx. 8.5 miles SSW, in reclamation, WYW-170084; Campbell County, Hakert Mine, approx. 8.5 miles SSW (1 mile W of Johnson County's Hakert), active, WYW-168349/168491; and, CCC Services, LLC, Camino Mine, approx. 9 miles SSW (2.25 miles W of Johnson County's Hakert), not opened, WYW-170257.

3.1. Air Quality and Noise

BLM incorporates by reference here the air quality analysis from Section 3.1 of northern Campbell County's Clark 1 Environmental Assessment (EA), WY-070-EA14-045. Presently, this analysis area's occasional road traffic from ranching and mineral operations creates a light noise signature, similar to

that expected from this proposal. The closest residents are the surface owners approximately 1.5 miles south of the site. As the residential building is just south of a large barn and other ranch buildings, the mine will be out of sight from these residents. Sounds from the mine area will also be muffled due to the ranch’s layout and the residence being behind (south of) the barn.

3.2. Soils, Vegetation, and Invasive Species

The proposed sand/gravel mine is in an area characterized by low rolling hills covered by sagebrush grasslands and somewhat higher clinker-capped hills/knobs and ridges surrounding the proposed mine site. Plants observed in the surrounding area include Wyoming big sagebrush, native grasses, perennial forbs, annual grasses, annual forbs, and lichen. The draws are dominated by native grasses with mixed shrubs. Small stands of ponderosa pine occur on hills and ridges near the site. The proposed disturbance area, however, contains very little sagebrush or mixed grasses. It is mostly crested wheatgrass, poorly suited for GSG habitat; only providing potential breeding habitat, which is not limited. Areas surrounding the project area and within 0.6 miles, however, are considered by WGFD to be suitable GSG habitat for nesting, brood rearing, and wintering (see Appendix A).

3.3. Water Resources

The project area drains via Dry Creek, nearly adjacent to the mine site on its’ eastern edges and the proposed mine area on its’ southern edges. Dry Creek drains into Crazy Woman Creek approximately 8 miles to the NE. The project area does not include and wetlands or riparian habitat.

3.4. Wildlife

BLM performed a habitat assessment during the on-site inspection. Other resources utilized to determine known existing wildlife resources in the area were wildlife databases compiled and managed by BLM BFO wildlife Biologists, WGFD big game and GSG maps, and the Wyoming Natural Diversity Database (WYNDD).

Greater Sage-Grouse (GSG)

The project area is within the Buffalo PHMA. Five occupied GSG leks exist within 4 miles of the existing mine disturbance. Table 1 (below) lists these leks, their status, and their proximity to the project area. Suitable nesting habitat is limited immediately adjacent to the mine, but nesting, brood-rearing, and wintering habitat is present throughout the surrounding area (within 0.6 miles of the mine). The vegetative community in the expansion area is dominated by crested wheatgrass and considered to be low quality habitat for GSG.

Table 1. Sage-grouse leks surrounding Stinson’s Hepp Sand/Gravel Mine.

| LEK NAME | STATUS IN YEAR: | | | DISTANCE (IN MILES) AND DIRECTION FROM PIT |
|----------------|-----------------|----------|----------|--|
| | 2013 | 2014 | 2015 | |
| Christian I | inactive | inactive | active | 2.0 northeast |
| Christian II | active | active | active | 3.1 east |
| Christian III | active | inactive | active | 4.0 southeast |
| Dry Creek I | unknown | inactive | unknown | 3.0 northeast |
| Petrified Tree | inactive | inactive | inactive | 1.8 southwest |

The DDCT is used to analyze the disturbance amount and types within and surrounding a proposed project. A DDCT analysis was performed in 2014. Results from the analysis indicated that the proposed project will add 0.02% disturbance to the existing 6.75% disturbance. The assessment area (60,935.27 acres) will have 6.77% disturbance including the proposed project, (see Appendix A). PHMA's/Core Areas are to have on average a maximum of 5% disturbance and a maximum of 1 mineral extraction-related disturbance per 640 acres. These maximums are subject to valid existing rights and applicable laws. With the proposed project, the assessment area contains 0.21 mineral extraction-related disturbances per 640 acres.

Big Game

Big game utilize the area in the vicinity of the project location. The project area contains yearlong range for pronghorn and winter/yearlong for mule deer as mapped by the WGFD. Yearlong use is when a population of animals makes general use of suitable documented habitat sites within the range on a year-round basis. Animals may leave the area under severe conditions. Winter/yearlong use is when a population or a portion of a population of animals makes general use of the documented suitable habitat sites within this range on a year-round basis. During the winter months there is a significant influx of additional animals into the area from other seasonal ranges.

Migratory Birds and Raptors

Migratory birds are likely to nest within the vicinity of the proposed mine. Habitat in the vicinity of the project area is suitable for use by migratory birds that rely on grassland habitats. Biodiversity is limited because the proposed mine area is dominated by crested wheatgrass.

Raptor species expected to use the area for foraging and breeding include American kestrel, golden eagle, red-tailed hawk, great horned owl, and short-eared owl. There are no known raptor nests within one mile of the proposed pit expansion area. The nearest documented nest is of golden eagles approximately 1.3 miles to the south.

Special Status Species

Wyoming BLM has prepared a list of sensitive species on which management efforts should be focused towards maintaining habitats under a multiple-use mandate. The authority for the sensitive species policy and guidance comes from the Endangered Species Act of 1973, as amended; Title II of the Sikes Act, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; the U.S. Department of the Interior (US DOI) Manual 235 (2009); and, the BLM Manual 6840 "Special Status Species Management" (2008). Table 2 lists BLM sensitive species that may occur in the project area, and a brief description of the habitat requirements for each species.

No listed or proposed Threatened and Endangered (T&E) species, nor critical habitat, occurs in the project area.

3.5. Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act, BLM must consider impacts to historic properties (sites that are eligible for or listed on the National Register of Historic Places (NRHP)). For an overview of cultural resources that are generally found within BFO, the reader is referred to the *Draft Cultural Class I Regional Overview, Buffalo Field Office* (BLM 2010). A Class III (intensive) cultural resource inventory (BFO project no. 70070114) was performed in order to locate specific historic

properties which may be impacted by the proposed project. No cultural resources, including historic properties, are located in the proposed project area.

3.6. Paleontological Resources

The project area is mapped as occurring in the Fort Union Formation, which has a Potential Fossil Yield Classification (PFYC) of 2-3, or low to moderate. This PFYC means that the likelihood of fossils of scientific value is low to moderate. Known fossils in the general area are marine invertebrates, such as brachiopods and corals, and petrified wood.

The Dry Creek Petrified Tree EEA is a BLM area of special interest, as it contains numerous exposed and partially exposed petrified stumps and logs. This site contains several facilities, such as picnic tables, a parking area, a restroom, and a trail. The trail is approximately 0.8 miles long and was constructed to help the visitor see and read about the geological history of the area and the formation of the petrified wood. The site is visited year-round by tourists, locals, school tours, special interest groups (such as Boy Scouts and Girl Scouts), and scientists, among others. The entrance to this area is approximately 1.5 miles SW of the mine site.

3.7. Economics

The present and projected demand for sand/gravel is moderate in the region and it is used primarily for road construction and maintenance, as well as general construction. Numerous sand/gravel deposits of potentially usable quality occur in Johnson County. The sale of 50,000 tons of sand/gravel at this site would generate approximately \$850,000.00 at the price of \$17.00/ton).

4. ENVIRONMENTAL EFFECTS

4.1. Alternative A – No Action

Selection of the No Action Alternative, not mining the expansion area, would result in adverse impacts to resources, specifically vegetation, and GSG and other wildlife. Economics would also be adversely affected.. Stinson will need to find a new sand/gravel deposit and obtain a new WDEQ LQD LMO or Mine Permit for it, and possibly a BLM Sales Contract also. Not approving this Sales Contract will also negatively impact public economics: BLM will not be able to collect the expected royalties for the sale of 50,000 tons of sand/gravel at this site (\$34,500.00 at the current price of \$0.69/ton).

The current disturbance (6.5 acres) would not be seeded using the WGFD-developed seed mixture that was designed specifically for this project to increase the quality of GSG habitat and forage. The WDEQ LQD LMO that Stinson is operating under has no specific seed mixture or vegetation requirements other than to achieve a certain density and growth, and that the surface owners must agree with the mixture to be used. Although the former BLM Sales Contract (WYW-170029) expired on August 19, 2014, Stinson must still reclaim according to any stipulations attached to that contract. That contract included no specific reclamation stipulations regarding seed mixture, or vegetation density or growth. Therefore, no area of the mine is required to be seeded with the WGFD-developed, GSG-friendly seed mixture. As noted below, it is extremely unlikely the surface owners would use that mixture, as it is not desired by them for livestock grazing, the main activity of their ranch.

The current condition of the expansion area negatively affects GSG: they are not able to utilize that area for foraging, or virtually any other essential life activity except potentially breeding. The decreased variety of vegetative species in the expansion area affects the soil quality, the variety and robustness of

soil microbes, insects, and wildlife using the area. The current poor condition of GSG habitat in the expansion area will continue for the foreseeable future.

