FINAL ENVIRONMENTAL ASSESSMENT

RED ROCK BIOFUELS, LLC
WOODY BIOMASS BIOREFINERY CAPABILITY DEVELOPMENT IN LAKE COUNTY, OREGON



EXECUTED FOR:

DEPARTMENT OF DEFENSE TITLE III PROGRAM,
WRIGHT-PATTERSON AFB OH 45433

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EXECUTIVE SUMMARY

INTRODUCTION

The purpose of the Advanced Drop-In Biofuel Production Project (ADBPP) Environmental Assessment (EA) is to assess the environmental impact of a proposed federal action to support the design, construction and/or retrofit, validation, qualification and operation of a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE) capability. Specific to the project, no federally designated tribal lands are affected by this effort.

Advanced drop-in biofuels can be produced from a wide range of renewable biomass feedstocks. Solid feedstocks such as wood can be converted into biofuels via different conversion technologies. Once the biomass is broken down, it must be reformed into fuel molecules. The ADBPP Program intends to establish commercial-scale manufacture and supply of drop-in replacement biofuels for aviation and marine diesel applications. The Department of Defense (DoD) has indicated it intends to purchase drop-in replacement biofuels for component services requirements.

Suitable biofuels shall meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, be a "drop in fuel" that can utilize existing infrastructure, and be deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts JP-5, JP-8 or F-76. This proposed action includes the design, construction and/or retrofit, validation, qualification, and operation of a domestic commercial-scale IBPE that meets a requirement of at least 10 million gallons (MMgal) per year neat biofuel production capacity.

The Department of the Navy (DON), the Department of Energy (DOE), and the Department of Agriculture (USDA) signed a Memorandum of Understanding (MOU) in 2011 after President Obama directed them to work with private industry to achieve the necessary production capacity required for a robust domestic advanced drop-in biofuels industry. These organizations developed a strategy to make targeted investments by offering production support funding to construct or retrofit multiple domestic advanced drop-in biofuel plants and refineries (commercial or pre-commercial scale). The ultimate goal of this effort is to power DoD and private sector transportation as well as achieve long-term energy security.

This project is being executed under Defense Production Act Title III authority of which the Air Force serves as the Executive Agent. The Defense Production Act (DPA) (50 US Code [USC] App. §2601 et al.) Title III Program is managed by the Office of the Secretary of Defense and executed by the DoD Executive Agent Program Office, a component of the Manufacturing and Industrial Technologies Division (AFRL/RXM) of the Materials and Manufacturing Directorate, Air Force Research Laboratory. As the Executive Agent for DoD's DPA Title III Program, AFRL/RXM is responsible for executing programs that ensure domestic production capability for technology items that are essential to national defense.

DESCRIPTION OF THE PROPOSED ACTION

Red Rock Biofuels LLC (Red Rock) proposes to construct a new biofuels facility and associated infrastructure to produce jet fuel, diesel fuel, and naphtha (a gasoline blendstock) from a woody biomass feedstock consisting primarily of mill and forest residues. Annually, the plant would gasify up to approximately 170,000 bone dry tons per year of feedstock (331,818 tons, wet) to produce approximately 7.2 MMgal jet fuel, 7.2 MMgal diesel fuel, and 3.6 MMgal naphtha.

The proposed facility would have an approximate 54-acre footprint. The facility footprint and associated components would be identical for two site options; however, the layout varies slightly on the Alternative Site. There is potential for adverse effects to historical and cultural resources, and mitigation is addressed in the project's National Historic Preservation Act (NHPA) Section 106 Memorandum of Agreement (MOA), see Appendix B.

- A receiving facility for truck delivered woody biomass;
- A biomass handling, processing, and storage area with capacity for up to 30 days of operation;
- Approximately 3 acres devoted to the core processing plant and an administration and maintenance building with various facility components ranging from 30 to 100 feet in height;
- A half-acre tank farm with up to nine tanks;
- Employee and visitor parking lots that can accommodate approximately 31 employees, of which approximately 15 would be on shift during the weekday;
- A north-south site access road connecting to Kadrmas Road and secondary roads within the site boundary;
- An approximately 600-square-foot water pump house, an approximately 50-foot-diameter fire water tank, and an associated buried water utility; and
- A stormwater retention pond.

A 0.36-mile-long rail spur would be constructed off of the Lake County Railroad to transport finished fuel products to market. Loading zones positioned for loading railcars would also be developed. In addition, a natural gas pipeline lateral would be extended from the Ruby Pipeline approximately 3 miles south of the Preferred Site and approximately 3.5 miles south of the Alternative Site within the right-of-way for the railroad. The project would also include an amendment to the Town of Lakeview's urban growth boundary.

ALTERNATIVES

Site Options

Red Rock has developed two site options for the location of the proposed biofuels facility:

- An 87.7-acre parcel of private land in Lake County, Oregon, immediately south of the Lakeview town boundary (referred to as the Preferred Site).

- A 169.1-acre parcel of private land in Lake County, Oregon west of the southern Lakeview town boundary (referred to as the Alternative Site).

No-Action Alternative

Under the no-action alternative, the government would not provide federal funding to investigate or develop the proposed biofuel production capability on either site. The Council on Environmental Quality's (CEQ) implementing regulations for the National Environmental Policy Act (NEPA) require the no-action alternative be considered to assess potential environmental consequences if the proposed action were not implemented.

ANTICIPATED ENVIRONMENTAL IMPACTS

The environmental impacts of the proposed action are summarized in the following table comparing the Preferred and Alternative Sites. As documented in Figure 2.1, the sites lie within a half mile of each other. Due to the close proximity to each other, most natural and cultural resource impacts are common to both sites. To reduce duplication, the impacts are fully addressed under the Preferred Site. For resources that may have significantly different impacts between the two sites, a more detailed analysis will be found in the Alternative Site column, and in the analysis contained in Chapter 3.

The document addresses the following resource environmental analysis topics: Air (Section 3.1), Water (Section 3.2), Biological (Section 3.3), Cultural (Section 3.4), Land Use (Section 3.5), Geological & Soils (Section 3.6), Noise (Section 3.7), Hazardous Materials & Wastes (Section 3.8), Utilities & Infrastructure (section 3.9), Socioeconomic & Environmental Justice (Section 3.10), Cumulative (Section 3.11) and Irreversible & Irretrievable Impacts (Section 3.12).

Resource Topic/EA Paragraph	Preferred Site	Alternative Site
Air Quality, Meteorology and Climate Change/ 3.1	The proposed action would produce air pollutant emissions during both the construction phase and the operational phase. Construction of the associated facility would result in intermittent and temporary fugitive emissions, including dust from soil disruption and combustion emissions from the construction equipment. Following completion of construction, air quality would transition to operational-phase emissions after commissioning and initial startup of the facility.	Air quality impacts would be the same at either site option chosen.
Water Resources/ 3.2	Potential direct and indirect impacts on groundwater quality would be unlikely as Red Rock would manage hazardous or toxic wastes (such as fuel or lubricating oil) in accordance with applicable regulations such as spill prevention and mitigation measures. Neither site option overlies a groundwater recharge zone of special significance, thus in the unlikely event of infiltration of a pollutant, the impact would be negligible given the relatively small footprint of the facility. Additionally, construction and operation of the proposed pipeline lateral would not impact infiltration to groundwater. The proposed pipeline lateral would transport natural gas, therefore no significant impacts on groundwater would occur in the event of a pipeline leak. Accidental spills or leaks of hazardous materials associated with vehicle fueling, vehicle maintenance, and material storage typically present the greatest potential contamination threat to groundwater resources. The Preferred Site does not have surface water features onsite and and there is no connectivity to surface water features in the vicinity of the site. Storm water and runoff from the site would be managed by the retention pond. Source water for facility operations would not be appropriated from surface waters, rather drawn from the municipal water supply. Process waters would not be discharged directly into surface waters, instead would be treated at the municipal wastewater treatment plant. Because surface waters do not exist on the site nor are there surface waters close to the Preferred Site, impacts on surface water quality would be unlikely and negligible. The Preferred Site is partially within a Federal Emergency Management Agency (FEMA) designated Special Flood Hazard Area – High Risk, specifically within Zone AE. Local and state conditions and permits would be obtained prior to construction.	Runoff from normal storm water events would not have an impact on nearby surface waters. Storm water runoff from the Alternative Site could have a minor impact on nearby surface waters, including Thomas Creek, by way of infiltration into nearby wetlands if the storm water event exceeded the design capacity of the retention pond. The Alternative Site is completely within a FEMA designated Special Flood Hazard Area – High Risk, specifically within Zone AE.
Biological Resources/ 3.3	The primary direct impact from lateral pipeline construction would be the cutting, clearing and removal of existing vegetation within the existing railroad right-of-way. The construction of the lateral pipeline would disturb approximately 17 acres of vegetation within the 100-foot railroad right-of-way. Disturbed areas within the site that are not developed would be re-vegetated following construction activities. Impacts on vegetation from the proposed construction activities would be temporary and minor to negligible because grassland community habitats would be allowed to regenerate and revert to preconstruction conditions; however, 54 acres of existing vegetation would be permanently removed for operation of the facilities. Impacts on wildlife would be temporary and negligible to minor because most wildlife species would be able to avoid the construction disturbance associated with the proposed action by relocating to adjacent undisturbed areas. Earth-moving activities could result in mortality to individual burrowing and less mobile species during construction and during the transport of renewable biomass. While permanent, the affect on wildlife from mortality would be negligible. Impacts on wetlands would be avoided by the major facility components within the 54-acre footprint. Minor, temporary construction impacts on wetlands would occur along the proposed pipeline lateral corridor. Minor impacts on wetlands would occur where the rail spur is located as it results in the permanent loss of less than 0.5 acre of waters of the United States for installation of the proposed rail spur.	Environmental impacts would be similar to the Preferred Site except construction of the lateral pipeline would disturb approximately 22 acres of vegetation within the 100-foot railroad right-of-way.

Resource Topic/ EA paragraph	Preferred Site	Alternative Site
Cultural Resources/ 3.4	To ensure the Air Force's responsibilities under the National Historic Preservation Act (NHPA) and its implementing regulations are met, a Memorandum of Agreement (MOA) has been established by the Air Force, in consultation with the Oregon State Historic Preservation Office (SHPO), to mitigate adverse impacts on historic properties consistent with the NHPA section 106 compliance process. See Appendix B. Under the terms of the MOA and prior to final approval and construction, the affected areas would be excluded from the facility footprint or a mitigation plan would be developed in consultation with the SHPO and/or the tribes. With the understanding that the preceding steps would be taken, the proposed action would have no adverse effect on historic properties as defined under 36 CFR 800.16(i). Construction of the proposed facility and associated utilities would include clearing and removal of existing vegetation, grading, and excavations for utilities, foundations, and storm water ponds within the construction workspace. Construction activities have the potential to disturb identified surface and subsurface cultural deposits that could result in an adverse effect to historic properties. Approximately 84% of the facility footprint and 100% of the proposed pipeline has been surveyed for historic properties. The remaining areas would be surveyed prior to ground disturbing activities. The above-ground inventory identified 11 resources within a 1-mile radius of Preferred Site that are recommended eligible for listing in the National Register of Historic Places (NRHP). Of these, HR-1 would incur direct and indirect impacts as a result of the proposed action and the remaining 10 properties (HR-2 to HR-11) would incur indirect impacts; however, these impacts would not be adverse. The archaeological inventory identified four new archaeological sites and six new archaeological isolates, in addition to conducting NRHP evaluation testing on four previously identified sites and one isolated find within the facility footprint and proposed pipeline. The six isolates and two sites are recommended not eligible for listing in the NRHP; however, four previously identified and two newly identified archaeological sites are eligible or have been recommend eligible for listing in the NRHP. Treatment plans would be developed to mitigate these sites if they cannot be avoided. An abandoned railroad berm and two archaeological sites also are located within Preferred Site; however; these sites would not be affected. Six archaeological sites cannot be avoided, and are addressed by the MOA for mitigation purposes. NHRP-eligible archaeological sites are 35LK3991, 35LK3992, 35LK3994/3995, 35LK4694, and unevaluated archaeological sites 35LK4696 and 35LK4697 which cannot be avoided within the facility footprint and associated pipeline and will be treated as eligible. Red Rock would avoid the abandoned rail spur as well as archaeological sites, 35LK3993 and 35LK3156, in the southern portion of the Preferred Site will not be affected by the pipeline construction workspace.	The NHPA MOA covers potential development on this site (Append1x B).
Land Use/3.5	Impacts on land use from the proposed Action would be temporary and minor to negligible as both sites are located near existing industrial uses. The proposad biofuels facility would be compatible with and not interfere with existing nearby land uses including the nearby concrete mixing plant, construction storage yard, landfill, and sewage disposal ponds. Disturbance for construction of the proposed pipeline lateral would be temporary and minor, and, with the exception of forested areas, existing land use would not be permanently altered during pipeline operation. The proposed facilities and pipeline lateral would comply with all county zoning ordinances. There would be a permanent but minor impact on the aesthetics of Lakeview at the southern edge of town. There would be no impacts on aesthetics along the proposed pipeline lateral route or rail spur.	Environmental impacts would be the same at either site option chosen.