It is extremely unlikely the surface owners would remove the vegetation from the area and reseed with a mixture compatible with GSG conservation. Crested wheatgrass dominates the expansion area and immediately surrounding it was purposefully seeded with crested wheatgrass for livestock grazing.

Seeds from native grasses, sagebrush and forbs from surrounding areas may spread to the proposed expansion area naturally. If this occurs, patchy or sparse growth of certain species would likely result. The species variety and density needed for GSG conservation may not occur naturally. If it does, it would likely take many years (20 or more) to reach the needed state, even if limited or no further disturbance occurs at the site (such as livestock grazing).

4.2. Alternative B – Proposed Action

Although impacts to resources are expected from this project, BLM BFO has made a commitment in the Buffalo RMP (2015a) to dispose of mineral materials in the planning area, which includes Johnson County. Impacts to many resources will be eliminated, mitigated, or negligible. Although vegetation will be removed from the expansion area (7.5 acres), the entire mine disturbance (14 acres) will be re-vegetated with a seed mixture developed by WGFD specifically to improve GSG habitat and forage.

4.2.1. Air Quality and Noise

The mine will have the direct and indirect effect of making minor, periodic, almost immeasurable increases to the ambient dust in the Johnson County environment. Stinson stated in their Mine and Reclamation Plans that they will minimize dust through several measures including using a water truck. The prevailing winds blow away from the nearest ranch house, so it's likely that little, if any, dust from the mine would reach this residence. Mine ambient noises will be greatest in the early stages of each mining sequence, as the mine access road will be lengthened and improved, vegetation will be removed from each area to be mined, topsoil from each mining area will be salvaged and stockpiled, and mining and processing of sand/gravel from each area will occur. These activities will be cyclical, usually occurring only 1 or 2 times per year, as the mine "face" (the roughly vertical mine wall being mined) progresses over time. Also, these mining sequences will be of relatively short duration (up to 3 weeks). Between the cyclical mine sequences, usually only transportation of the prepared sand/gravel from the site will occur; these periods will average lower levels. Sound and dust from processing equipment will be greatly muffled or suppressed for areas outside the mine except directly behind the mine face, as the mine's highwalls (sub-vertical walls of material remaining in place after the area behind or between them has been mined) will serve to absorb much of the sound and/or direct it backward and allow much of the dust to settle before moving away from the site.

The nearest ranch house is not in line-of-sight of the mine, situated behind other ranch buildings; most mine noise will be abated. The nearest road (CR 54) is within 1 mile of the mine site. This road may experience slightly to moderately decreased air and sound quality 1 or 2 times per year while mining and processing occur. However, most mining will be well below the ground surface (10' to 20'). In addition, nearly all mining will occur into the hillside roughly perpendicular to CR 54; the majority of sound and dust created during mining will be "funneled" away from the road. Together, the topographic difference between the mining area and ground surface, and orientation of the mining will serve to greatly minimize the magnitude of impacts on air and sound quality near the mine. The next nearest road (CR 204) is approximately 4 miles away, and the next nearest after that (I-90) is approximately 6 miles; these will experience negligible to no decrease in air and sound quality. This is due to the distance

from the mine site and the orientation of mining to these roads. Also, the hills between the mine site and I-90 will serve to further decrease noise and settle dust before reaching it. However, there will be periodically decreased air and sound quality along all these roads while transporting of prepared sand/gravel is occurring. This may be as often as 5-6 days per week, 8-10 hours per day during times of increased need. However, the year-round average will be closer to 2-3 days per week, 8 hours per day.

4.2.2. **Soils, Vegetation, and Invasive Species**

Vegetation and soils in the mine site will receive direct and indirect impacts from this open-pit mine. Stripping the vegetation exposes the soil and subsoil, the sand/gravel deposit (and bare rock, if excavated that deeply) to erosive forces. Stinson's mine design will minimize erosion, and involves monitoring to ensure prompt corrective actions occur in the event erosion is noted. Stinson has a track record of minimizing the spread of invasive species in/near their projects, and is committed to proactiveness. BLM anticipates minimal direct and indirect effects to spreading weeds from this proposal, but will attach a stipulation requiring minimization and invasive species eradication actions.

Stripping the topsoil and stockpiling it can result in lowering soil productivity for a number of years. Stockpiling topsoil often kills a large percentage of its' microbes, and their populations can only begin to recover when the topsoil is spread out again. However, Stinson's mine design will reserve the topsoil in a manner that minimizes damage to soil nutrients and biota. The vegetation in the area to be disturbed (7.5 acres) will be destroyed, but when topsoil is re-spread, seeds embedded in the topsoil may assist mine re-vegetation. Final reclamation will require Stinson's seeding all disturbed areas (14 acres) using the WGFD-developed seed mixture, which specifically includes species important to GSG conservation. Therefore, all 14 acres of this mine will be reclaimed in such a way as to achieve suitable GSG habitat and forage; none of the 14 acres are currently suitable for GSG nesting, brood-rearing, or wintering.

4.2.3. **Water Resources**

Stinson's Hepp Sand/Gravel Mine is expected to have little to negligible direct and indirect effects on Dry Creek. The design features of the mine, as well as routine preventative measures Stinson employs, are expected to minimize water erosion, and water and sediment from entering Dry Creek. Berms will be constructed and maintained along the edges of disturbance near Dry Creek to keep sediment from the mine from entering the creek.

The deepest excavation depth of the mine is anticipated to be just 20' below the ground surface; this depth is above the water table. Thus, the proposal should have no direct and indirect effect on the area's ground water.

4.2.4. **Wildlife**

Greater Sage-Grouse (GSG)

The project is consolidated where sand/gravel mining is already occurring, placing disturbance adjacent to disturbance within 200 meters of a county road. The project will not alter any nesting, brood-rearing or winter habitat.

The DDCT (see Appendix A, and Section 3.4) showed that the assessment area for the mine (including the proposed new disturbance) is over the 5% cap (6.77%), largely because of wildfires. The BLM Geologist and Wildlife Biologist met with WGFD representatives at the mine location on September 17, 2014. The WGFD representatives indicated that the expansion could be recommended for WGFD approval for the following reasons:

- The proposed expansion area is poor GSG habitat (mostly crested wheatgrass);

- BLM could require a reclamation plan that adequately addresses the timely replacement of GSG habitat and forage; and,
- BLM could attach seasonal GSG disruption restrictions to the projects' approval.

WGFD concluded that if implemented as identified, the proposed action would not have further negative impacts to sage-grouse. Copies of the WGFD letters regarding the DDCT analysis results and developed seed mix to use at the mine site are included here (see Appendices A and B, and Section 5.1).

Research shows that GSG hens are sensitive to noise from oil and gas drilling operations when selecting a location for nesting, and they may therefore be sensitive to noise from other activities such as mining and crushing of gravel (Holloran et al. 2005, Aldridge and Boyce 2007, Holloran et al. 2007, Walker et al. 2007, Doherty et al. 2008, WGFD 2009). GSG are likely to continue to avoid the area. No new surface disturbance, and no disruptive activities (mining, crushing) shall occur annually between March 15 and June 30, for the life of the project (see also Section 5.1).

To improve the GSG habitat at the mine site in PHMA/Core Area, the WGFD-developed seed mix will be used in the specified amounts for all reclamation occurring in this Mine area. Stinson committed to this in their BLM-accepted Mine and Reclamation Plan (received July 6, 2015); a stipulation requiring this will be attached to BLM's approval of the Sales Contract. Reclamation of the previously-disturbed areas not needed for mining/removing sand/gravel from the proposed expansion area shall begin upon approval of the contract, as also stated in Stinson's Mine/Reclamation Plan. After completion of mining, the area will be reclaimed as outlined in Stinson's Mine/Reclamation Plan. Final reclamation activities for all mine areas will be completed within 12 months following removal of the authorized amount of mineral materials, or the authorizations' expiration or termination, whichever occurs first (see also Section 5.1).

Big Game

Big game may be displaced from the project area during disruptive activities such as mining and crushing/processing of sand/gravel. A study in central Wyoming reported that fluid mineral (oil/gas) drilling activities displaced mule deer by more than 0.5 miles (Hiatt and Baker 1981). A multi-year study on the Pinedale Anticline suggests not only do mule deer avoid mineral activities, but after three years of drilling activity the deer have not become accustomed to the disturbance (Madson 2005). Mule deer are more sensitive to operation and maintenance activities than pronghorn, and, as the Pinedale Anticline study suggests, mule deer do not readily habituate. A study in North Dakota stated "Although the population (mule deer) had over seven years to habituate to oil and gas activities, avoidance of roads and facilities was determined to be long term and chronic" (Lustig 2003). Deer have even been documented to avoid dirt roads that were used only by 4-wheel drive vehicles, trail bikes, and hikers (Jalkotzy et al. 1997).

Migratory Birds and Raptors

Migratory birds and raptors may avoid nesting in proximity of the project, in order to avoid impacts from noise, dust, and human activities. Drilling and construction noise can be troublesome for songbirds by interfering with the males' ability to attract mates and defend territories, and the ability to recognize calls from conspecifics (others of the same species) (BLM 2003). Noise from mining and crushing is expected to cause similar impacts, and likely to occur during the breeding season for most migratory birds that inhabit Wyoming. It is likely that those birds currently nesting within the vicinity of the pit may become acclimated to the level of disturbance. Birds that have not previously used the area for nesting may be discouraged from utilizing the habitat and avoid the area. However, the timing restriction to be attached to BLM's approval of this Sales Contract to benefit GSG will also benefit migratory birds: no

new surface disturbance between March 15 and June 30 annually. This timing restriction on surface-disturbing activities will minimize disruptive activities during the migratory bird breeding season.

Seven and a half acres of vegetation would be removed in order to access federal minerals, resulting in at least direct migratory bird habitat removal. Direct mortality of a bird or destruction of an active nest due to construction activities could result in a “take” as defined (and prohibited) by the Migratory Bird Treaty Act (MBTA), a nondiscretionary statute, and a violation of this law. See also FLPMA, Sec. 302(b). The potential of such impacts is limited in this instance, however, due to the limited biodiversity in the vegetative cover present. The limited vegetative species present at the site will be replaced by a more diverse mixture to benefit GSG. However, the greater vegetative diversity will also benefit other wildlife species, including migratory birds.

Special Status Species

Table 2 (at end of document) lists special status species that occur within the BFO area, a brief description of their habitat, whether the species is likely to occur in the project area, effects of the proposed project on the species, and the rationale for that determination.

4.2.5. Cultural Resources

BLM policy states that a decision maker’s first choice should be avoidance of historic properties (BLM Manual 8140.06(C), 2004). If historic properties cannot be avoided, mitigation measures must be applied to resolve the adverse effect. No historic properties will be impacted by the proposed project. No direct or indirect effects are expected from this project. Following the State Protocol Between the Wyoming BLM State Director and The *Wyoming State Historic Preservation Office [WSHPO]*, Section V(E)(iv) the BLM electronically notified WSHPO on March 2, 2015, that no historic properties exist within the area of potential effect. If any cultural values (sites, features or artifacts) are observed during operation, they will be left intact and the BFO Field Manager notified. If human remains are noted, the procedures described in Appendix L of the Powder River Basin Final Environmental Impact Statement (PRB FEIS) (BLM 2003) must be followed. Further discovery procedures are explained in Standard Condition of Approval (COA) (General)(A)(1) and in Appendix K of the Wyoming Protocol (WSHPO 2012) (see also Section 5.1).

4.2.6. Paleontological Resources

None of the marine invertebrates (such as brachiopods and corals) that may occur in the rocks in the mine area are of special significance. Any petrified wood in the project area is not scientifically important. The BLM thus anticipates the proposal will not have any direct or indirect impacts on the area’s paleontological resources. Therefore, no residual effects to paleontological resources are expected, and no mitigation or avoidance is imposed.

4.2.7. Economics

There will be no adverse direct or indirect effects on the local economy from permitting the proposed 14-acre mining operation. There will, however, be minor to moderate positive effects. Existing sources of manpower and equipment are currently employed by Stinson, and will continue to be employed as a result of approval of this project. Stinson will have a moderately-large source of sand/gravel to mine, allowing them to use directly or sell this material to other companies or the general public from their rock and stone yard in Gillette in Campbell County. There are relatively few good quality sand/gravel deposits in Campbell County, so the material from this deposit is valuable to Stinson to continue their business. The sand/gravel will be used by Stinson and the companies they sell to for road construction and maintenance, and general construction uses; the public will use the material in a similar manner.

4.3. Alternative C – Off-site Compensatory Mitigation

As stated in Section 2.3, this alternative differs from the Proposed (Alternative B) only in that it applies additional compensatory mitigation, located off-site for effects that cannot be immediately mitigated on-site. Only the anticipated effects from applying compensatory mitigation are described below.

4.3.1. Wildlife

Greater Sage-Grouse (GSG)

Approximately 1,000 acres were burned within the Dry Creek Petrified Tree Environmental Education Area (EEA) during 2010. The Dry Creek Petrified Tree EEA is a BLM area of special interest, as mentioned earlier (Section 3.6). This area would be ideal for reclamation and improvement of burned acres to GSG habitat, as this area is protected and monitored by BLM. BLM planted 100 sagebrush in the burn area, and has been controlling cheatgrass and monitoring the native grass/forb recovery. Planting 7.5 additional acres of sagebrush would benefit GSG by providing habitat and forage that was lost during the fire. Although many locations within the burn area will benefit, some that may be of the greatest benefit are adjacent to a surviving lek, connecting two areas of suitable habitat.

4.3.2 Economics

There will be adverse effects on Stinson from requiring them to provide for reclaiming/improving 7.5 acres of GSG habitat in the Dry Creek Petrified Tree EEA. As calculated in Section 2.4, this cost will be approximately \$9,135.00. As described in Section 1.1, aggregate (including sand and gravel) is a low-price commodity that must be mined and sold in large quantities to yield a profit margin.

5. MITIGATION AND MONITORING, AND CUMULATIVE AND RESIDUAL IMPACTS

As noted earlier (Section 2.4), Alternatives B (Proposed Action) and C (Off-site Mitigation) are virtually identical, except for the requirement of compensatory off-site mitigation. The discussions below regarding mitigation, monitoring, and cumulative and residual impacts are the same for Alternative B and Alternative C.

5.1. Mitigation

A timing limitation on sand/gravel mining, processing, and transporting (hauling) operations, which produce elevated noises, will be implemented to reduce potential impacts to nesting GSG hens; migratory birds will also benefit from this timing limitation. A timing limitation does not mitigate effects to wintering GSG that may use the area, however. Suitability of the project area for GSG will be negatively affected during the projects' lifetime due to proximity of activities to wintering habitat adjacent to the mine.

- 1) To reduce impacts of elevated noise levels from mining on nesting Greater Sage-Grouse (GSG):
No surface disturbing (mining) or disruptive activities (crushing) are permitted during GSG breeding and nesting period (March 15 – June 30) at all locations.
- 2) To reduce long-term impacts to GSG in a GSG BLM Priority Habitat Management Area (PHMA)/Wyoming Core Population Area:
 - a) After completion of mining, the area will be reclaimed as described in the BLM-accepted Mine and Reclamation Plan submitted by Stinson Aggregate on July 6, 2015. The reclamation will be completed within 12 months following removal of the authorized amount of mineral materials, or the authorizations' expiration or termination, whichever occurs first.

- b) The following WGFD-developed seed mixture is required to be used in the specified amounts for all reclamation occurring in the mine area:

| Plant Species | PLS * |
|--|--------------|
| Western wheatgrass, <i>Pascopyrum smithii</i> | 3.0 |
| Green needlegrass, <i>Nassella viridula</i> | 3.0 |
| Bluebunch wheatgrass, <i>Pseudoroegneria spicata</i> | 3.0 |
| Slender wheatgrass, <i>Elymus trachycaulus</i> | 2.0 |
| Globe mallow, <i>Sphaeralcea ambigua</i> | 1.0 |
| Alfalfa, <i>Medicago sativa</i> | 2.0 |
| American vetch, <i>Vicia americana</i> | 1.0 |
| Lewis flax, <i>Limum perenne</i> | 0.5 |
| Purple Prairie clover, <i>Dalea purpurea</i> | 1.0 |
| Fringed sage, <i>Artemisia frigidia</i> | 0.5 |
| Wyoming Big Sage, <i>Artemisia tridentata wyomingensis</i> | 2.0 |
| TOTAL | 19.0 |

* PLS = pounds live seed per acre, using drill seeding.

- 3) If any cultural values (sites, features or artifacts) are observed during operations, they will be left intact and the Buffalo Field Manager notified. If human remains are noted, the procedures described in Appendix L of the PRB FEIS (BLM 2003) must be followed. Further discovery procedures are explained in Standard COA (General)(A)(1) and Appendix K of the Wyoming Protocol (WSHPO 2012).

5.2. Monitoring

Monitoring will be regularly conducted by BLM and WDEQ staff. The mine area will be monitored until final reclamation of the area is completed. WGFD will be consulted to ensure satisfactory growth and density of vegetation for GSG forage and habitat has been achieved prior to Bond release (BFO RMP Table 2.6 will be used as the standard).

5.3. Cumulative Impacts

Wildlife

The GSG is currently being impacted by many factors occurring within their range, including mineral development, wildfire, and West Nile Virus (WNV), which occur on private and state lands as well as federally-administered surface and sub-surface estate.

Studies document the additive impacts of energy development and WNV as a threat to GSG persistence in the PRB (Garton et al. 2011, Taylor et al. 2012). The cumulative and synergistic effects of CBNG development and WNV in the PRB area will continue to impact the local GSG population, causing further declines in lek attendance, and could result in local extirpation: “[f]indings reflect the status of a small remaining sage-grouse population that has already experienced an 82% decline within the expansive energy fields.” (Taylor et al. 2012).