Resource Topic/ EA paragraph	Preferred Site	Alternative Site
Geological Resources and Soils/ 3.6	Adverse impacts on geological resources from construction and operation of the facility are unlikely because the Preferred Site does not overlie any known geologic resources of economic value. Earthquakes and flooding are the geo-hazards to which the sites would be most susceptible. Engineering design that accounts for these potential hazards offers the most effective means to mitigate the potential impact. Both sites are composed of soils classified as farmland of statewide importance, prime farmland if irrigated, and prime farmland if irrigated and drained. Construction of the facility at the Preferred Site would permanently impact approximately 54 acres, eliminating the possibility of using the land for rangeland or agricultural purposes. However, development of the proposed facility would have a negligible impact on soils and agricultural or rangeland production in the region. The proposed pipeline lateral would be approximately 3 miles long and would be located within the existing Lake County Railroad right-of-way. The Southernmost section will transverse 400 feet of Approximately 17 acres within the 100-foot railroad right-of-way would be disturbed during construction. The remaining area used for construction would be restored to pre-construction conditions. Pipeline operation impacts on agriculture and rangeland would be minimal. The proposed pipeline's Southern terminus transverses approximately 4,000 feet of alluvial fan deposits.	The proposed pipeline lateral would be approximately 3.5 miles long and adjacent to the western edge of the Lake County Railroad right-of-way. Approximately 22 acres within the 100-foot railroad right-of-way would be disturbed during construction of the lateral pipeline. Pipeline operation impacts on agriculture and rangeland would be minimal.
Noise/ 3.7	Temporary and minor impacts on existing noise would result during construction as a result of the use of heavy construction equipment. During operations, increased traffic associated with transport of feedstock to the facility would result in overall minor impacts on the soundscape as the disruption would be intermittent and localized.	Noise impacts would be the same at either site option chosen.
Hazardous Materials and Waste Streams/ 3.7	Construction of the facility would not result in a significant increase of solid waste quantities that would require the Lake County Landfill to amend its existing licenses. During construction and operation, oils and lubricants would be managed in accordance with applicable regulations including spill prevention plans and mitigation measures.	Hazardous materials and waste stream impacts would be the same at either site option chosen.
Utilities and Infrastructure/ 3.8	The local electric and telecommunications utilities would experience a negligible impact on their systems aligned with reasonable increased demand associated with additional business consumers. The natural gas demand for the proposed action would not be expected to have more than a negligible impact on the supply of natural gas transported through the Ruby Pipeline. Impacts on U.S. Highway 395 would be negligible as the road is well- maintained through this industrial corridor by the state. The anticipated increased traffic by large haul trucks on Kadrmas Road daily could result in a short-term decrease in the condition of the current gravel roadbed during construction.	The anticipated increased traffic by large haul trucks on M Street could further degrade the condition of the roadbed.
Socioeconomic Resources/ 3.9	Construction and operation of the proposed biofuels facility and proposed pipeline lateral would have a negligible impact on the socioeconomic environment in Lake County. Construction of the proposed facility would result in a temporary increase in employment for the local workforce while a minor impact resulting from the creation of permanent jobs for the duration of facility operation would occur in Lakeview. It is unlikely the proposed action would have an increased demand on public and emergency services.	Socioeconomic impacts would be the same at either site option chosen.

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CHAPTER 1:
PURPOSE OF AND NEED FOR ACTION

In this chapter there are five parts which detail and document the proposed effort: the reason and background for the proposed federal action; purpose and scope of the federal government's decision in the proposed action; the proposed action's environmental review scope; the effort's public participation, coordination and regulatory permitting requirements; and document organization.

1.1 PROPOSED PROGRAM ACTION OVERVIEW

1.1.1 Purpose

Over the last twenty years, numerous federal actions were executed to reduce U.S. dependence on petroleum-based liquid fuels. Because military operations are highly dependent on access to liquid fuels, the Department of Defense (DoD) and military services have developed energy reduction directives, goals, and strategies to reduce their dependence on petroleum-based liquid fuels. Over the past decade, the military services have executed testing and evaluation programs to qualify non-petroleum liquid fuels for powering their critical weapon and transportation systems.

A robust advanced drop-in biofuels market is an essential element of our national energy security and requires unrestricted, uninterrupted access to affordable energy sources to power our economy and our military. Traditional fossil-fuel based petroleum is derived from crude oil that has increasingly challenging market and supply constraints. Chief among these is limited, unevenly distributed, and concentrated global sources of supply. America's growing dependence on foreign sources of crude oil undermines foreign policy objectives and comes at an ever increasing impact to the Nation's trade imbalance. In recent years, the cost of imported oil has exceeded $300 billion per year. Advanced biomass-derived transportation fuels that use a domestic, renewable feedstock provide a secure alternative that reduces the risks associated with petroleum dependence.

Enhanced reliability of fuel supplies through diversification to advanced drop-in biofuels is also essential to sustain the U.S. military's mission capabilities, which are at risk due to potential disruptions of crude oil supplies. Accordingly, the Department of the Navy has adopted a goal of, by 2020, replacing one-half of conventional petroleum-based fuel use with domestically sustainable fuel alternatives. Only a handful of production facilities for renewable jet fuel and diesel will operate in the foreseeable future. Current processes for producing advanced drop-in biofuels are expensive, and the resulting high cost of the end product continues to limit demand. Military and civilian end users of fuel have clear strategic incentives to adopt renewable drop-in fuels, but adoption is only possible when those fuels become cost-competitive.

Given the current economic environment, significant start-up risks, and competitive barriers posed by the firmly established crude oil markets, industry will not assume all of the uncertainty and risk associated with providing a commercially viable production capability for advanced drop-in

biofuels. Therefore, it is necessary the federal government cooperates with industry to create a strong demand signal and to make targeted investments to achieve the necessary production capacity required for a robust domestic advanced drop-in biofuels industry. Without these efforts, adequate production capability would not otherwise be established in a timely manner. The principal objective of this initiative is to incentivize the construction of a domestic commercial-scale advanced drop-in biofuel refinery with the capability to produce ready drop-in replacement advanced biofuels meeting military specifications in support of the Navy's strategic 2020 goals and the Nation's overall energy security needs.

1.1.2 Need

The Department of the Navy (DON), the Department of Energy (DOE), and the Department of Agriculture (USDA) signed a Memorandum of Understanding (MOU) in 2011 after President Obama directed them to work with industry and achieve the necessary production capacity required for a robust domestic advanced drop-in biofuels industry. These organizations developed a strategy to make targeted investments by offering production support funding to construct or retrofit multiple domestic advanced drop-in biofuel plants and refineries (commercial or pre-commercial scale). The ultimate goal of this effort is to power DoD and private sector transportation as well as achieve long-term energy security.

This project is being executed under Defense Production Act (DPA) Title III authority of which the Air Force serves as the Executive Agent. Program responsibility within the Air Force falls under the Manufacturing and Industrial Technologies Division of Air Force Research Laboratories (AFRL/RXM), who is responsible for executing programs that ensure domestic production capability for technology items that are essential to national defense.

The need for this action is to comply with Section 303(a)(5) of the DPA. On 8 January 2013 a Presidential Determination (PD) was signed establishing the Advanced Drop-In Biofuel Production Project (ADBPP). The PD asserted that the Department's reliance on "…crude oil derived fuels undermine foreign policy objectives and impact the Nation's trade imbalance" and that "…advanced biomass-derived transportation fuels that use a domestic, renewable feedstock provide a secure alternative that reduces the risks associated with dependence on petroleum sources." In response to the PD, the Title III program office set up and chaired a federal interagency advisory team to develop the requirements of the ADBPP Program.

Advanced drop-in biofuels can be produced from a wide range of renewable biomass feedstocks, such as, but not limited to: wood, agricultural crops and residues, municipal solid waste (MSW), and waste fats, and oils and greases. Solid feedstocks such as wood, MSW, or other plant materials can be converted into biofuels via different conversion technologies, generally broken down into thermochemical or biochemical technologies. Thermochemical technologies, most notably gasification and pyrolysis, use temperature and pressure to break down biomass, whereas biochemical technologies use biological enzymes. Once the biomass is broken down, it must be

reformed into fuel molecules, and this can occur via a Fischer-Tropsch or other catalytic reaction, or in some cases the fuel can be directly produced by a biological organism(s). Feedstocks in the liquid or grease form can be converted into fuel via a series of catalytic reactions, similar to petroleum refining operations.

The ADBPP Program intends to establish commercial-scale manufacture and supply of drop-in replacement biofuels for aviation and marine diesel applications. The DoD has indicated it intends to purchase drop-in replacement biofuels for component services requirements. Suitable biofuels shall meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, be a "drop in fuel" that can utilize existing infrastructure, and be deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts JP-5, JP-8 or F-76. This proposed action includes the design, construction and/or retrofit, validation, qualification and operation of a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE) that meets a requirement of at least 10 million gallons (MMgal) per year neat biofuel production capacity.

ADBPP offerors could employ various combinations of feedstocks and conversion technologies to produce drop-in replacement biofuels. Offerors could propose construction of new facilities or modifications to an existing facility, and could site the facility at any location determined to have appropriate access to the proposed feedstocks and other facility requirements.

In June 2012, a DoD DPA Funding Opportunity Announcement call for commercial offerors was released for Phase 1 proposals that addressed the government's stated ADBPP requirements:

1. Biofuel must be produced domestically.
2. Biofuel must comply with EISA Section 526.
3. Biofuel must come from an acceptable feedstock.
4. The biofuels must be drop-in replacement suitable for military operational use.
5. The IBPE must have a rated capacity at least 10 MMgal of net biofuel per year.
6. The contractor must commit to certain DoD DPA business requirements including cost share and construction contingency reserve requirements.

On or about 28 May and 21 June 2013, four offeror proposals were awarded Technology Investment Agreements (TIA) to execute ADBPP Phase 1. The TIA directs the contractor to conduct preliminary engineering of the IBPE facility and pursue site permits and environmental compliance, including the National Environmental Policy Act (NEPA). A planned Phase 2 would include the detailed engineering, construction and operation of the IBPE facility.

The Defense Logistics Agency (DLA) is designated as the DoD Executive Agent for bulk petroleum and fuels for the DoD. DLA executes and is responsible for supply chain management for all bulk petroleum and fuels owned by the DoD (including quality management). DLA-Energy develops standardized quality policy and procedures across the supply chain to reflect the various

DoD platform fuel systems requirements and maximize effectiveness and efficiency (see MIL-STD-3004D(1)). DLA-Energy is responsible for assuring fuels meet military speicifications.

1.2 DECISION TO BE MADE

This environmental assessment (EA) evaluates the potential environmental consequences involved with meeting the Department's goal in establishing a commercially viable biofuel production capability at a specific location. NEPA, through its implementing regulations, requires federal agencies to document, analyze, and review proposed actions and potential reasonable alternatives. These actions, their impacts on resources and corresponding risks are assessed and analyzed using established Air Force guidance.

1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

NEPA requires federal agencies to consider environmental consequences in their decision-making process. The *Environmental Impact Analysis Process* (EIAP) is accomplished through adherence to the procedures set forth in the Council of Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] §1500-1508), DoD Instruction 4715.9 *Environmental Planning and Analysis,* and 32 CFR §989 (Air Force Environmental Impact Analysis Process), 15 July 1999, as amended. These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

Through Intergovernmental and Interagency Coordination for Environmental Planning, requests have been made for information on planned actions in the surrounding community. If any concurrent actions are identified during the EA process, they will be examined in the context of potential cumulative impacts. A cumulative impact, as defined by the CEQ (40 CFR §1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

1.3.1 Resource Areas Addressed in Detail

All resource areas that could be affected by the proposed action or no-action alternative shall be reviewed and documented. The following list has been developed and determined to include all applicable areas requiring a comprehensive analysis of potential impacts. The intent of this EA is to meet the NEPA requirements established in 32 CFR §989. The following resource areas are discussed in detail in this EA:

- Air Quality & Meteorology
    - Attainment or maintenance area
    - Special construction & operational Clean Air Act (CAA) impacts/requirements
    - Specific air space requirement or restriction risks

  - Permitting type and risks
- Water Resources
  - Surface water quality
  - Groundwater quality
  - Floodplain
- Biological Resources
  - Vegetation
  - Wildlife
  - Wetlands
- Cultural Resources
  - Archaeological
  - Historical
  - Architectural
- Land Use Requirements/Restrictions
  - Visual impact
  - Zoning
  - Aesthetics
- Geological Resources and Soils
  - Topographical considerations
  - Minerals and energy resources impacted
- Noise
- Hazardous Materials and Waste Streams
- Utilities and Infrastructure Impacts
  - Sanitary sewer
  - Potable/process water
  - Solid waste
  - Drainage
  - Transportation
  - Production energy requirements
  - Safety and occupational health
- Socioeconomic Resources
  - Population
  - Economy
  - Housing

1.3.2 Resource Topics Eliminated from Detailed Analysis

NEPA regulations emphasize the importance of adjusting the scope of each EA to the particular needs of the project and its setting, and focusing on the specific potential impacts of the project. There is no need, according to the regulations, to include information on resources that would not

be affected by the project. The following impact topics were considered but dismissed from detailed analysis and are therefore not addressed further in this EA.

Odors

Oregon Administrative Rule (OAR) on nuisance (OAR 340-208-0100) addresses nuisance odors and is overseen by the Oregon Department of Environmental Quality (DEQ). This rule outlines factors for DEQ to consider when receiving a complaint on odors and determining if the nuisance exists. Construction of the proposed project would not result in any odors. During the operational phase, the woody biomass is expected to have minimal odor, which would not be detectable beyond the property. Therefore, this topic was dismissed from further analysis.

1.4 PUBLIC PARTICIPATION, COORDINATION AND REGULATORY PERMITTING REQUIREMENTS

This EA is part of the EIAP for the proposed project and was prepared in compliance with NEPA regulations. The following paragraphs describe the laws and regulations that apply or may apply to the proposed and alternative actions.