Current well densities reduce the effectiveness of PRB PHMA’s/Core Areas (Taylor et al. 2012). Continued energy development around these areas will reduce their remaining value. WNV outbreaks

combined with energy development reduce GSG populations and interact to exacerbate population declines. The effects of one WNV outbreak in a year could cut a population in half. Absent a WNV outbreak, or another stochastic event of similar magnitude, immediate extirpation is unlikely.

Cultural

Construction and development of mineral resources impacts cultural resources through ground disturbance, unauthorized collection, and visual intrusion of the setting of historic properties. Destruction of any archeological resource results in fewer opportunities to study past human lifeways and changes in human behavior through time, and to interpret the past to the public. Additionally, these impacts may compromise the aspects of integrity that make a historic property eligible for the NRHP. Recording and archiving basic information about archaeological sites and the potential for subsurface cultural materials in the proposed project area may serve to partially mitigate potential cumulative effects to cultural resources. BLM has the authority to modify or deny approval of proposed projects on split estate lands (private surface/federal minerals), but that authority is limited to the extent of the federal approval. Historic properties on private surface belong to the surface owner and they are not obligated to preserve or protect them. The BLM may go to great lengths to protect a site on private surface from a proposed project, but the same site can be legally impacted by the private surface owner at any time. Archeological inventories reveal the location of sensitive sites and although the BLM is obligated to protect site location data, information can potentially get into the wrong hands resulting in unauthorized artifact collection or vandalism. BLM authorizations that result in new access can inadvertently lead to impacts to sites from increased visitation by the public.

5.4 Residual Impacts

Alternative A – No Action

If the no-action alternative (Alternative A) is selected, the residual impact will be use of a less GSG-beneficial seed mix for reclamation of the existing 6.5 acres of disturbance. The entire 14 acre project area would remain as crested wheatgrass, poor suitability for GSG habitat.

Alternatives B, and C – Proposed Action, and Off-site Mitigation

Hauling activities may result in inadvertent killing of big game and migratory birds, as well as degrading habitat quality along roads due to noise and dust. These impacts are anticipated to continue during the 5-year permit period for the mine.

Presently, the vegetation in and immediately surrounding the proposed mine area is primarily crested wheatgrass, which is not favored by most wildlife species. With the WGFD-developed seed mixture being used during reclamation, long-term habitat suitability for GSG, migratory birds, big game, and other species should increase resulting in a net conservation benefit.

During the construction phase, there will be a number of personnel working across the project area using heavy construction equipment without the presence of archaeological monitors. Due to the extent of work and the surface disturbance caused by large vehicles, it is possible that unidentified cultural resources can be damaged by construction activities. The increased human presence associated with the construction phase can also lead to unauthorized collection of artifacts or vandalism of historic properties.

6. INTERDISCIPLINARY TEAM PREPARERS, AND INTERAGENCY REVIEWERS

This document was prepared by Kerry L. Aggen, Geologist and Project Lead for Mineral Materials projects, BLM BFO. Individuals and agencies consulted during preparation of this Environmental Assessment and prior to the issuance of the proposed BLM Sales Contract include:

| Name | Agency / Duty | Name | Agency/Duty |
|------------------|------------------------------------|---------------|-----------------------------|
| Jaime Jakes | WDEQ LQD Natural Resources Analyst | Kerry Aggen | BLM Geologist, Project Lead |
| | | Donald Brewer | BLM Biologist |
| Tim Thomas | WGFD Biologist | Seth Lambert | BLM Archaeologist |
| Amanda Withroder | WGFD Biologist | Tom Bills | BLM NEPA Coordinator |

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Figure 1. Plan-view map showing location and access to Stinson’s proposed Hepp Sand/Gravel Mine (WYW-168419). The current disturbed area (approx. 6.5 acres) is outlined in red and oriented roughly NNW-SSE, as recorded via GPS on August 6, 2008, by BLM Geologist Gerald Queen, and no further disturbance has occurred. A survey showing existing and proposed disturbance areas is outlined in blue; this was supplied by Stinson in their BLM-accepted Mine & Reclamation Plan (2015). The proposed disturbance area (7.5 acres total) is adjacent to existing (2.5 acres) and extends westward (5 acres).

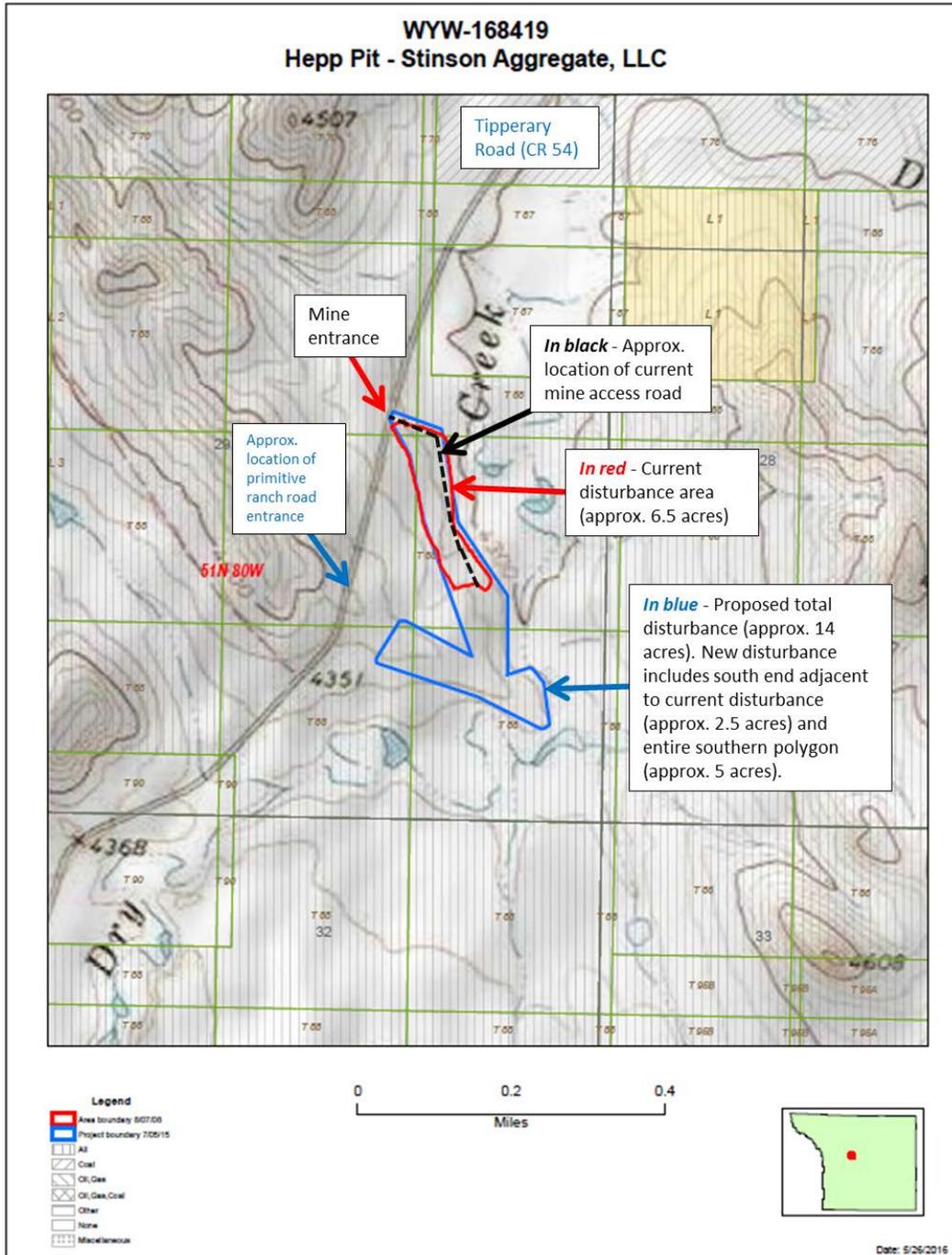
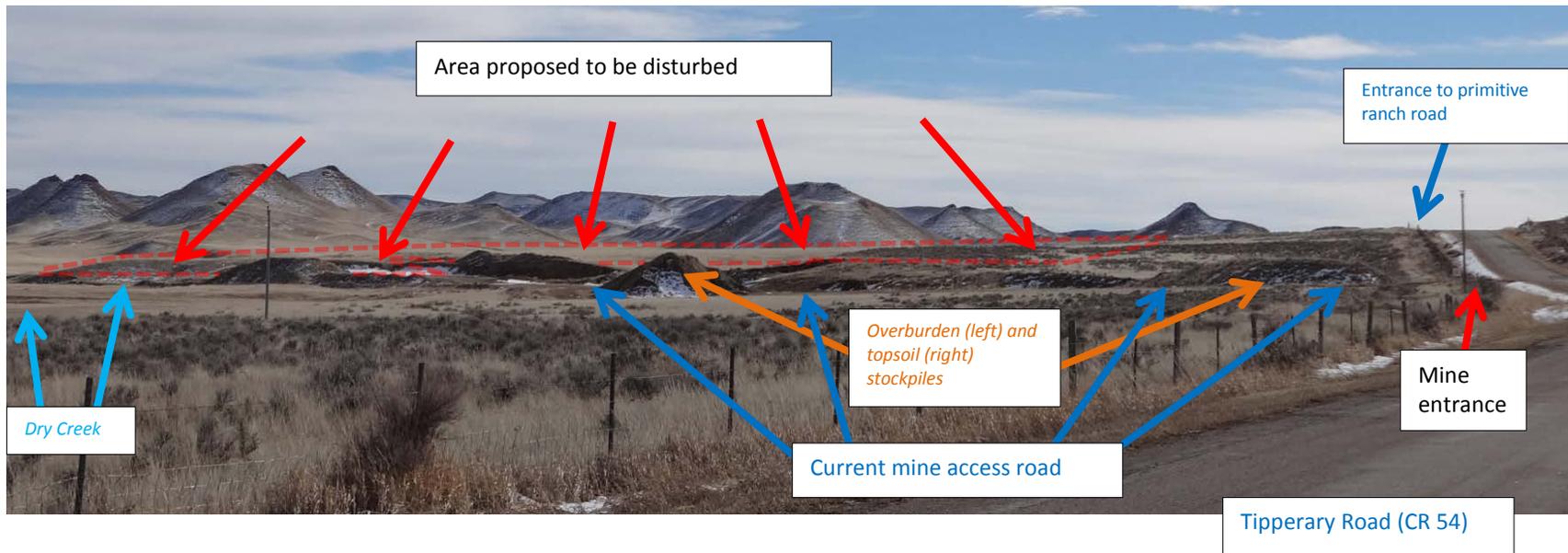


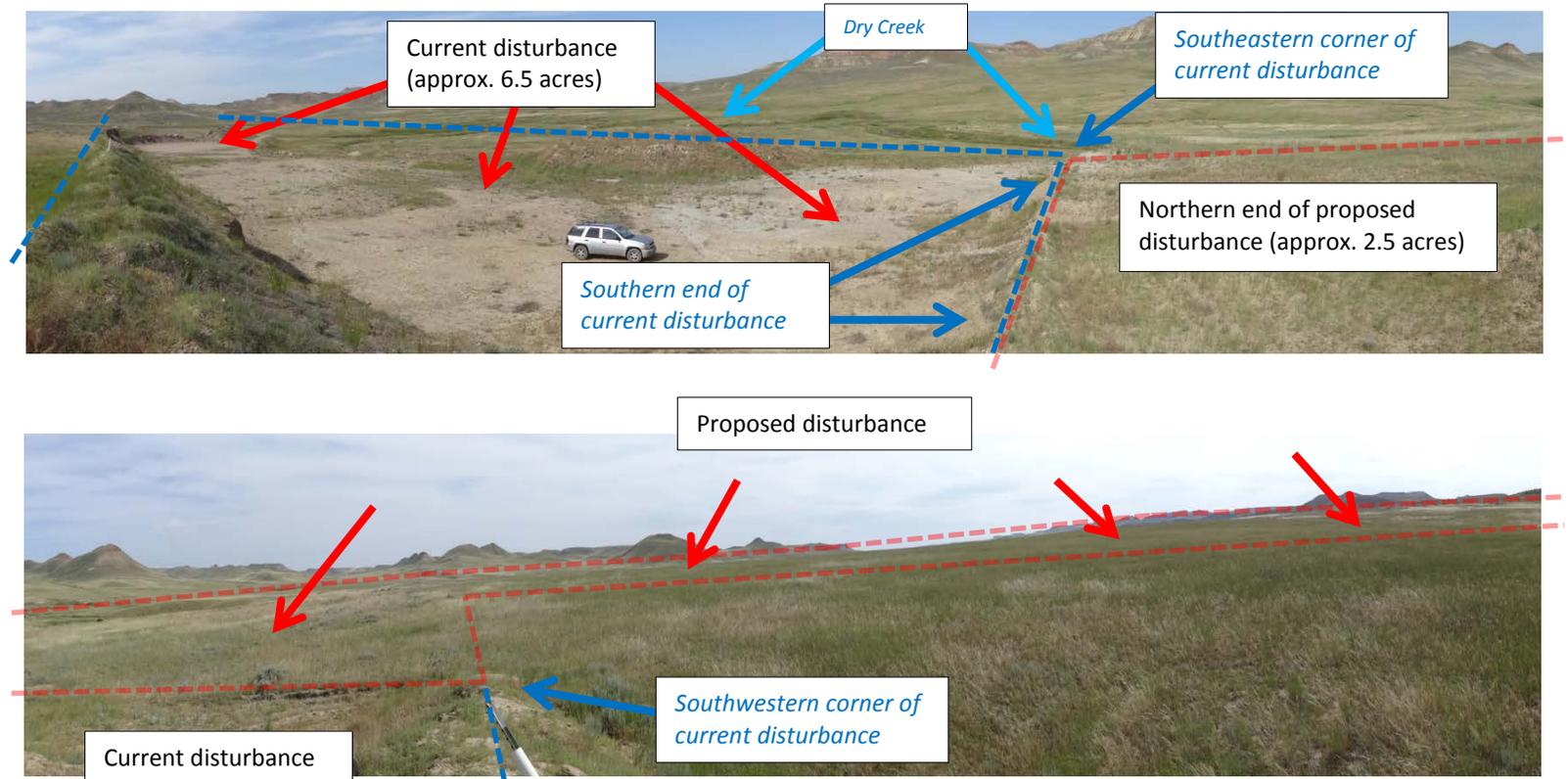
Figure 2. Panoramic photograph of Stinson’s proposed Hepp Sand/Gravel Mine (WYW-168419). Photo shows from the side the existing disturbance in far middle ground (approx. 6.5 acres), and proposed disturbance outlined by light red dashed lines (adjacent and nearly adjacent to the current disturbance; approx. 7.5 acres total). Also seen are the mine entrance (off Tipperary Road, CR 54), mine access road (traverses entire length of current disturbance, along its’ N and E edges), Dry Creek (nearly adjacent to left (E side) of mine site), and entrance to the primitive ranch road (approx. 0.5 miles S of mine entrance). Photo taken by Kerry L. Aggen on February 25, 2015, looking approx. SSE (left) through S (right) from Tipperary Road (CR 54) approx. 0.5 miles N of the mine site.



Figures 3a and 3b. Panoramic photographs of Stinson’s proposed Hepp Sand/Gravel Mine (WYW-168419). Approximate boundaries of proposed disturbance are shown by light red dashed lines. Pix taken by Kerry L. Aggen on July 14, 2014, from SW corner of current disturbance. Top photo looking approx. NNW (left) through ENE (right); bottom photo looking approx. ESE (left) through WSW (right).

Figure 3a. Top photo – Existing disturbance in left through central fore-and middle-ground; northern end of proposed disturbance is adjacent to southern end of existing disturbance. Dry Creek is nearby in middle-ground, E of mine; areas of darker green reveal its’ location.

Figure 3b. Bottom photo – Southwestern corner of current disturbance (bottom left foreground) and the stake near it; adjacent is the northern end of proposed disturbance (top left foreground) and southern portion of proposed disturbance (left through right far foreground).