1.4.1 Interagency and Intergovernmental Coordination

Federal, state, and local agencies with jurisdiction that could be affected by the proposed or alternative actions have been notified and consulted.

1.4.2 Permits

The permits and approvals necessary from agencies and authorities for construction and operation of the Red Rock facility include:

US Army Corps of Engineers

Section 404 Clean Water Act Nationwide Permits #14 and #12, Linear Transportation Projects and Utility Line Activities, could be used to construct the proposed rail spur and natural gas pipeline lateral, respectively, because project activities would result in the loss of less than 0.5 acres of waters of the U.S.

Oregon Department of Environmental Quality

Stormwater Construction

A National Pollutant Discharge and Elimination System (NPDES) Stormwater Construction General Permit No. 1200-C would be required prior to the initiation of construction activities of the pipeline and the biofuels facility. The 1200-C permit regulates stormwater runoff from the facility construction, and an Erosion and Sediment Control Plan (ESCP) outlines the sediment and erosion control best management practices that would minimize potential impacts on surface waters.

Stormwater Industrial Discharge Permit
NPDES Stormwater Industrial General Permit would be required prior to the initiation of operations. The permit regulates stormwater runoff from the facility operation, and a stormwater pollution prevention plan outlines the sediment and erosion control best management practices that would minimize potential impacts on surface waters.

Standard Air Contaminant Discharge Permit
A Standard Air Contaminant Discharge Permit (ACDP) would be required prior to the initiation of construction activities. The ACDP would also function as the state (minor source) operating permit for the proposed biofuels facility. Red Rock received a final ACDP on June 24, 2015. Obtaining the ACDP satisfies the requirements for meeting the air quality goals for the Lakeview Airshed.

Section 401 Water Quality Certification
Section 401 of the Clean Water Act requires any federal license or permit to conduct an activity that may result in a discharge to waters of the U.S. must first receive a water quality certification (WQC) from the state in which the activity will occur. In Oregon, DEQ is the agency responsible for issuing this certification. WQC would already be granted if the proposed project obtains Nationwide Permits 12 and 14 from the U.S. Army Corps of Engineers (USACE), which are pre-certified permits.

Oregon Department of State Lands

Removal-Fill Permit
A removal-fill permit would be required prior to working within wetlands. Oregon's Removal-Fill Law (Oregon Revised Statutes [ORS] 196.795-990) requires any person who plans to "remove or fill" material within "waters of the state" to obtain a permit from the Department of State Lands.

Lake County Planning Department

Authorization Notice
An authorization notice would be required from the Lake County Planning Department for new connections to the municipal water and wastewater system.

Floodplain Permit
The Lake County Planning Department oversees floodplain management and risk assessment in Lake County. The County has incorporated floodplain, flood hazard area elevation, and flood susceptibility language into its ordinances and permit applications to regulate development within floodplains (Lake County, 2013).

Right-of-Way Permit
The Lake County Road Department would require a right-of-way permit for construction of an access road connecting the site to Kadrmas Road and the construction of the pipeline with the railroad right-of-way.

Urban Growth Boundary Amendment

Construction of the biomass plant and associated facilities described in Section 2.2 is consistent with Lake County Zoning requirements for agricultural use. Red Rock will apply for an Urban Growth Boundary amendment to allow connection with the municipal water and wastewater system. The proposed boundary amendment would exchange approximately 61 acres of land currently outside the Urban Growth Boundary for 58 acres within the current boundary. As part of the boundary amendment, Red Rock is requesting the inclusion parcel be included in the Town of Lakeview's Industrial Park Sub-District Overlay zone. Red Rock is also requesting Lake County revise the zoning of the parcel to Commercial C-1 and the Town of Lakeview apply their requirements for commercial plan designation.

1.4.3 Other Regulatory and Compliance Requirements

The EA considers all applicable laws and regulations, including but not limited to the following[1]:

- CAA (42 USC §7401 *et seq.*)
- Executive Order (EO) 11990, *Protection of Wetlands* (24 May 1977)
- Clean Water Act (CWA) (33 USC §1251 *et seq.*), including Section 404 (33 USC 25 §1344)
- Section 10 of the Rivers and Harbors Act of 1899 (33 USC §403)
- EO 11988, *Floodplain Management* (24 May 1977 *et seq*) as amended by EO 16930, *Establishing a Federal Flood Risk Management Standard and a Process for further Soliciting and Considering Stakeholder Input* (30 Jan 2015)
- EO 13175, *Consultation and Coordination with Indian Tribal Governments* (9 November 2000)
- Endangered Species Act (ESA) (16 USC §1531-1542)
- Pollution Prevention Act (42 USC §§13101-13102 et seq.)
- Archaeological Resources Protection Act (16 USC §470aa-mm)
- National Historic Preservation Act (NHPA) (16 USC §470 et seq.)
- American Indian Religious Freedom Act (42 USC §1996)
- Protection of Historic Properties (36 CFR Part 800)
- Native American Graves Protection and Repatriation Act of 1991 (25 USC §3001 et seq.)
- Resource Conservation and Recovery Act (42 USC §6901 et seq.)
- Toxic Substance Control Act (15 USC §2601 et seq.)
- Comprehensive Environmental Response, Compensation, and Liability Act (42 4314 USC §9610)
- Superfund Amendments and Reauthorization Act (42 USC §9601 et seq.)
- Emergency Planning and Community Right-to-Know Act (42 USC §11000 et seq.)

[1] Other authorizations, permits, reviews or approvals for construction and operation may be required based on final design. Red Rock would be responsible for obtaining all permits and approvals required. This may include approval for the use of the Lake County Railroad during construction of the proposed 6-inch natural gas pipeline.

- EO 12580, *Superfund Implementation* (23 January 1987)
- Energy Independence and Security Act (Public Law 110-140)
- EO 12898, *Federal Actions to Address Environmental Justice in Minority*
- Populations and Low-Income Populations (11 February 1994)
- Oil Pollution Act (40 CFR Part 112 Spill Prevention Control and Countermeasures (SPCC) Plan and Facility-Specific Response Plan)
- Noise Control Regulations (OAR Chapter 340, Division 35)

1.5 DOCUMENT ORGANIZATION

This EA is organized into eight chapters.

Chapter 1 Contains the purpose of and need for action, the overview and background of the government's requirement, identification of the decision to be made, a summary of the scope of the environmental review, identification of applicable regulatory requirements, and a summary of the document organization.

Chapter 2 Describes the history of the formulation of alternatives, identifies alternatives eliminated from further consideration, provides a detailed description of the proposed action, describes the alternatives and the no-action alternative, summarizes other actions announced for the project sites and the surrounding community, provides a comparison matrix of environmental impacts for all alternatives, identifies the preferred alternative, and describes measures to minimize or reduce impacts.

Chapter 3 Documents the current site's natural, cultural, and historical resources. This section documents the comparison between the current resource baseline and the proposed future state through a detailed resource impact review, evaluation, analysis and assessment. In addition, this section addresses cumulative, irreversible and irretrievable resource development impacts. (40 CFR §1502.15 & §1502.16).

Chapter 4 Lists document preparers.

Chapter 5 Lists persons and agencies consulted in the EA scoping and preparation process.

Chapter 6 Glossary and acronyms

Chapter 7 Lists source documents relevant to EA preparation to include: stakeholder and public comments received and resultant resolution matrix, location for relevant EA execution and support documents (formal public meeting minutes, Department of Agriculture Form 1006, newspaper EA announcements, formal regulator responses, etc.).

Chapter 8 References

CHAPTER 2: DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This chapter has multiple parts providing documentation and discussion on the proposed project's physical location, characteristics and why the proposed action is preferred. The governing NEPA regulations, as defined in 32 CFR 989.8, require the proponent to identify, analyze and document reasonable alternatives to the preferred proposed action. This chapter includes analysis for the proposed action (Section 2.3), alternatives considered but eliminated (Section 2.4) and the no-action alternative (Section 2.5).

2.2 PROPOSED ACTION

Red Rock proposes to design, construct, and operate a commercial scale renewable biofuels facility and associated infrastructure to produce jet fuel, diesel fuel, and naphtha (a gasoline blendstock) from a woody biomass feedstock consisting primarily of mill and forest residues. Red Rock plans to only use by-products from forest management activities. They currently have long-term contracts for woody biomass feedstock from private lands but may accept feedstock from federal or state lands in the future. Annually, the plant would gasify up to approximately 170,000 bone dry tons per year of feedstock to produce approximately 7.2 MMgal jet fuel, 7.2 MMgal diesel fuel, and 3.6 MMgal naphtha. The facility plans to use Fischer-Tropsch technology to convert the renewable woody biomass into a high quality and blendable renewable biofuels and naphtha as a marketable secondary product.

Red Rock would utilize renewable woody biomass by-products from sawmills, forest management activities such as pre-commercial thinning, forest restoration and fuels treatments, and timber harvests. The types of residual renewable biomass supplies used to produce fuel are listed below.

- sawdust
- wood chips with bark
- bark
- shavings
- slash[2]

An assessment of publicly available data shows a sufficient amount of biomass available in the Lakeview region**.** Based on timber harvest data from 2010 through 2015, it is estimated that residual renewable biomass material available in a 125-mile radius around Lakeview, Oregon is approximately 386,964 bone dry tons per year (University of Montana, 2016). This estimate is based on county-level timber harvest volumes from non-federal lands.

[2] Slash is the branches, tops, stumps, and other renewable biomass left after timber harvest, fuel reduction, and forest management activites that would otherwise be piled and burned.

2.3 SELECTION CRITERIA FOR ALTERNATIVES

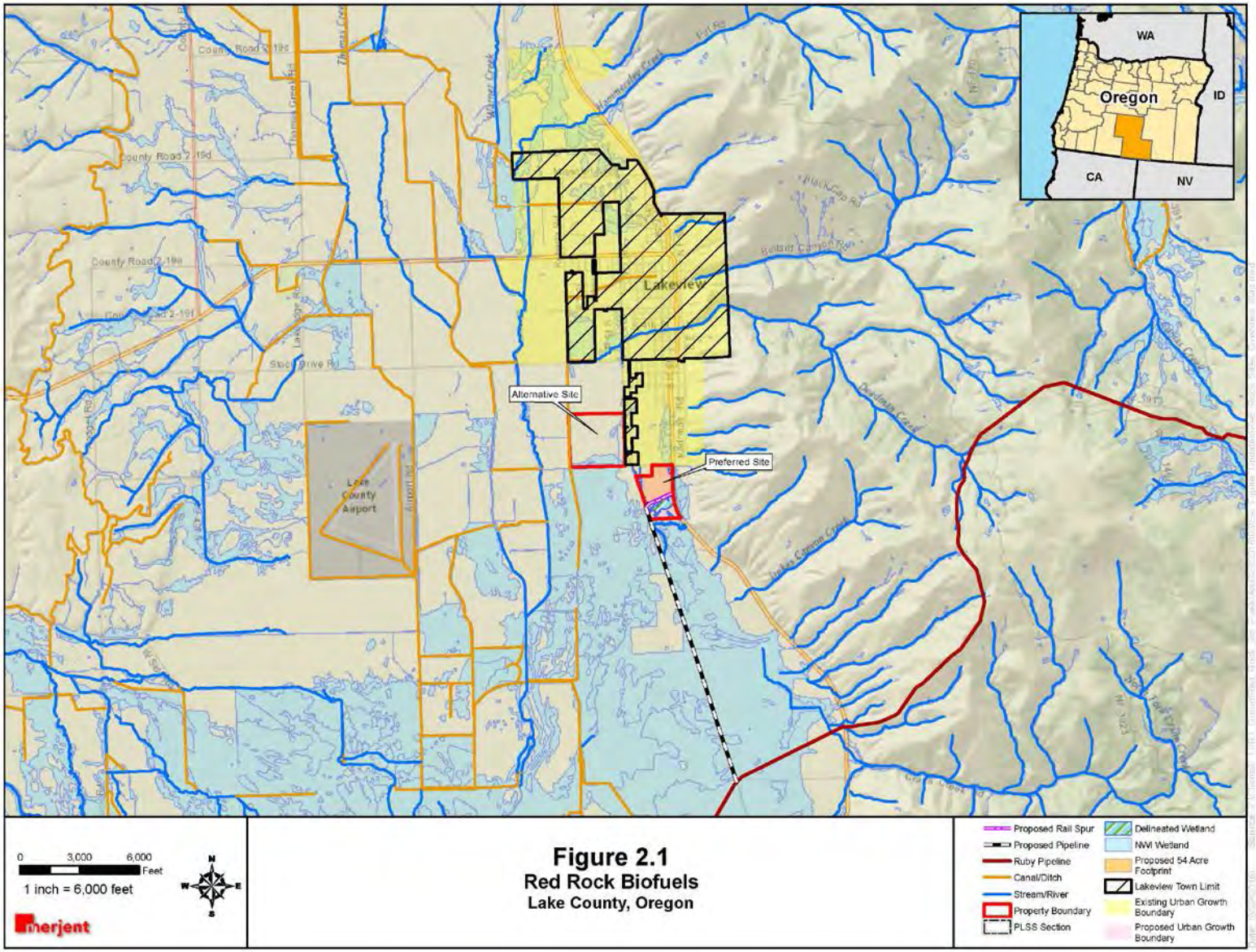
2.3.1. Title III Program Objectives

ADBPP contractors must develop a project site that meets the following programmatic objectives:

1) The IBPE would achieve economic viability, through stable and economic feedstock supplies, operational efficiencies, and viable product markets, by the end of the technical period of performance.
2) The IBPE would be constructed within 3 years of the Phase I agreement award and demonstrate full-scale production capability within 4 years of the Phase 1 agreement.