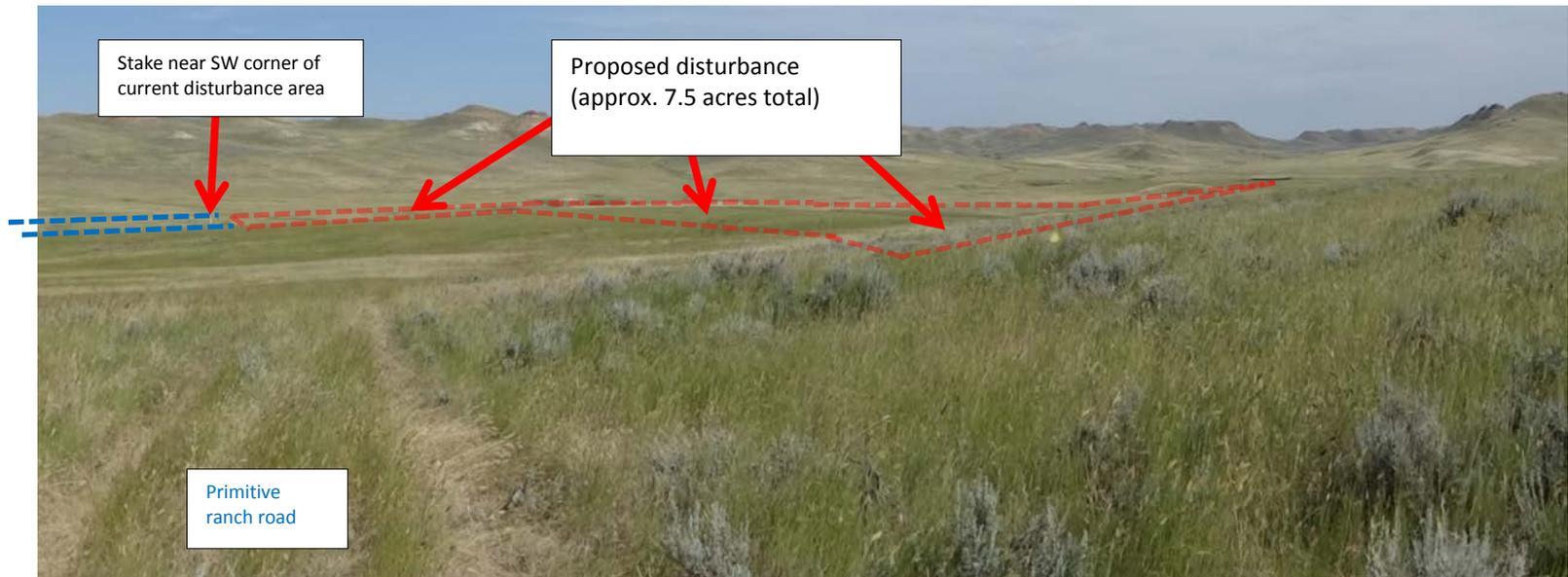


Figures 4a, 4b, and 4c. Panoramic photographs of Stinson’s proposed Hepp Sand/Gravel Mine (WYW-168419). Approximate boundaries of proposed disturbance are shown by light red dashed lines. Pix taken by Kerry L. Aggen on July 14, 2014.

Figure 4a. Top photo, this page – Southwestern corner of current disturbance and areas proposed to be disturbed. Proposed disturbance is to begin adjacent to existing on its’ southern end, and continue along hilly portion westward not quite to the fenceline just off CR 54 (just behind the point from which photo was shot). Photo taken looking approx. E (left) through SSE (right) toward proposed disturbance from location at entrance for primitive ranch road just off CR 54.

Figure 4b. Top photo, next page – Photographs of northern end and the eastern end of the southern portion of proposed disturbance. Photos taken looking approx. S (left) through W (right) from SE corner of current disturbance.

Figure 4c. Bottom photo, next page – Photograph of nearly entire southern portion of proposed disturbance. Photo taken looking approx. WNW (left) through ENE (right) from SE corner of current disturbance.



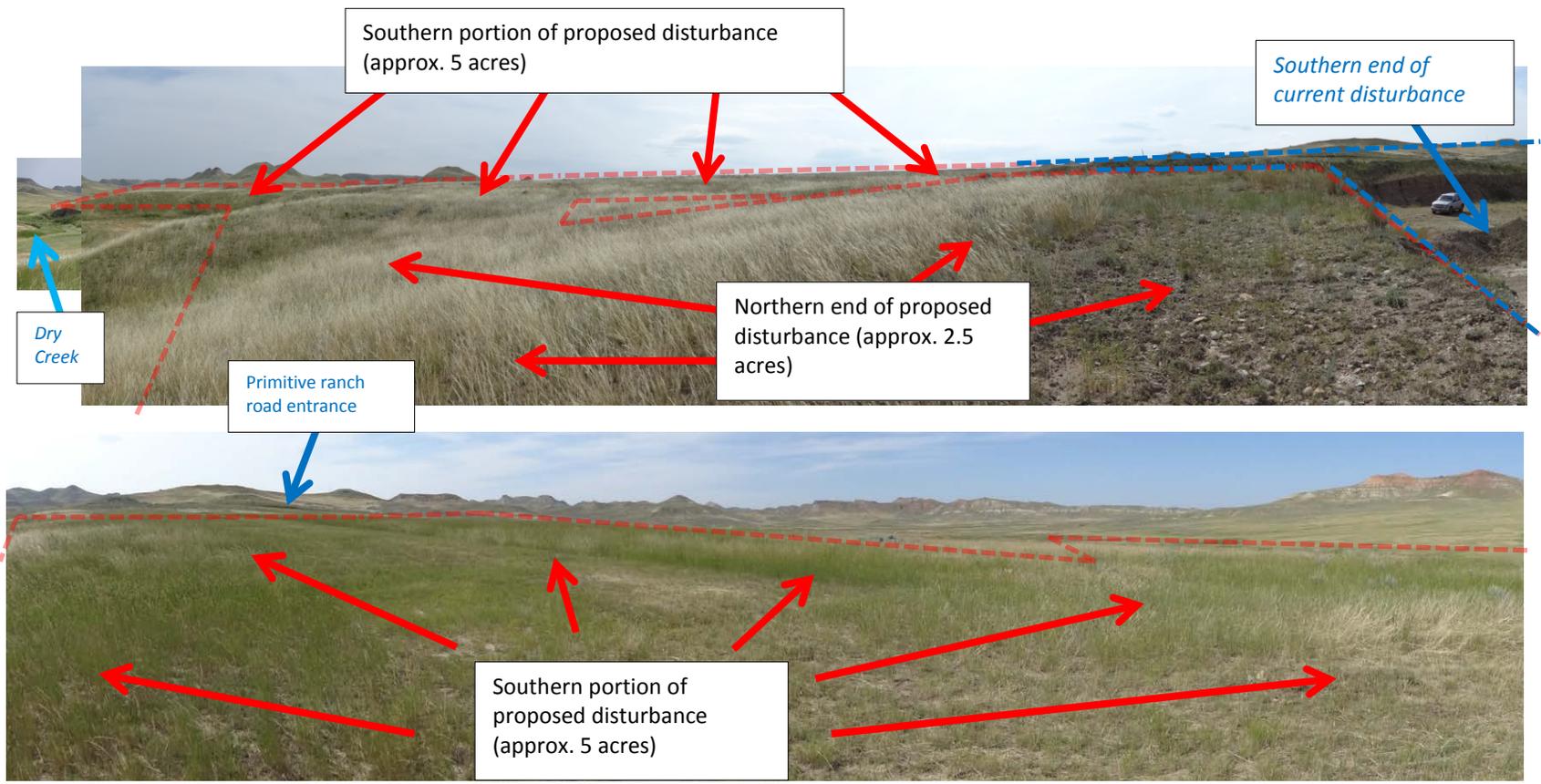


Table 2. Summary of Special Status (Sensitive) Species, Habitat, and Potential Effects from the Proposed Project in the Analysis Area.

| Common Name (scientific name) | Habitat | Presence | Project Effects | Rationale |
|---|--|----------|--------------------|---|
| <i>Threatened</i> | | | | |
| Ute ladies'-tresses orchid | Riparian areas with permanent water. | NP | NE | No riparian habitat present. |
| <i>Proposed</i> | | | | |
| Northern Long-eared Bat | Conifer and deciduous forest, caves and mines. | NP | NE | The project area is outside the species' range, and the species is not expected to occur. Only known to occur in extreme Northeast WY (mainly Crook and Weston counties, very limited in northern Campbell county). |
| <p>Presence: K - Known, documented observation within project area. S - Habitat suitable and species suspected, to occur within the project area. NS - Habitat suitable but species is not suspected to occur within the project area. NP - Habitat not present and species unlikely to occur within the project area.</p> <p>Project Effects: LAA - Likely to adversely affect. NE - No Effect. NLAA - May Affect, not likely to adversely affect individuals or habitat. NLJ - Not likely to jeopardize the continued existence of the species. MIH - May impact individuals and habitat. NP - Habitat not present and species unlikely to occur within the project area.</p> | | | | |

| Common Name (scientific name) | Habitat | Presence | Project Effects | Rationale |
|--|--|----------|--------------------|---|
| <i>Amphibians</i> | | | | |
| Northern leopard frog (<i>Rana pipiens</i>) | Beaver ponds and cattail marshes from plains to montane zones. | NP | NI | Habitat not present. |
| Columbia spotted frog (<i>Ranus pretiosa</i>) | Ponds, sloughs, small streams, and cattails in foothills and montane zones. Confined to headwaters of the S Tongue River drainage and tributaries. | NP | NI | The project area is outside the species' range, and the species is not expected to occur. |
| <i>Fish</i> | | | | |