The following are site selection criteria related to these objectives:

1) Minimize natural and human environmental impacts;
2) Have appropriate zoning for the construction/operation of an IBPE and sufficient distance from non-compatible zoning: residential, commercial, public parks and non-industrial areas;
3) Be located in a commercially-viable location;
4) Have proximity to required resources and/or markets;
5) Have access to multi-modal transportation infrastructure; and
6) Allow for development within the time frame necessary to meet the program objectives.


WA
Oregon
ID
CA
NV
Lakeview
Alternative Site
Preferred Site
Lake County Airport
0 3,000 6,000 Feet
1 inch = 6,000 feet
N
W
E
S
Figure 2.1
Red Rock Biofuels
Lake County, Oregon
Proposed Rail Spur
Proposed Pipeline
Ruby Pipeline
Canal/Ditch
Stream/River
Property Boundary
PLSS Section
Delineated Wetland
NWI Wetland
Proposed 54 Acre Footprint
Lakeview Town Limit
Existing Urban Growth Boundary
Proposed Urban Growth Boundary

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The AFRL/RXM program adapted the definition of renewable biomass from the Food, Conservation, and Energy Act of 2008 (P.L. 110-246) contained in Section 9001(12). Consistent with that definition of renewable biomass, ADBPP contractors must design, construct and/or retrofit, validate, qualify, and operate a domestic commercial scale IBPE that meets the following requirements:

1) Biofuel must be produced domestically.
2) Biofuel must comply with EISA Section 526.
3) Biofuel must come from an acceptable feedstock:
    a. Compliant with "renewable biomass" as defined in Section 103 of the Federal Land Policy and Management Act of 1976 (43 USC §1702) that:
        i. Uses forest byproducts that are removed as a preventative treatment to reduce forest fire fuel and risk, reduce or contain disease or insect infestation, or restore ecosystem health;
        ii. Otherwise used for higher-value products; and
        iii. Harvested in accordance with applicable law and land management plans and required for old growth maintenance, restoration and management in accordance with Section 102 sub-section (e) paragraphs 2 through 4 and the large tree retention sub-section (f) of the Health Forest Restoration Act (16 USC §6512).
    b. Renewable or recurring organic matter originating from non-federal or Indian tribal lands held in a federal trust or subject to restrictions against alienation imposed by the U.S. including:
        i. Renewable organic plant material to include trees, algae, or other microorganisms grown for the specific purpose of converting into energy; and
        ii. Waste materials including crop residues (including cobs, stover, bagasse and other residues); vegetative waste (including wood wastes and residues); animal waste and by-products (including oils, fats, greases and manure); and food or yard wastes.
    c. Biomass comprised predominately of organic fraction from MSW or sewage sludge (bio-solids).
    d. A facility that currently plans to add capacity or transition from traditional feedstocks (i.e. corn starch, cane derived sugars, sugar beets or sorghum and oils derived from soybeans, canola, sunflower, peanut, or other oils derived from corn or dried distiller grains with soluble, or feedstock materials used in the food or feed production) to an approved alternative feedstock.
4) The biofuels must be drop-in replacement suitable for military operational use.
5) The IBPE must have a rated capacity at least 10 million gallons per year (MGY) of neat (100% pure) biofuel.

6) The contractor must commit to certain Air Force business requirements including cost share and construction contingency reserve requirements.

Contractors to the ADBPP program can employ various combinations of feedstocks and conversion technologies to produce biofuels, and can choose a project site at any location determined to have appropriate access to feedstocks and other facility requirements that meets the objectives and requirements listed above.

2.3.1 Site Specific Criteria Requirements

In addition to the site selection criteria identified in section 2.3, further criteria for siting that is specific to Red Rock's planned technology and design is necessary. Based on preliminary technology design and layout of the project components, the proposed action requires approximately 54 acres of land to construct, and:

- Transportation logistics
- Access to Natural Gas
- Appropriate zoning for a biofuels production facility; and
- Infrastructure availability

2.3.2 Location and Details of the Proposed Action

Site Alternatives

Red Rock developed two site options for the location of the proposed biofuels facility (Figure 2.1 shows both the Preferred and Alternative Sites):

- Locating the biofuels facility on an 87.7-acre parcel of private land in Lake County, Oregon, immediately south of the Lakeview town boundary (referred to as the Preferred Site; see Figure 2.2).
- Locating the biofuels facility on 169.1-acre parcel of private land in Lake County, Oregon west of the southern Lakeview town boundary (referred to as the Alternative Site; see Figure 2.3).

Both site alternatives were chosen due to the proximity to the Ruby natural gas pipeline and existing infrastructure, proximity to woody biomass feedstock sources, and the ability to avoid wetland features within the facility's approximately 54-acre footprint.

Preferred Site

The Preferred Site totals approximately 87.7 acres of private land in Lake County, Oregon, south of the Town of Lakeview on the south side of Kadrmas Road, west of Highway 395, and east of the Lake County Railroad. Construction and operation would be confined to approximately 54 acres within the 87.7 acres. The Preferred Site is outside the Town of Lakeview boundaries; however, it is within 0.5 mile of municipal water, wastewater, electric, and telecommunication utility supplies and is approximately 3 miles north of the Ruby Pipeline, which has capacity to supply the proposed facility with natural gas. The Preferred Site abuts Kadrmas Road, which

provides access for biomass supply to be delivered to the site. The Lake County Railroad runs along the west side of the property and provides an easily accessible option to construct a rail spur into the facility allowing for cost effective transport of product. The Preferred Site is also adjacent to Dog Lake Construction Company on the northwest side, which is a compatible industrial land use with the proposed biofuels facility.

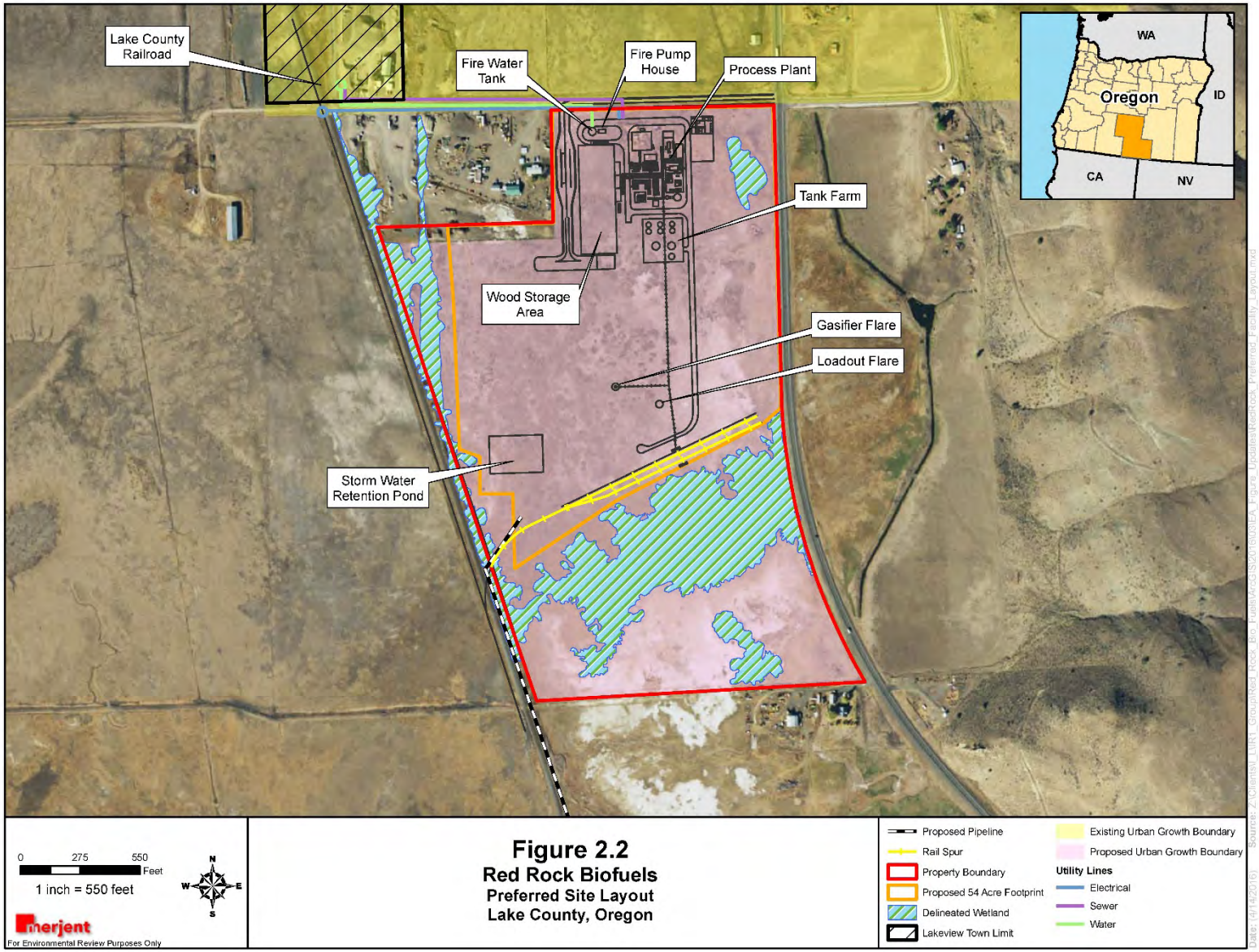
2.3.3 Alternative Site

The Alternative Site is approximately 169.1 acres of private land located west of the Lake County Railroad and south of County Road 1-10. Construction and operation would be confined to a 54-acre footprint. The Alternative Site location is outside the Town of Lakeview boundaries; however, as with the Preferred Site, the parcel is within 0.5 mile of municipal water, wastewater, electric, and telecommunication utility supplies and is approximately 3.5 miles north of the Ruby Pipeline, which has capacity to supply natural gas to the proposed facility. Kadrmas Road provides access for biomass supply delivery, and fuel product transport options are available by rail via a rail spur off the Lake County Railroad located on the eastern side of the Alternative Site.

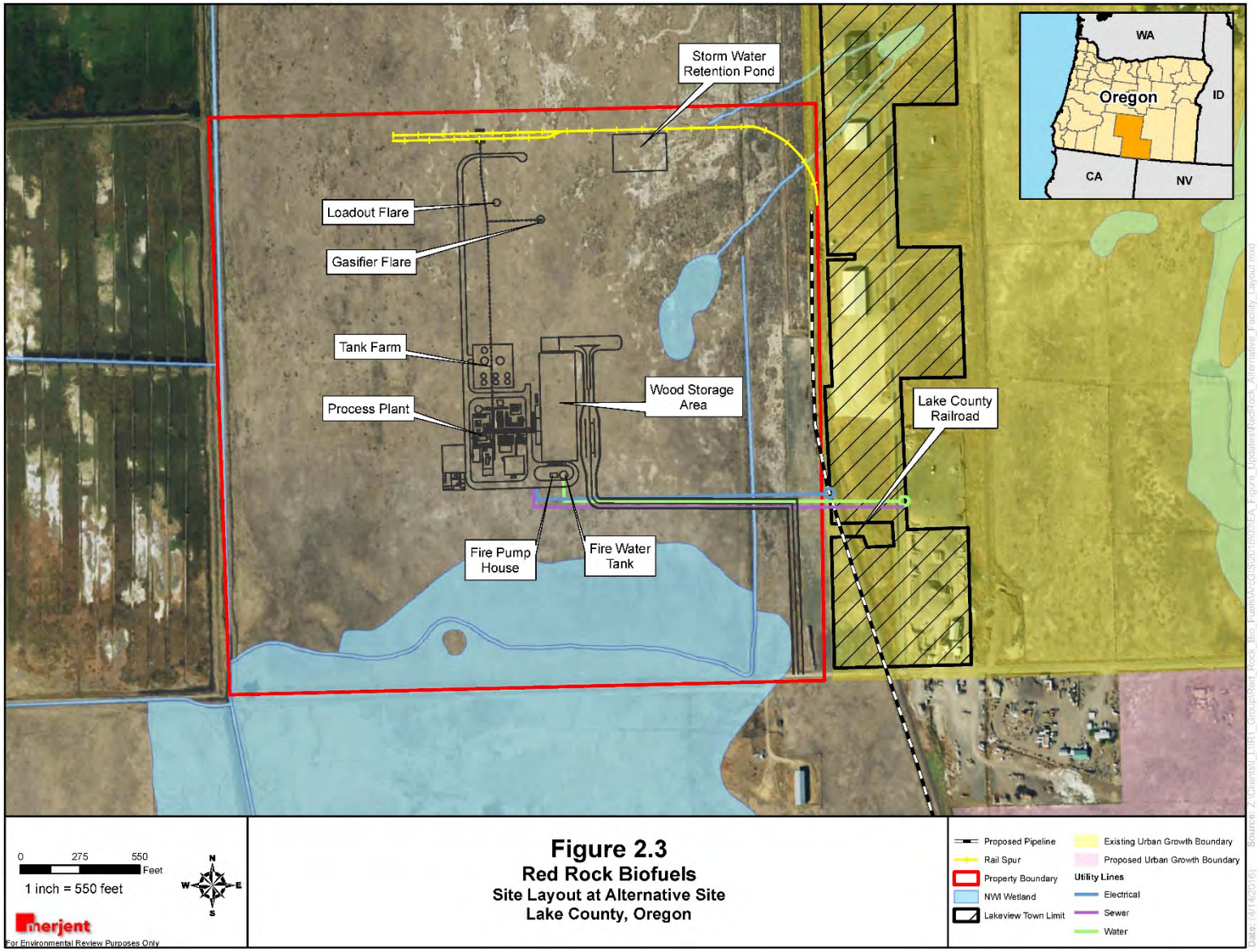
2.3.4 Facility Description

The proposal involves construction of a new biofuels facility and associated infrastructure to produce jet fuel, diesel fuel, and naphtha (a gasoline blendstock) from a woody biomass feedstock consisting primarily of mill and forest residues. Annually, the plant would gasify up to approximately 170,000 bone dry tons of feedstock (331,818 tons per year, wet) to produce approximately 7.2 MMgal jet fuel, 7.2 MMgal diesel fuel, and 3.6 MMgal naphtha.

The facility would convert woody biomass to liquid fuels via the gasification-to-Fischer-Tropsch pathway. The biorefinery in Lakeview would have a receiving facility for truck-delivered woody biomass, biomass handling and storage area for up to 30-day supply, and biomass size-reduction equipment. The conversion process begins with the gasification of woody biomass to produce synthesis gas. The synthesis gas is cleaned and cooled and sent to a Fischer-Tropsch unit where it is converted to Fischer-Tropsch waxes and liquids. Any unconverted syngas leaving the Fischer-Tropsch unit (referred to as tailgas) is sent back to the gasifier for recycle or combusted with natural gas in the gasification system burners for process heat. The Fischer-Tropsch waxes and liquids are then refined via product upgrading. The biomass gasification via the Fischer-Tropsch process is a U.S. Environmental Protection Agency (EPA) and American Society for Testing and Materials (ASTM)-approved pathway for the production of drop-in jet fuel to be used at a 50-50 blend with conventional fuels and drop-in diesel fuel, which can be used as a direct replacement (no blending required) for conventional diesel. Thus, renewable fuel products would meet ASTM specifications for use in jets and motor vehicles in operation today.


Lake County Railroad
Fire Water Tank
Fire Pump House
Process Plant
Tank Farm
Wood Storage Area
Gasifier Flare
Loadout Flare
Storm Water Retention Pond
WA
Oregon
ID
CA
NV
0 275 550
Feet
1 inch = 550 feet
N
W
E
S
merjent
For Environmental Review Purposes Only
Figure 2.2
Red Rock Biofuels
Preferred Site Layout
Lake County, Oregon
Proposed Pipeline
Rail Spur
Property Boundary
Proposed 54 Acre Footprint
Delineated Wetland
Lakeview Town Limit
Existing Urban Growth Boundary
Proposed Urban Growth Boundary
Utility Lines
Electrical
Sewer
Water

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Storm Water Retention Pond
Loadout Flare
Gasifier Flare
Tank Farm
Process Plant
Wood Storage Area
Lake County Railroad
Fire Pump House
Fire Water Tank
WA
Oregon
ID
CA
NV
0 275 550
Feet
1 inch = 550 feet
N
W
E
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For Environmental Review Purposes Only
Figure 2.3
Red Rock Biofuels
Site Layout at Alternative Site
Lake County, Oregon
Proposed Pipeline
Rail Spur
Property Boundary
NWI Wetland
Lakeview Town Limit
Existing Urban Growth Boundary
Proposed Urban Growth Boundary
Utility Lines
Electrical
Sewer
Water

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The exact location for the proposed biofuels facility has not been determined within the option parcels; however, the general location has been determined and is illustrated on Figures 2.2 and 2.3. The facility footprint and components would be identical for both site options; however, the layout would vary slightly. The proposed facility would have an approximate 54-acre footprint. There is potential for adverse effects to historical and cultural resources, and mitigations are addressed in the project's MOA. The major facility design intends to avoid wetlands that are wholly located within the 54-acre footprint and would include:

- A receiving facility for truck delivered woody biomass;
- A biomass handling, processing, and storage area with capacity for up to 30 days of operation;
- Approximately 3 acres devoted to the core processing plant and an administration and maintenance building with various facility components ranging from 30 to 100 feet in height;
- An above ground half-acre tank farm with up to nine tanks;
- Employee and visitor parking areas that can accommodate approximately 31 employees, of which approximately 20-25 would be on shift during the weekday;
- A north-south site access road connecting to Kadrmas Road and secondary roads within the site boundary;
- Approximately 600-square-foot water pump house, an approximately 50-foot-diameter fire water tank, and an associated buried water utility; and
- A stormwater retention pond.

The process plant would be approximately 48,000 square-foot area with multiple stacks for venting air emissions. The process plant would include a gasifier, syngas compression unit, carbon dioxide (CO_2) removal unit, pressure swing adsorption unit, Fischer-Tropsch unit, and a hydroprocesser. The process plant would be constructed above the 100-year floodplain. The process plant would use woody biomass supplied from existing, available sources in the area. The project would include a biomass handling, processing, and storage area with capacity to store approximate 30-day supply of woody biomass feedstock. Red Rock would also develop an Emergency Response Plan that is coordinated with first responders and the Local Emergency Planning Committee. Items to be detailed in this plan describing the procedures to be followed in the event of an emergency include:

- Spills or releases of hazardous materials;
- Fire/explosion;
- Severe weather;
- Medical emergency; and
- Bomb threat.

The above ground tank farm situated on a concrete pad approximately 120 feet by 140 feet (16,800 square feet) with nine carbon steel tanks would also be included on-site, and represents 10-day storage for each of the fuels produced. The tank farm would include two 300,000-gallon tanks, one 120,000-gallon tank, four 30,000-gallon tanks, and two 12,000-gallon tanks. The tank farm would be enclosed with a dike (which serves as a secondary containment) with walls above the 100-year floodplain mark. The tank farm would store finished fuel products with separate tanks for fuel prior to quality control testing, off-spec fuel, and on-spec fuel ready to be transported by rail or truck to West Coast markets.

One 750,000-gallon carbon steel tank would be used to provide both plant service water and fire water for water treatment needs. Approximately 170,000 gallons of water is needed for 8 hours of plant service water and 500,000 gallons of water for 8 hours of fire water. The fire water tank and associated housing would be constructed above the 100-year floodplain. The fire water would be drawn off the bottom of the tank while the plant service water would be drawn off at an elevated level above the volume dedicated for fire water.

An administrative building approximately 11,200 square feet standing approximately 35 feet high would be constructed to provide workspace for an estimated 31 administrative and maintenance staff including work areas, maintenance and control rooms, a quality control lab, and lavatories. The administrative building would be constructed above the 100-year floodplain. Separate employee and visitor parking lots serving this building would also be constructed. An entry road approximately 600 feet long and 50 feet wide with 25-foot-wide rights-of way on either side would be constructed to provide access from Kadrmas Road to the plant. A truck scale would also be installed adjacent to the entry road immediately before the administrative building. A truck loading rack would be constructed to provide the option of shipping fuel via truck.

The facility would use and store various maintenance chemicals such as cleaners, solvents, lube oils, greases and laboratory reagents. Laboratory reagents would typically be stored in quantities of less than one gallon and would be stored inside the laboratory. Maintenance chemicals and lubes would typically be stored in 55 gallon drums or smaller. Lube oils, greases, cleaners etc. would be kept in a chemical storage shed/building or maintenance shop. Chemicals are required to be stored in a manner that prevents spills to the environment. The biofuels facility would store and dispose of all chemical waste in accordance with spill prevention and hazardous waste regulations.

A 0.36-mile-long rail spur would be constructed off of Lake County Railroad to transport finished fuel products to market. The rail spur would be constructed at the same elevation as the adjacent portion of Lake County Railroad, which is above the 100-year floodplain. Loading zones positioned for loading railcars would also be developed. In addition, a natural gas pipeline lateral would be extended from the Ruby Pipeline approximately 3 miles south of the Preferred Site within the existing right-of-way for the railroad to supply a source of fuel for the facility. The construction right-of-way for the pipeline would be approximately 100 feet wide and the permanent right-of-way for the pipeline would be approximately 30 feet wide. During construction, the existing 100

foot railroad right-of-way would be used to transport construction equipment and for temporary soil stockpiles.

The facility would have an estimated 65 truckloads per day on a 10 to 12 hour receiving day, 5 to 6 days per week. The trucks would primarily use US 395 as its main route to and from the facility. Fuels produced by the facility would be shipped via rail or truck to West Coast markets. The facility would ship approximately 10 outbound rail cars per week on the Lake County Railroad connecting to the Union Pacific to the final destination. Truck shipping would occur if rail shipping was not available or feasible. The facility would include raw water treatment and wastewater treatment. Raw water treatment would use potable water from the Lakeview municipal water supply to provide utility water. The proposed project would require approximately 31 employees for operations and approximately 50 full-time-equivalent positions for biomass supply with more needed for construction. Most positions would likely be filled by residents of Lake County, with a majority residing in the Town of Lakeview.

2.4 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Red Rock considered other sites in Lake County that were close to available woody biomass feedstocks, the Ruby Pipeline, and other existing infrastructure such as water and wastewater, electric, telecommunication utility lines, and roads. An alternate site was considered north of the Town of Lakeview on a 56-acre parcel that was partially prepared for development. This site is outside floodplains, however, it is surrounded by wetlands and surface water features, which constrain the needed development plus full installment of the needed pipeline. The length and distance needed to install the pipeline would have severely impacted the surrounding wetlands and other existing infrastructure resulting in unavoidable costs and mitigation needs. The extent of the surrounding wetlands shown by the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping were unavoidable in the 56-acre parcel. These increased wetland impacts causing uneconomical costs resulted in a determination that this site was not feasible nor reasonable and therefore eliminated from further consideration.

Another alternative site was considered approximately 3 miles south of the Town of Lakeview within 0.5 mile of the Ruby Pipeline. This parcel has extensive wetlands throughout. Consequently, avoidance of permanent impacts on wetlands would not be possible. There is also limited utility access at this site. To be a viable industrial location, significant infrastructure improvements and regulatory challenges need to be satisfactorily resolved. These include, but are not limited to, access to either public potable or site specific water (operational and fire) and wastewater operations. Because of the site's close proximity to Goose Lake's shoreline, impacts to wetlands and the inability to accommodate the 54-acre footprint design, this site was dismissed from further consideration.

Red Rock used the government's requirements to site the proposed facility. Project feasibility to meet the government's environmental impact and economic viability requirements limited

potential sites to those with existing, suitable topographical and infrastructure features. This limited potential sites to those primarily in the floodplain.

2.5 NO-ACTION ALTERNATIVE

Under the no-action alternative, the government would not provide federal funding to develop the proposed biofuel production capability on either site. The no-action alternative would not promote the 8 January 2013 PD to promote the use of "advanced biomass-derived transportation fuels that use a domestic, renewable feedstock provide a secure alternative that reduces the risks associated with dependence on petroleum sources." While the no-action alternative would not satisfy the purpose of or need for the proposed action, this alternative was retained to provide a comparative baseline against which to analyze the impacts of the action alternatives, as required under CEQ regulations (40 CFR §1502.14). The no-action alternative reflects the status quo and serves as a benchmark against which the impacts of the proposed action can be evaluated. It is always possible that non-federally funded development would result in similar development and environmental impacts on this site as documented.

CHAPTER 3:
DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter defines the existing resources in their current baseline condition and compares, contrasts and analyzes the resulting regulatory environmental quality and occupational health and safety perspectives following a decision to implement the action. This discussion is organized by individual resource and provides the basis for comparison of the effects between alternatives.

The following impact levels and assessment criteria were used to assess impacts of the proposed project, which includes all proposed facility components and the pipeline lateral for each resource topic, unless otherwise noted. Direct and indirect impacts identified are based on duration, extent, and intensity of the impact. Summary impact levels are characterized as negligible, minor, moderate, or major. Impact level thresholds are defined in Table 3.1.

Table 3.1
Resource Assessment and Impact Levels

Impact Level	Negligible	Minor	Moderate	Major
Intensity	Little or no impact on the resource would occur; any change that may occur would be perceptible but difficult to measure.	Change in a resource would occur, but no substantial resource impact would result. The change in the resource would be perceptible but would not alter the condition of the resource.	Noticeable change in a resource would occur and this change would alter the condition or appearance of the resource, but the integrity of the resource would remain.	Substantial impact or change in a resource area would occur that is easily defined and highly noticeable, and that measurably alters the condition or appearance of the resource.
Extent	None	Localized: Impact would occur at the site or its immediate surroundings, and would not extend into the region.	Regional: Impact would affect the resource on a regional level, extending well beyond the immediate Alternative Site.	Statewide: Impact would affect the resource throughout the state, potentially extending well beyond the region or the state.
Duration	None	Temporary/Intermittent: Impact would occur during project implementation. After the project, resource conditions would return to pre-project conditions.	Short-term: Impact would extend beyond the time of the project, but would not last more than 2 years.	Long-term: Impact would likely last more than 2 years and may continue beyond the lifetime of the project.

3.1 DIRECT AND INDIRECT IMPACTS

Described by CEQ guideline 40 CFR 1508.8, a direct effect or impact is one caused by the action and occur at the same time and place. An indirect environmental impact is an impact caused by the action and is later in time or farther removed in distance, but still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. There is the potential for indirect effects from construction-related activities including sources of noise (i.e., construction traffic and the operation of construction equipment) and increased human presence during construction of the biomass facility.

Under the no action alternative, there would be no increased risk for indirect impacts to resources, utilities and infrastructure, or socioeconomic and environmental justice populations.

3.2 AIR QUALITY, METEOROLOGY, AND CLIMATE CHANGE

Quality of the Southern Lake County airshed would be affected by construction and operation of the proposed biofuels facility. Temporary air emissions would be generated during construction of the proposed ground facilities. Air emissions associated with operations would be generated throughout the life of the proposed biofuels facility. This section of the EA addresses the construction and operating emissions from the proposed biofuels facility, as well as projected impacts and compliance with regulatory requirements.