| Common Name (scientific name) | Habitat | Presence | Project Effects | Rationale |
|--|---|----------|--------------------|--|
| Yellowstone cutthroat trout (<i>Oncorhynchus clarki bouvieri</i>) | Cold-water rivers, creeks, beaver ponds, and large lakes in the Upper Tongue River sub-watershed. | NP | NI | The project area is outside the species' range, and the species is not expected to occur. |
| <i>Birds</i> | | | | |
| Plains Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>) | Savannah style prairie with grasses dominant and shrub patches mixed throughout, with minimal patches of trees. Selection of these specific habitats depends on the quality of habitat available to grouse. | S | MIIH | May be impacted by dust, noise, human activities. |
| Baird's sparrow (<i>Ammodramus bairdii</i>) | Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields; grazed pastures; dry lakebeds; and other sparse, bare, dry ground. | NS | NI | Habitat not present. |
| Bald eagle (<i>Haliaeetus leucocephalus</i>) | Mature forest cover often within one mile of large water body with reliable prey source nearby. | NP | NI | Nesting and winter roosting habitat is not present. May avoid foraging habitats impacted by dust, noise, or human activities. |
| Brewer's sparrow (<i>Spizella breweri</i>) | Sagebrush shrubland. | NS | NI | No sagebrush will be impacted. |
| Ferruginous hawk (<i>Buteo regalis</i>) | Basin-prairie shrub, grasslands, rock outcrops. | S | MIIH | May be impacted by dust, noise, human activities. |
| Greater Sage-grouse (<i>Centrocercus urophasianus</i>) | Basin-prairie shrub, mountain-foothill shrub. | K | MIIH | In Buffalo Core Area. DDCT completed, consultation with WGFD completed. Reviewed Required Design Features and applied appropriately? [X] yes |
| Loggerhead shrike (<i>Lanius ludovicianus</i>) | Basin-prairie shrub, mountain-foothill shrub. | NS | NI | Some habitat present adjacent to project location. |
| Long-billed curlew (<i>Numenius americanus</i>) | Grasslands, plains, foothills, wet meadows. | NS | NI | Migrants may avoid the area. |
| Mountain Plover | Short-grass prairie with slopes < 5%. | NP | NI | Habitat not present. |

| Common Name (scientific name) | Habitat | Presence | Project Effects | Rationale |
|--|---|----------|--------------------|---|
| Northern goshawk (<i>Accipiter gentilis</i>) | Conifer and deciduous forests. | NP | NI | Habitat not present. |
| Peregrine falcon (<i>Falco peregrinus</i>) | Cliffs. | NP | NI | Habitat not present. |
| Sage sparrow (<i>Amphispiza billneata</i>) | Basin-prairie shrub, mountain-foothill shrub. | NS | NI | Sagebrush will not be impacted. |
| Sage thrasher (<i>Oreoscoptes montanus</i>) | Basin-prairie shrub, mountain-foothill shrub. | NS | NI | Project in grass stand predominated by crested wheatgrass. |
| Trumpeter swan (<i>Cygnus buccinator</i>) | Lakes, ponds, rivers. | NP | NI | Habitat not present. |
| Western Burrowing owl (<i>Athene cunicularia</i>) | Grasslands, basin-prairie shrub. | NP | NI | No prairie dogs or burrows at location. |
| White-faced ibis (<i>Plegadis chihi</i>) | Marshes, wet meadows. | NP | NI | Habitat not present. |
| Yellow-billed cuckoo (<i>Coccyzus americanus</i>) | Open woodlands, streamside willow and alder groves. | NP | NI | Habitat not present. |
| Mammals | | | | |
| Black-tailed prairie dog (<i>Cynomys ludovicianus</i>) | Prairie habitats with deep, firm soils and slopes less than 10 degrees. | NP | NI | Habitat not present. |
| Fringed myotis (<i>Myotis thysanodes</i>) | Conifer forests, woodland chaparral, caves and mines. | NP | NI | Habitat not present. |
| Long-eared myotis (<i>Myotis evotis</i>) | Conifer and deciduous forest, caves and mines. | NP | NI | Habitat not present. |
| Swift fox (<i>Vulpes velox</i>) | Grasslands. | S | NI | No dens are present at project location. |
| Townsend's big-eared bat (<i>Corynorhinus townsendii</i>) | Caves and mines. | NP | NI | Habitat not present. |
| <i>Big Game</i> | Basin-prairie, mountain-foothill, woodlands, and riparian habitats. | K | MIIIH | Not a designated parturition area or critical seasonal area. Foraging individuals within seasonal habitats may be impacted by dust, noise, human activities, or habitat loss. |
| Plants | | | | |

| Common Name (scientific name) | Habitat | Presence | Project Effects | Rationale |
|--|--|----------|--------------------|---|
| Limber Pine (<i>Pinus flexilis</i>) | Mountains, associated with high elevation conifer species. | NP | NI | Habitat not present. |
| Porter's sagebrush (<i>Artemisia porteri</i>) | Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5300-6500 ft. | NP | NI | Habitat not present. |
| William's wafer parsnip (<i>Cymopterus williamsii</i>) | Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft. | NP | NI | Project area outside of species' range. |
| <p>Presence: K - Known, documented observation within project area. S - Habitat suitable and species suspected, to occur within the project area. NS - Habitat suitable but species is not suspected to occur within the project area. NP - Habitat not present and species unlikely to occur within the project area.</p> <p>Project Effects: NI - No Impact. MIH - May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal listing or a loss of viability to the population or species. WIPV - Will Impact Individuals or Habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species. BI - Beneficial Impact.</p> | | | | |

APPENDIX A. WGFD initial letter of recommendations to BLM regarding Stinson’s proposed Hepp Sand/Gravel Mine as based on the DDCT analysis results.



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4699

wgfd.wyo.gov

GOVERNOR
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September 29, 2014

WER 50019
Bureau of Land Management
Buffalo Field Office
Governor’s Sage Grouse Executive Order 2011-5
2014 Density Disturbance Calculation Tool Analysis
Hepp Gravel Pit
Stinson Construction, LLC
Johnson County

Donald Brewer
Bureau of Land Management
Buffalo Field Office
1425 Fort Street
Buffalo, WY 82834-2436

Dear Mr. Brewer:

The staff of the Wyoming Game and Fish Department (WGFD) has reviewed the Governor’s Sage Grouse Executive Order 2011-5, Density Disturbance Calculation Tool (DDCT) Analysis for the Stinson Construction LLC’s proposed Hepp Gravel Pit project in Johnson County. We offer the following comments for your consideration.

DDCT Review

The proposed project is located in the Buffalo sage-grouse core area as defined by the State of Wyoming Greater Sage-Grouse Core Area Protection Executive Order 2011-5. The project includes renewal of an existing gravel pit and a 5-acre expansion on private surface and BLM mineral.

The DDCT process was conducted per Executive Order 2011-5. The DDCT process was completed by the BLM Buffalo Field Office on behalf of the proponent using the web application and reviewed by the WGFD. DDCT results are as follows:

- **Disturbance = 6.77%**
- Density = 0.21/640

The disturbance calculation exceeds the Executive Order 2011-5 disturbance threshold (5%). The DDCT area encompasses two large wildfire burn areas accounting for the majority of the

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disturbance. The WGFD and BLM met on site to evaluate the project and its potential impacts to sage-grouse:

- Minerals in the existing gravel pit (8-9 acres) are exhausted and the permit associated with this acreage could be renewed without further negative impact to sage-grouse.
- The 5-acre expansion area contains a mixed grass community, including crested wheatgrass and very little sagebrush.
- Habitat surrounding the existing pit and expansion area within 0.6mi are considered suitable sage-grouse habitat.

Renewal of the existing permit is at the discretion of the BLM. There are no concerns with the renewal of the existing permit because it is an existing activity and the extraction of gravel has likely been exhausted.

Issuance of a new permit for a 5-acre expansion is at the discretion of the BLM. The proponent must also submit an application for a Limited Mining Operation (LMO) to the Wyoming Department of Environmental Quality – Land Quality Division (DEQ-LQD); although because the project is an LMO, the DEQ-LQD provides an approval letter, but not a permit. Permitting/approval of an additional 5 acres of disturbance in this area is a concern given the overall amount disturbance as indicated by the DDCT.

In response to the disturbance calculation exceedance and our subsequent site visit to consider the project and potential impacts, we recommend the following conditions are attached to the 5-acre expansion permit (BLM) and LMO approval (DEQ-LQD) as mitigation:

The proponent (Stinson Construction, LLC) works with the landowner to develop a reclamation plan that is in accordance with reclamation guidelines in Executive Order 2011-5 (below) to reclaim the disturbance footprint of the existing gravel pit. In addition to a seed mix, the plan should include an implementation timeline. The same reclamation plan should be carried over to any additional surface that is disturbed as a result of expansion.

Reclamation should re-establish native grasses, forbs and shrubs during interim and final reclamation to achieve cover, species composition, and life form diversity commensurate with the surrounding plant community or desired ecological condition to benefit sage-grouse and replace or enhance sage-grouse habitat to the degree that environmental conditions allow. Seed mixes should include two native forbs and two native grasses with at least one bunchgrass species. Where sagebrush establishment is prescribed, establishment is defined as meeting the standard prescribed in the individual reclamation plan. Landowners should be consulted on desired plant mix on

private lands. The operator is required to control noxious and invasive weed species, including cheatgrass.

If agreement between the proponent and the landowner can be reached on a reclamation plan that meets the guidelines of Executive Order 2011-5 and the plan is implemented accordingly, we believe the proposed 5-acre expansion can move forward without further negative impact to sage-grouse. However, if the above described reclamation plan is not developed and agreed upon by the proponent and the landowner and will not be implemented, then, in accordance with Sage-Grouse Implementation Team (SGIT) guidance, we recommend the BLM permit is denied.