The proposed action would create new facilities for which air emissions do not currently exist. The facility would emit criteria pollutants, greenhouse gases (GHG), and hazardous air pollutants (HAP). The primary sources of emissions would be feedstock handling, product storage, and natural gas combustion. A Standard Air Contaminant Discharge Permit was issued to Red Rock on June 24, 2015 by the Oregon Department of Environmental Quality.

3.2.1 Current/Baseline Resource State

Lake County, Oregon has a continental climate with warm summers. Temperatures typically range from 18 degrees Fahrenheit (°F) in the winter to 84°F in the summer, and rarely fall below 4°F or rise above 91°F. Less than 15 inches of precipitation are experienced annually. Winds typically range from 0 miles per hour (mph) to 17 mph and rarely exceed 24 mph.

Ambient air quality is protected by federal and state regulations. Under the CAA and its amendments, EPA has established National Ambient Air Quality Standards (NAAQS) for CO, Pb, nitrogen dioxide (NO_2), ozone, particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2), to protect human health (primary standards) and public welfare (secondary standards). Individual states may set air quality standards that are at least as stringent as the NAAQS. Oregon has adopted all of the NAAQS in Chapter 340 of the Oregon Administrative Code. The NAAQS are summarized in Table 3.2 below.

Lake County is included as part of the Central Oregon Intrastate Air Quality Control Regions (AQCR). AQCRs are intra- and interstate regions, such as large metropolitan areas, where the improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or portion thereof, is designated as attainment, unclassifiable, maintenance, or nonattainment for each pollutant. Areas where an ambient air pollutant concentration is determined to be below the applicable ambient air quality standard are designated attainment. Areas where no data are available are designated unclassifiable, and are treated as attainment areas for the purpose of permitting a stationary source of pollution. Areas where the ambient air concentration is greater than the applicable ambient air quality standard are designated nonattainment. Areas that have been designated nonattainment but have since demonstrated compliance with the ambient air quality standard(s) are designated maintenance for that pollutant. In Oregon, areas that are exceeding or are close to exceeding the NAAQS may opt to participate in a state sustainment area program, discussed in Section 3.1.3.

Table 3.2
National Ambient Air Quality Standards

Pollutant	**Averaging Period**	**NAAQS**	
		Primary	**Secondary**
SO_2	Annual [a,l]	0.03 ppm 80 µg/m^3	—
	24-hour [b,l]	0.14 ppm 365 µg/m^3	—
	3-hour [b]	—	0.5 ppm 1300 µg/m^3
	1-hour [j,k]	75 ppb	
PM_{10}	24-hour [d]	150 µg/m^3	150 µg/m^3
$PM_{2.5}$	Annual [e]	15.0 µg/m^3	15.0 µg/m^3
	24-hour [f]	35 µg/m^3	35 µg/m^3
NO_2	Annual [a]	53 ppb 100 µg/m^3	53 ppb 100 µg/m^3
	1-hour [c]	100 ppb	53 ppb
CO	8-hour [b]	9 ppm 10,000 µg/m^3	—
	1-hour [b]	35 ppm 40,000 µg/m^3	—
Ozone (2008 Standard)	1-hour [b]	0.12 ppm	—
	8-hour [g,h]	0.075 ppm	0.075 ppm
Ozone (1997 Standard)	8-hour [g,i]	0.080 ppm	0.080 ppm
Pb	Rolling 3-month [a]	0.15 µg/m^3	0.15 µg/m^3
	3-month [a]	1.5 µg/m^3	1.5 µg/m^3

Table 3.2 **National Ambient Air Quality Standards**			
Pollutant	**Averaging Period**	**NAAQS**	
		Primary	**Secondary**

Notes:
(a) Not to be exceeded.
(b) Not to be exceeded more than once per year.
(c) Compliance based on 3-year average of 98th percentile for daily maximum 1-hour average at each monitor within an area.
(d) Not to be exceeded more than once per year on average over 3 years.
(e) Compliance based on 3-year average of weighted annual mean $PM_{2.5}$ concentrations at community-oriented monitors.
(f) Compliance based on 3-year average of 98th percentile of 24-hour concentrations at each population-oriented monitor within an area.
(g) Compliance based on 3-year average of fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area.
(h) The EPA is currently reconsidering the 8-hour ozone standard set in March 2008.
(i) The 1997 8-hour ozone standard and associated implementation rules remain in place as the transition to the 2008 standard occurs.
(j) Compliance based on 3-year average of 99th percentile of daily maximum 1-hour average at each monitor within an area.
(k) The 1-hour SO_2 standard is effective August 23, 2010.
(l) This standard will remain in effect until 1 year after the area is designated for the 2010 standard.
$\mu g/m^3$ = micrograms per cubic meter.
ppb = parts per billion by volume.
ppm = parts per million by volume.

The EPA, state, and local agencies have established a network of ambient air quality monitoring stations to measure and track the background concentrations of criteria pollutants across the United States. These data are then used by regulatory agencies to compare the air quality of an area to the NAAQS. One monitor, located in Lakeview, Oregon, is currently recording data on $PM_{2.5}$ concentration. All other active monitors are located at a distance greater than 150 miles from the proposed project site and are therefore not representative of the ambient air quality at the proposed project site. A summary of the regional ambient air quality monitoring data from the three most recent 3-year period (2010-2012, 2011-2013, and 2012-2014) for the proposed project area is presented in Table 3.3. Note that at the time of this writing, preliminary monitor data is available for 2015; however, this data will not be finalized until May 1, 2016.

Table 3.3
Ambient Air Quality Concentration of $PM_{2.5}$

Year	**98th percentile of 24-hour averaging period[(a)]**	**3-year Average of 98th Percentile**	**Annual Mean**	**3-Year Average of Annual Mean[(a)]**
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
2010	26	--	7.5	--
2011	38	--	9.1	--
2012	37	33.7	9.7	8.8
2013	94	56.3	14.6	11.1
2014	42	57.7	8.6	11.0
2015[(b)]	33	56.3	7.8	10.3

Notes:
(a) Readings from monitor ID# 41-037-0001; located at Center and M Streets; Lakeview, Oregon, located approximately 1mile northeast of project site.
(b) Preliminary data. Final data will be available on May 1, 2016.

Lake County is unclassifiable for $PM_{2.5}$, NO_2, CO, ozone, and Pb. Beginning in 1993, part of Lake County was designated nonattainment for PM_{10}. The county implemented an attainment action plan and was redesignated maintenance for PM_{10} in July of 2006. Beginning in 2013, the ambient concentration of $PM_{2.5}$ exceeded the NAAQS. As a result, Lakeview voluntarily created and implemented the Lakeview Area Particulate Matter ($PM_{2.5}$) Advance Plan in September 2014. Additionally, in April 2015, Lakeview and Lake County opted to participate in Oregon's sustainment area program. Neighboring Klamath County is classified nonattainment for $PM_{2.5}$ and maintenance for PM_{10} and CO.

On December 7, 2009, the EPA expanded their definition of air pollution to include GHGs, however, there are currently no ambient air quality standards for GHGs. GHGs are gases that trap heat in the Earth's atmosphere. They are emitted by both natural processes and human activities, and their accumulation in the atmosphere regulates temperatures. GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. To compare GHGs to each other, each GHG quantity is translated into a common unit called the "carbon dioxide equivalent" ($CO_{2\text{-}e}$). There are no established thresholds or standards for GHGs. However, on December 18, 2014, CEQ released revised draft guidance on how the effects of GHG emissions and climate change should be considered under NEPA (CEQ, 2014). This guidance document provides a reference point of 25,000 metric tons of $CO_{2\text{-}e}$ emissions on an annual basis below which a GHG emissions quantitative analysis is not warranted. The proposed biofuels would emit greater than 25,000 metric tons of $CO_{2\text{-}e}$. An analysis of the effects of GHG emissions is included in 3.2.3.

3.2.2 Resource Impacts and Consequences due to Proposed Action

Preferred Site

The proposed action would produce air pollutant emissions during both the construction phase and the operational phase. Construction of the associated facility would result in intermittent and temporary fugitive emissions, including dust from soil disruption and combustion emissions from the construction equipment. Delivery vehicles and personal vehicles of construction workers commuting to and from work sites would cause temporary indirect emissions. The Urban Growth Boundary amendment does not increase the potential direct or indirect effects on air quality at either of the site options.

Fugitive dust emissions generated by construction-related activities would depend on the size of area disturbed, the nature and intensity of construction activity, surface properties (such as the silt and moisture content of the soil), the wind speed, and the speed, weight, and volume of vehicular traffic. Fugitive dust emissions would be mitigated, if necessary, by spraying water to dampen the surfaces of dry work areas and/or by the application of dust suppressants as needed. Emissions from gasoline and diesel engines from construction equipment would be minimized because the engines must be built to meet the standards for mobile sources established by the EPA mobile source emission regulations (Title 40 CFR Part 85). In addition, the EPA requires the maximum

sulfur content of diesel fuel for highway vehicles be 15 parts per million. A summary of total potential construction emissions by year are presented in Table 3.4 below. Detailed emissions calculations are provided in Appendix A. Following completion of construction, the facility would undergo commissioning and startup phases, and then air quality impacts would transition to operational-phase emissions.

Table 3.4
Total Construction Emissions Summary

Year	Emissions (tons/year)							
	NO_x	**CO**	**SO_2**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**GHG (CO_2e)**	**HAPs**
2016	37.18	31.17	1.74	8.12	81.64	13.61	9,045.05	1.49
2017	26.07	18.81	0.99	6.81	7.09	2.74	6,875.35	1.34

The proposed action would involve operation of a biomass-to-fuel conversion plant in Lakeview, Oregon. The following stationary point and fugitive sources are included in the proposed action:

- Biomass receiving;
- Biomass handling and processing;
- Ash storage and loadout;
- Syngas compression and cleanup;
- Product synthesis and hydroprocessing;
- Gasifer/Steam Turbine (340 million British thermal units per hour [MMBtu/hr]);
- Cooling towers;
- Product storage tanks;
- Product load-out rack controlled by a flare;
- Start-up flare;
- Wastewater treatment;
- Auxiliary boiler (140 MMBtu/hr);
- (2) emergency firewater pumps, one diesel and one electric;
- CO_2 removal unit; and
- (2) Product upgrading heaters

3.2.3 Applicable Air Quality Rules

The CAA, as amended in 1977 and 1990, is the basic federal statute governing air pollution. In addition, state air quality rules are codified in Chapter 340 of the Oregon Administrative Code. The following state and federal air quality regulations apply to the proposed action:

- Prevention of Significant Deterioration (PSD) New Source Review;
- New Source Performance Standards;
- National Emission Standard for HAPs for Source Categories;
- General Conformity;

- GHG Reporting Rule;
- Chemical Accident Prevention Provisions; and
- State Regulations.

Federal PSD regulations apply in attainment areas to a major stationary source, (i.e., source with the potential to emit 250 tons per year (tpy) of any regulated pollutants), significant modifications to a major stationary source, and to individual facilities containing one of a list of category sources if the facility has the potential to emit 100 tpy of any criteria pollutant. EPA added additional PSD major source and major modification thresholds for GHGs under the tailoring rule. However, in a June 23, 2014 decision the Supreme Court determined that sources cannot be subject to PSD for GHGs alone. The proposed biofuels facility would have the potential to emit less than 100 tpy of all other criteria pollutants and less than 25 tpy of HAPs. Therefore, the proposed biofuels facility would not be considered a major source with respect to PSD regulations and GHG emissions would not be subject to PSD regulations. A summary of the potential emissions from the proposed stationary source is provided in Table 3.5 below. These emissions were calculated consistent with emission estimation methods required by the EPA and Oregon DEQ.

Table 3.5
Emissions Emissions Emissions

Emission Source	NO_2	CO	SO_2	PM [(a)]	PM_{10} [(b)]	$PM_{2.5}$ [(b)]	VOC	HAPs
Biomass Handling/Processing	0.0	0.0	0.0	1.78	0.84	0.14	0.0	0.0
Gasifier Heater	15.77	61.18	0.76	9.69	9.69	4.84	7.01	2.76
Auxiliary Boilers	6.56	16.03	0.20	2.54	2.54	1.51	1.83	0.73
Cooling Tower	0.0	0.0	0.0	0.03	0.03	0.03	0.0	0.0
Ash Handling	0.0	0.0	0.0	0.97	0.91	0.68	0.0	0.0
Startup Flare	2.22	8.12	0.51	0.16	0.16	0.13	2.85	0.31
Loadout Flare	0.21	0.18	0.001	0.02	0.02	0.02	0.01	0.23
Fire Pump	0.26	0.06	0.02	0.02	0.02	0.02	0.2	0.0
Generator	0.75	0.16	0.05	0.05	0.05	0.05	0.06	0.0
Fugitive VOC	0.0	0.0	0.0	0.0	0.0	0.0	8.53	7.41
Truck Traffic	0.0	0.0	0.0	0.71	0.14	0.03	0.0	0.0
Front End Loaders	1.08	9.46	0.00	0.06	0.06	0.06	0.51	0.0
Storage Tanks	0.0	0.0	0.0	0.0	0.0	0.0	1.86	1.22
Total Emissions	26.88	95.26	1.54	16.03	14.43	7.49	22.58	12.66
PSD SERs (tpy)	40	100	40	25	15	10	NA	NA
Over SER?	No	No	No	No	No	No	No	No

Notes:
The totals shown in this table may not equal the sum of addends due to rounding.
(a) Values include filterable emissions only
(b) Values include filterable and condensable emissions
NO_2 Nitrogen dioxide
CO Carbon monoxide
SO_2 Sulfur dioxide
PM Particulate matter
PM_{10} Particulate matter less than 10 microns in diameter
$PM_{2.5}$ Particulate matter less than 2.5 microns in diameter

Table 3.5 **Emissions Emissions Emissions**								
Emission Source	**NO_2**	**CO**	**SO_2**	**PM [(a)]**	**PM_{10} [(b)]**	**$PM_{2.5}$ [(b)]**	**VOC**	**HAPs**
VOC Volatile organic compounds HAPs Hazardous air pollutants								

In nonattainment areas, a separate procedure, Nonattainment New Source Review (NNSR), has been established for federal pre-construction air permit review of certain large proposed projects. NNSR applicability is determined separately and independently from PSD review. The proposed action would occur in Lake County, which is in attainment or maintenance for all pollutants. Therefore, NNSR would not apply to the proposed action.