Stipulations for Development

In addition to meeting Executive Order disturbance/density guidelines, all stipulations for development outlined in Attachment B of the Executive Order should be applied by the proponent to the proposed project and, if possible, included in the conditions of the associated permit(s) by the permitting agency or agencies. These include general stipulations on surface disturbance, surface occupancy, seasonal use, transportation, overhead lines, noise, vegetation removal, sagebrush treatment, monitoring/adaptive response, and reclamation, and specific stipulations pertaining to oil and gas, mining, and connectivity area. These also include specific stipulations for connectivity. The following are areas where the submitted *Sage-Grouse Executive Order 2011-5 Worksheet* indicates implementation of the proposed project may deviate or not comply with Attachment B stipulations for development, and our subsequent recommendations:

Seasonal Use. We support the BLM's application of March 15 – June 30 timing stipulations to new surface disturbance.

Transportation. The main road associated with the proposed project is a county road within 1.9mi an occupied lek if headed south, and within 1.9mi of multiple occupied leks if headed north. See noise recommendations below.

Noise. We support the BLM's application of March 1 – May 15 6pm to 8am noise stipulations to crushing and hauling.

Reclamation. It should be noted the Hepp gravel pit is on private surface. Recommendations pertaining to reclamation are described above.

Donald Brewer
September 29, 2014
Page 4 of 4 - WER 50019

Thank you for the opportunity to comment. If you have any questions or concerns, please contact Amanda Withroder, Staff Biologist, at (307) 473-3436.

Sincerely,


John Kennedy
Deputy Director

JK/mf/gb

Enclosures

- 1) Sage-Grouse Executive Order 2011-5 Worksheet
- 2) Final Results

cc: USFWS
Tim Thomas, WGFD, Sheridan Region
Lynn Jahnke, WGFD, Sheridan Region
Jamie Jakes, Wyoming DEQ-LQD, Sheridan
Chris Wichmann, Wyoming Department of Agriculture, Cheyenne
Nicholas Graf, WyGISC

APPENDIX B. WGFD final letter of recommendations to BLM regarding Stinson’s proposed Hepp Sand/Gravel Mine.



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4699

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GOVERNOR
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CHARLES PRICE – President
T. CARRIE LITTLE– Vice President
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PATRICK CRANK
KEITH CULVER
RICHARD KLOUDA
DAVID RAEI

July 24, 2015

WER 50019.00a
Governor’s Sage Grouse Executive Order 2011-5
2014 Density Disturbance Calculation Tool Analysis
Bureau of Land Management
Buffalo Field Office
Stinson Construction, LLC
Hepp Gravel Pit
Johnson County

Donald Brewer
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Buffalo Field Office
1425 Fort Street
Buffalo, WY 82834-2436

Dear Mr. Brewer:

The staff of the Wyoming Game and Fish Department has reviewed Stinson Construction LLC’s proposed Hepp Gravel Pit project in Johnson County for compliance with the Governor’s Sage Grouse Executive Order 2011-5 (SGEO). We offer the following comments for your consideration.

We previously reviewed this DDCT in September 2014 and advised the proponent to develop a reclamation plan that complies with the SGEO as a condition of permitting. Accordingly, the proponent has worked with the landowner on a seed mix with grass, forb, and sagebrush components, which will help return the existing mine disturbance and future mine expansion to suitable habitat upon the completion of mining operations. If this reclamation plan and the previously recommended stipulations on seasonal use, transportation, and noise are included in the conditions of the permit, then we have no additional concerns with the proposed project moving forward in core area.

"Conserving Wildlife - Serving People"

Donald Brewer
July 24, 2015
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Thank you for the opportunity to comment. If you have any questions or concerns, please contact Amanda Withroder, Staff Biologist, at (307) 473-3436.

Sincerely,


for John Kennedy
Deputy Director

JK/mf/ns

cc: USFWS
Tim Thomas, WGFD, Sheridan Region
Lynn Jahnke, WGFD, Sheridan Region
Jaime Jakes, Wyoming DEQ-LQD, Sheridan
Chris Wichmann, Wyoming Department of Agriculture, Cheyenne

APPENDIX C. RECLAMATION REQUIREMENTS, WYOMING BLM (IM WY-2012-032).

The following Reclamation Requirements apply to all surface disturbing activities, including BLM initiated activities, and must be addressed in each reclamation plan. These requirements also must be met prior to release of the bond and/or the reclamation liability. Where these Reclamation Requirements differ from other applicable federal, laws, rules, and regulations, those requirements supersede this policy. State and/or local statutes or regulations may also apply.

1. Manage all waste materials:

- a. Segregate, treat, and/or bio-remediate contaminated soil material.
- b. Bury only authorized waste materials on site. Buried material must be covered with a minimum of three feet of suitable material or meet other program standards.
- c. Ensure all waste materials moved off-site are transported to an authorized disposal facility.

2. Ensure subsurface integrity, and eliminate sources of ground and surface water contamination:

- a. Properly plug all drill holes and other subsurface openings (mine shafts, adits, etc.).
- b. Stabilize, properly back fill, cap, and/or restrict from entry all open shafts, underground workings, and other openings.
- c. Control sources of contamination and implement best management practices to protect surface and ground water quality.

3. Re-establish slope stability, surface stability, and desired topographic diversity:

- a. Reconstruct the landscape to the approximate original contour or consistent with the land use plan.
- b. Maximize geomorphic stability and topographic diversity of the reclaimed topography.
- c. Eliminate highwalls, cut slopes, and/or topographic depressions on site, unless otherwise approved.
- d. Minimize sheet and rill erosion on/or adjacent to the reclaimed area. There shall be no evidence of mass wasting, head cutting, large rills or gullies, down cutting in drainages, or overall slope instability on/or adjacent to the reclaimed area.

4. Reconstruct and stabilize water courses and drainage features:

- a. Reconstruct drainage basins and reclaim impoundments to maintain the drainage pattern, profile, and dimension to approximate the natural features found in nearby naturally functioning basins.
- b. Reconstruct and stabilize stream channels, drainages, and impoundments to exhibit similar hydrologic characteristics found in stable naturally functioning systems.

5. Maintain the biological, chemical, and physical integrity of the topsoil and subsoil (where appropriate):

- a. Identify, delineate, and segregate all salvaged topsoil and subsoil based on a site specific soil evaluation, including depth, chemical, and physical characteristics.
- b. Protect all stored soil material from erosion, degradation, and contamination.
- c. Incorporate stored soil material into the disturbed landscape.
- d. Seed soils to be stored beyond one growing season, with desired vegetation (such as native or sterile non-native species).
- e. Identify stockpiles with appropriate signage.

6. Prepare site for re-vegetation:

- a. Redistribute soil materials in a manner similar to the original vertical profile.
- b. Reduce compaction to an appropriate depth (generally below the root zone) prior to redistribution of topsoil, to accommodate desired plant species.
- c. Provide suitable surface and subsurface physical, chemical, and biological properties to support the long term establishment and viability of the desired plant community.
- d. Protect seed and seedling establishment (e.g. erosion control matting, mulching, hydro-seeding, surface roughening, fencing, etc.)

7. Establish a desired self-perpetuating native plant community:

- a. Establish species composition, diversity, structure, and total ground cover appropriate for the desired plant community.
- b. Enhance critical resource values (e.g. wildlife, range, recreation, biodiversity, etc.), where appropriate, by augmenting or accelerating restoration of plant community composition, diversity, and/or structure.
- c. Select genetically appropriate and locally adapted native plant materials (e.g., locally sourced or cultivars recommended for seed zone) based on the site characteristics and ecological setting.
- d. Use locally sourced and/or collected seeds to the extent possible (local collection and logistics should be included in the Reclamation Plan).
- e. Select non-native plants only as an approved short term and non-persistent (e.g., sterile) alternative to native plant materials. Ensure the non-natives will not hybridize, displace, or offer long-term competition to the endemic plants, and are designed to aid in the re-establishment of native plant communities.

8. Reestablish a complementary visual composition:

- a. Ensure the reclaimed landscape features blend into the adjacent area and conform to the land use plan decisions.
- b. Ensure the reclaimed landscape does not result in a long term change to the scenic quality of the area.

9. Manage Invasive Plants:

- a. Assess for invasive plants before initiating surface disturbing activities.
- b. Develop an invasive plant management plan.
- c. Control invasive plants utilizing an integrated pest management approach.
- d. Monitor invasive plant treatments.

10. Develop and implement a reclamation monitoring and reporting strategy:

- a. Conduct compliance and effectiveness monitoring in accordance with a BLM (or other surface management agency) approved monitoring protocol.
- b. Evaluate monitoring data for compliance with the reclamation plan.
- c. Document and report monitoring data and recommend revised reclamation strategies.
- d. Implement revised reclamation strategies as needed.
- e. Repeat the process of monitoring, evaluating, documenting/reporting, and implementing, until reclamation goals are achieved.