The concentration of ambient $PM_{2.5}$ has recently exceeded the NAAQS in the Lakeview area. The Town of Lakeview and Lake County opted to participate in Oregon's sustainment area program, detailed in the proposed OAR 340-204-0300 as a method of attaining compliance with the NAAQS while avoiding the nonattainment designation. The sustainment area program encourages identification and mediation of the cause of the air quality problem while allowing for modest growth in the industrial sector so as not to negatively impact the economy of Lakeview. ODEQ determined that residential wood combustion accounted for 76% of particulate emissions in Lakeview, while permitted point sources, such as industrial stacks, accounted for 19%. The Lakeview Area Particulate Matter ($PM_{2.5}$) Advance Plan, implemented in September 2014, outlined methods to reduce emissions from residential wood stoves while allowing for a 31% increase in industrial point sources. By following the plan, Lakeview will achieve compliance with the NAAQS by 2019.

Title V of the CAA requires states to establish an air operating permit program. The requirements of Title V are outlined in 40 CFR 70. If a facility's potential-to-emit is equal to or greater than the criteria pollutant or HAP thresholds, the facility is considered a major source. The major source threshold for criteria pollutants is 100 tpy. The major source HAP thresholds are 10 tpy of any single HAP or 25 tpy of all HAPs in aggregate. Potential to emit for all pollutants are below major source thresholds, as shown in Table 3.5. Therefore, the facility would not be subject to Title V permitting.

The New Source Performance Standards (NSPS), codified in 40 CFR 60, require new, modified, or reconstructed sources to control emissions as specified in the applicable source category provisions. Any source that is subject to provisions under an NSPS subpart is also subject to the general monitoring, reporting, and record keeping provisions of NSPS Subpart A, except as noted in the applicable subpart. This section outlines the applicability of NSPS subparts for the Project facilities. Potentially applicable NSPS include Subpart Db (Industrial-Commercial-Institutional Steam Generating Units greater than 100 MMBtu/hr), Subpart Dc (Small Industrial- Commercial-Institutional Steam Generating Units equal to or less than 100 MMBtu/hr), Subpart Kb (Volatile Organic Liquid Storage Tanks), Subpart IIII (compression ignition engines), Subpart VVa

(Equipment Leaks of VOC from Synthetic Organic Chemical Manufacturing Industry), and Subparts NNN and RRR (Synthetic Organic Chemical Manufacturing Industry). These standards establish emission limits and requirements for control systems on subject sources. Compliance with these standards has been included in the design of the biofuels facility and would be documented through the air contaminant discharge permitting process with DEQ.

The National Emissions Standards for Hazardous Air Pollutants (NESHAPs), codified in 40 CFR 61 and 63, regulate the emissions of HAPs from existing and new sources. Part 61 NESHAP regulations apply to the following eight compounds listed as HAPs prior to the CAA Amendments of 1990: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chlorides. The emission sources included in the Project would not emit these pollutants; therefore, 40 CFR 61 NESHAP regulations would not apply. The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of 40 CFR 63 NESHAP (Part 63). Part 63, also known as the Maximum Achievable Control Technology standards, regulates HAP emissions specific source types located at major or area sources of HAPs. The only potentially applicable NESHAPs is Subpart ZZZZ (Reciprocating Internal Combustion Engines). Compliance with these standards has been included in the design of the biofuels facility and compliance would be documented through the air contaminant discharge permitting process with DEQ.

The chemical accident prevention provisions, codified in 40 CFR Part 68, are federal regulations designed to prevent the release of hazardous materials in the event of an accident and minimize potential impacts if a release does occur. The regulations contain a list of substances (including methane, propane, and ethylene) and threshold quantities for determining applicability to stationary sources. If a stationary source stores, handles, or processes one or more substances on this list in a quantity equal to or greater than specified in the regulation, the facility must prepare and submit a Risk Management Plan (RMP). An RMP is not required to be submitted to the EPA until the chemicals are stored onsite at the facility. The facility would not be subject to the requirements of 40 CFR Part 68.

If a facility does not have a listed substance on-site, or the quantity of a listed substance is below the applicability threshold, the facility does not have to prepare an RMP. However, if there is any regulated substance or other extremely hazardous substance onsite, the facility still must comply with the requirements of the General Duty Clause in Section 112I(1) of the 1990 CAA. The General Duty Clause is as follows:

“The owners and operators of stationary VOC sources producing, processing, handling and storing such substances have a general duty to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility, taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur.”

Stationary sources are defined in 40 CFR Part 68 as any buildings, structures, equipment, installations, or substance-emitting stationary activities that belong to the same industrial group, are located on one or more contiguous properties, and are under control of the same person (or persons under common control) from which an accidental release may occur. The facility is subject to the General Duty Clause.

The General Conformity Rule applies to areas designated as nonattainment or maintenance for criteria pollutants. The proposed biofuels facility would be located in a maintenance area for PM_{10}; therefore, a General Conformity Analysis would be required for the proposed action if the PM_{10} emissions were greater than 100 tpy from sources not subject to federal or state new source review permitting. For the proposed action, emissions to be analyzed for General Conformity are limited to non-permitted operational emissions (NPOE) and construction emissions. A summary of the NPOE and construction emissions for the proposed action are summarized in Table 3.6 below.

Table 3.6
Total Construction and Non-Permitted Project Emissions Summary

Year [(a)]	Emissions (tons/year)				
	NO_X	**SO_2**	**VOC**	**PM_{10}**	**$PM_{2.5}$**
2016 – Construction[(b)]	**37.18**	**1.74**	**8.12**	**81.64**	**13.61**
2017 – Construction	26.07	0.99	6.81	7.09	2.74
2017 – Operation (non-permitted)	7.53	0.02	0.79	0.32	0.47
2017 (Total)	**33.60**	**9,128.61**	**7.60**	**7.41**	**3.20**
2018 and Beyond – non-permitted operation[(c)]	**7.53**	**0.02**	**0.79**	**0.32**	**0.47**
Conformity Applicability Threshold	N/A	N/A	N/A	100	N/A

Notes:
Project construction would occur between 2015 and 2016, followed by operation of the facility.
Includes emissions from pipeline construction, which would occur for four months in 2016.
Includes fugitive dust and tailpipe emissions from worker commuter vehicles, feedstock acquisition vehicles, and delivery vehicles.
Not Applicable

On September 22, 2009, the EPA issued the Mandatory Reporting of GHG Rule that established GHG reporting categories for stationary sources. The category that may potentially apply to the proposed action (specifically the proposed biofuels facility) is general stationary fuel combustion sources (Subpart C). The Rule requires the source to report under Subpart C if it emits greater than or equal to 25,000 metric tons of GHG (as CO_{2e}) and has combined combustion equipment heat input rating at a location exceeds 30 MMBtu/hr. The proposed biofuels facility has the potential to emit greater than 25,000 metric tons CO_{2e}. In years that the proposed biofuels facility emits greater than 25,000 metric tons CO_{2e}, GHG reporting would be completed.

Oregon Department of Environmental Quality requires reporting of GHG (as CO_{2e}) if the facility emits greater than or equal to 2,500 metric tons of GHG. The biofuels facility will report annual GHGs to DEQ, as required.

Emissions from stationary sources in the state of Oregon are regulated by the DEQ. The DEQ rules are codified in OAR Chapter 340. These rules establish emission limits and control requirements. Compliance with these standards has been included in the design of the biofuels facility and compliance would be documented through the air contaminant discharge permitting process with DEQ.

As discussed above, the proposed action would result in construction and operational emissions. The construction emissions would be intermittent and temporary. Therefore, the construction emissions are not expected to have significant air impacts.

The potential operational emissions from stationary sources directly associated with the proposed action would be less than the federal significant emission rates (SERs) for all NAAQS pollutants. As such, these emissions are not expected to have a significant impact on air quality or air quality related values (visibility, deposition, etc.)

The proposed biofuels facility has the potential to emit approximately 300,000 tons of CO_{2e} annually primarily from the combustion of natural gas. The fuels produced by the proposed project meet the requirements of the Renewable Fuel Standard (RFS), 40 CFR Part 80, Subparts K and M, and are eligible to generate Renewable Identification Numbers (RINS). A carbon lifecycle analysis was conducted by EPA during the RFS rulemaking, which concluded certain biofuels, including biomass to fuel via the Fischer-Tropsch process, represent a reduction in GHGs over the production of conventional fuels. The lifecycle analysis is often referred to as well-to-wheel. The analysis included the quantity of greenhouse gas emissions from direct and indirect sources including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer. The analysis also included land use impacts specific to the collection and use of forest residue and by-products of high-value forest materials. Cellulosic diesel and jet fuel via the Fischer-Tropsch process were determined to generate significantly fewer GHG emissions than conventional production of diesel and jet fuel, thus the proposed project would have less than significant impacts on climate change.

Alternative Site
Air quality impacts would be the same at either site option chosen.

3.2.4 No-Action Alternative

Under the no-action alternative, construction and operation of the proposed biofuels project and the Urban Growth Boundary amendment would not occur, thus would not result in impacts to air quality, meteorology or climate change at either site option or associated pipeline corridor.

3.3 WATER RESOURCES

3.3.1 Proposed Action(s)

The facility would include more than 130,000 square-feet of impervious surfaces. During storm events, impervious surfaces convey stormwater more efficiently than undisturbed areas. Stormwater runoff can increase volumes and concentrate flows and impact surrounding surface waters. As a best management practice, a stormwater retention pond would be designed and constructed to accommodate stormwater runoff volumes from a 1-inch, 24-hour rainfall event.

At either site option, the facility would connect to the Town of Lakeview's municipal water and wastewater system, which has the capacity to accommodate the volumes of water withdrawal and discharge. Water withdrawal for normal facility operations is estimated to be 100 gallons per minute (gpm) for an air-cooled plant design. Water discharged from the facility is anticipated to be 54 gpm, as dictated by the design alternative selected. The facility would not need a surface water appropriations permit or an industrial NPDES permit because it would be connected to a municipal water and wastewater system.

3.3.2 Current/Baseline Resource State

Surface Water Quality

Lake County contains all or parts of twelve different watersheds, including Little Deschutes, Beaver-South Fork, Lower Crooked, Williamson, Sprague, Lost, Silver, Summer Lake, Lake Abert, Warner Lakes, Guano, and Goose Lake (EPA, 2013). The Little Deschutes, Beaver-South Fork, and Lower Crooked watersheds form part of the larger Deschutes Basin, a major tributary to the Columbia River Basin to the north. The Williamson, Sprague, and Lost watersheds form part of the Klamath River Basin, which drains southwest into northern California and to the Pacific Ocean. The Silver, Summer Lake, Lake Abert, Warner Lakes, Guano and Goose Lake watersheds are all endorheic, or closed, basins, and have no outflow under normal conditions.

The Town of Lakeview is located within the Goose Lake watershed, a subbasin approximately 1,140 square miles in area. The watershed is classified by the U.S. Geological Survey (USGS) as a part of the Sacramento River Basin (USGS, 2013), and is considered by the Oregon DEQ as a part of the Oregon Closed Lakes Basin. Bullard and Deadman creeks cross Lakeview in an east- to-west direction, and flow west from the Fremont National Forest located east of town. Both creeks form a part of the Lower Thomas Creek Watershed, which is a tributary to Thomas Creek.

The Preferred Site lies within the nearly 20,000-acre Lower Thomas Creek Watershed. Surface water from the site generally flows to one of the property's wetlands where it would typically evaporate or infiltrate into the ground. Under wet conditions, surface water could flows within the large wetland complex on the property in a southwesterly direction toward Thomas Creek, located approximately 1.5 miles from the proposed site. The new rail spur design facilitates a culvert allowing the proposed storm water retention pond outflow to complement the wetland surface flow

into Thomas Creek and ultimately empty into the northern shore of Goose Lake approximately 6.5 miles southwest of Lakeview. Under normal conditions, no flowing waterbodies (i.e., streams, rivers, or lakes) exit the property of the Preferred Site; however, a spring and small stream are located outside the proposed facility's footprint near the property's southern boundary.

The Alternative Site is also within the Lower Thomas Creek Watershed. The eastern and southern boundaries of this site have a NWI-classified riverine system 1.67 acres in area. Surface water from the site moves to either the riverine system bordering the eastern and southern perimeters of the Alternative Site or to the NWI wetland on the western boundary. The system flows south approximately 2 miles and continues west for 0.5 miles to merge with Thomas Creek. No other waterbodies are located within the property boundaries.

The CWA §303(d) requires that each state review, establish, and revise water quality standards for all surface waters within each state. To comply with this requirement, each state has developed its own beneficial use classification system to describe state-designated uses, and numeric water quality standards for each use. Waters that fail to meet the standards for the designated beneficial uses are considered impaired and are listed under the state's 303(d) list of impaired waters.

The state of Oregon has developed water quality standards to protect the beneficial uses of the State's waters. The beneficial uses identified by the state are domestic water supply, fishing, industrial water supply, boating, irrigation, water contact recreation, livestock watering, aesthetic quality, fish and aquatic life, hydropower, wildlife and hunting, and commercial navigation and transportation (Oregon DEQ, 2013).

Thomas Creek was listed as an impaired waterbody on Oregon's 2010 303(d) list. The pollutants listed include dissolved oxygen, iron, temperature, and biological criteria. Beneficial uses impacted are human health, and fish and aquatic life. A Total Maximum Daily Load study has not been completed for Thomas Creek. No activities related to the construction or operation of the proposed facility would occur within 1 mile of Thomas Creek.

The EPA lists no significant environmental activities affecting surface or groundwater at the Preferred or Alternative Site. Two Conditionally Exempt Small Generators and one non-classified generator of hazardous waste (two Bureau of Land Management offices and a door manufacturing company) are located within 1 mile of the Preferred and Alternative Site. The Lakeview Sewage Treatment Facility is located within 1 mile of the Alternative Site.

Groundwater Quality

The primary aquifers in the region are comprised of Holocene sedimentary deposits, including lacustrine, alluvium, and alluvial fan deposits, Pleistocene near-shore deposits, and Pliocene to Pleistocene lava flows. Holocene deposits typically reach up to 1,000 feet in thickness. Groundwater recharge occurs in upland areas through permeable Pliocene to Pleistocene basalt flows, and flows toward the valley, recharging the sedimentary aquifers. This recharge occurs most

in mountains lying along the western boundary of the basin and the Warner Mountains to the east (Goose and Summer Lakes Basin Local Advisory Committee, 2007).

The Oregon Water Resources Department (2013) identified three wells within 3 to 5 miles of the site options ranging from 110 to 800 feet in depth. All three wells were screened in sediments deposited within the basin. Water levels for the wells occur near the ground surface, ranging from approximately 10 to 40 feet below the ground surface. This suggests that, although the water table occurs relatively close to the ground surface, aquifers are also present at depth. However, the degree of confinement and hydraulic isolation of the lower aquifer(s) is unknown. While water level measurements are not available to determine groundwater flow directions, the closed basin serves as a discharge zone for groundwater from the higher areas to the west and east. A southerly component of groundwater flow likely exists below the sites, with groundwater flowing towards Goose Lake, which is interpreted to serve as a regional discharge zone within the basin.

Floodplains

Floodplains are defined in EO 11988 as "the lowlands and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year." E.O. 11988 directs federal agencies and the activities undertaken or authorized by them, to reduce the risk of flood loss and to minimize flood impacts on human inhabitants of an area.

To characterize the varying levels of flood risk and type of flooding, Federal Emergency Management Agency (FEMA) developed Flood Zones, an alpha and/or alphanumeric coding system distinguishing levels of risk within four separate Risk Areas: Special Flood Hazard Areas – High Risk, Coastal High Hazard Areas – High Risk, Moderate and Minimal Risk Areas, and Undetermined Risk Areas (FEMA, 2013).

According to FEMA's Flood Insurance Rate Map, the Town of Lakeview's corporate limits encompass an area of approximately 973 acres, 100 percent of which is designated in different FEMA Flood Zones. Just over 2 percent of Lakeview (21 acres) is characterized as Special Flood Hazard Areas – High Risk, just under 34 percent (326 acres) is considered Moderate Risk Areas, and just over 64 percent (626 acres) is considered Minimal Risk Areas. Figure 3.1 illustrates the extent of the flood zones found in the project area, which were modified by FEMA Letter of Map Revision finalized May 2016. Descriptions for applicable FEMA Flood Zones are presented in Table 3.7.

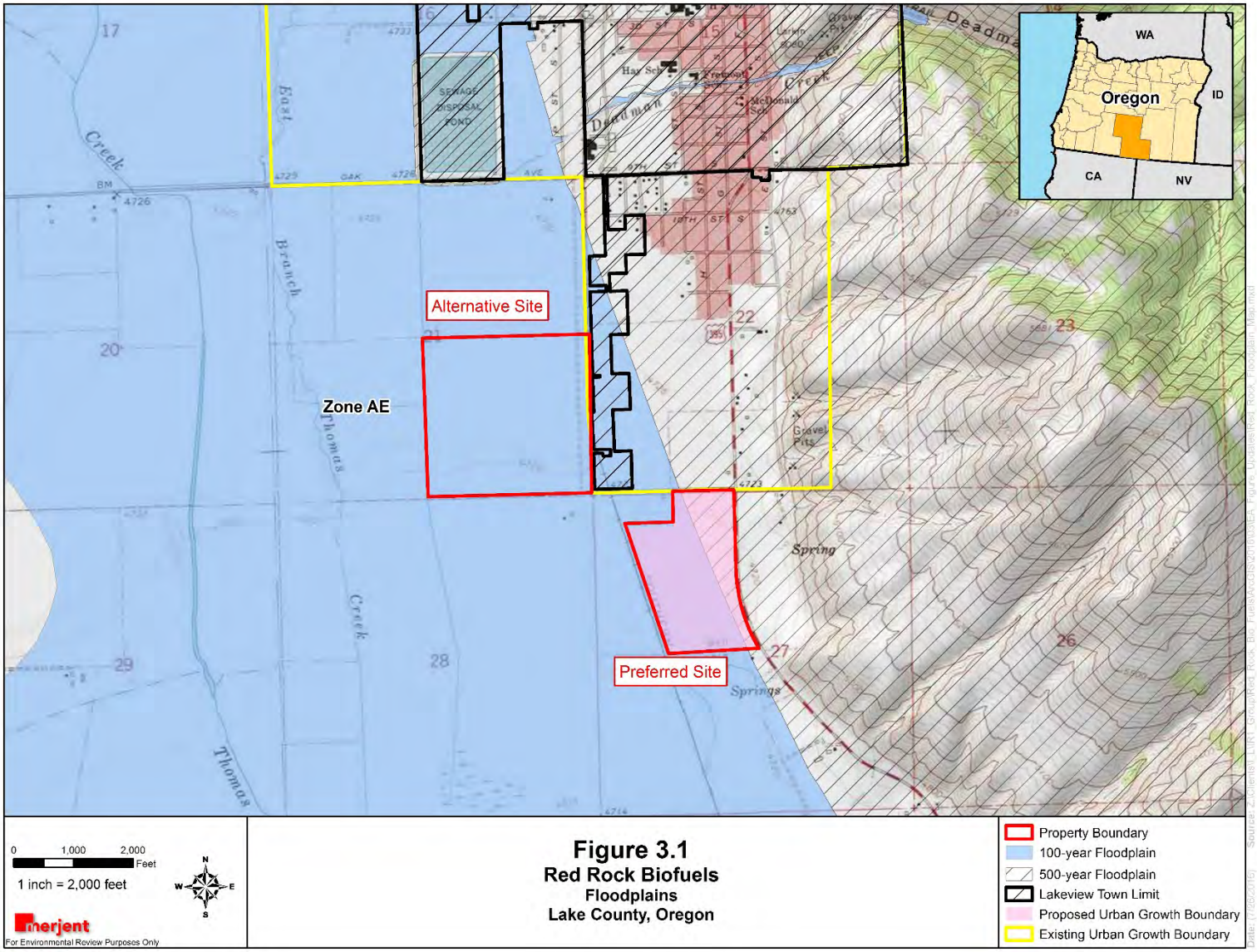


Figure 3.1
Red Rock Biofuels
Floodplains
Lake County, Oregon

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Table 3.7 FEMA Flood Zones – Town of Lakeview, Oregon			
FEMA Flood Zone Risk Area	**Area (acres)**	**Town Area (%)**	**Summary Description**
Special Flood Hazard Area: High Risk (A)	14.8	1.5	These are areas in the 100-year or base floodplain. There are six types of A Zones.
Special Flood Hazard Area: High Risk (AE)	6.0	0.6	The base floodplain where base flood elevations are provided.
Moderate Risk Area: (X – Shaded[1])	326.4	33.6	Moderate risk areas usually the area between the limits of the 100-year and 500-year floods.
Minimal Risk Area: (X – Unshaded[1])	625.6	64.3	Minimal risk areas, usually depicted on FIRMs as above the 500-year flood level.
Total	972.79	100.00	

1 "Shaded" and "Unshaded" refer to the classification that FEMA has assigned to the X flood zone.
Source: FEMA Map Service Center.

3.3.3 Resource Impacts and Consequences due to Proposed Action

Preferred Site

The Preferred Site lacks surface water features onsite and connectivity to surface water features in the vicinity of the site. Typical stormwater and runoff from the site would be managed by the proposed retention pond. Source water for facility operations would be drawn from the municipal water supply. Process waters would not be discharged directly into surface waters, but instead would be treated at the municipal wastewater treatment plant. Under normal conditions, because surface waters do not exit the site nor surface waters close to the Preferred Site, direct impacts on off- site surface water quality would be unlikely and negligible. Impacts on groundwater quality would be unlikely as Red Rock would manage hazardous or toxic wastes (such as off-specification fuel or lubricating oil) in accordance with applicable regulations and documented in formal spill prevention and mitigation measures. Accidental spills or leaks of hazardous materials associated with vehicle fueling, vehicle maintenance, and material storage typically present the greatest potential contamination threat to groundwater resources. The site does not overlay a groundwater recharge zone of special significance, thus in the unlikely event of infiltration of a pollutant, the impact would be negligible given the relatively small facility footprint.

The Preferred Site is partially within and the Alternative Site is completely within a FEMA designated Special Flood Hazard Area – High Risk, specifically within Zone AE (Figure 3.1). According to FEMA, Special Flood Hazard Areas are areas where the National Flood Insurance Program's floodplain management regulations must be enforced and the mandatory purchase of flood insurance applies. These areas are subject to inundation by the 100-year flood; structures located within the Special Flood Hazard Area have a 26-percent chance of flooding during the life of a standard 30-year mortgage. The only permanent structures associated with the proposed project that would be within the 100-year flood hazard zone, as delineated by FEMA, would be a portion of the biomass storage and handling area, the tank farm surrounded by a dike, the

stormwater detention basin, and the rail spur. FEMA-mapped floodplains are shown in Figure 3.1. The project would add approximately 1 acre, or 43,560 square feet, of structure to the floodplain. Direct impacts would not increase flood hazards in the area. Encroachment of floodplains can diminish or impair the natural functions of the floodplain by decreasing the capacity for the area to convey floodwaters, which increases the potential for flood hazards. However, the amount of floodplain that would be impacted by the biomass plant facilities and spur rail would not result in any changes in base flood elevations for any adjacent areas. There would be no significant encroachment [as defined in 23 CFR Section 650.105(q)] on floodplains within the Preferred Site. Local and state permitting conditions would be met and permits obtained prior to construction. The Urban Growth Boundary amendment does not increase the potential direct or indirect effects on floodplains or water resources at the Preferred Site.

Construction and operation of the proposed pipeline lateral would not impact infiltration to groundwater. The proposed pipeline lateral would transport natural gas, therefore no significant impacts on groundwater would occur in the event of a pipeline leak. The proposed rail spur for both sites also would not negatively impact groundwater resources. The facility would be required to implement spill containment structures for fuel and chemical storage, product loadout and rail loadout as part of the SPCC Plan. In the unlikely event a spill occurs with loaded railcars, the spill would be addressed in accordance with the SPCC Plan and Facility-Specific Response Plan.

Wetlands are located on the 87.7-acre parcel; however, a wetland delineation conducted in April and June 2012, and August 2014 confirmed the major facility components would not affect delineated wetlands. The Oregon Department of State Lands (DSL) approved the delineations on February 22, 2013 and February 3, 2015, respectively. Delineated wetlands are located along the western edge of the parcel where the proposed pipeline lateral would connect to the site. Necessary permits would be obtained to construct and maintain utility lines in these wetlands.

Alternative Site

Runoff from normal stormwater events would not have an impact on nearby surface waters as it will be captured by the proposed storm water retention pond. Uncaptured stormwater runoff could have a minor impact on nearby surface waters, including Thomas Creek, by way of infiltration into nearby wetlands through the existing riverine drainage system at the southern lot boundary and Western landscape slope toward an unnamed ditch that drains into the Lower Thomas River. The distance from the facility site to the Lower Thomas river mouth is a mile less than the Preferred Site, increasing ground and river water contamination risk if there is an accidental release.

The site lies within the main body of the Goose Lake 100 year floodplain. It lies approximately 3500 feet immediately south of Lakeview's wastewater treatment facility which is elevated above the floodplain and may aid in buffering and deflecting floodwater from the facility.

No-Action Alternative

Under the no-action alternative, construction and operation of the proposed biofuels project would not occur, thus would not result in impacts on water resources at either site option or associated pipeline corridor. The no-action alternative would not result in any changes to the baseline conditions relative to floodplains, water resources, or wetlands. Water resources including floodplains could be affected due to additional impervious surface area as residential, industrial, and commercial development occurs.

3.4 BIOLOGICAL RESOURCES

3.4.1 Proposed Action(s)

The proposed action would require clearing vegetation from the 54-acre facility footprint, the temporary workspace for construction of the proposed pipeline lateral, and the temporary workspace and permanent right-of-way for the rail spur.

3.4.2 Current/Baseline Resource State

Both site alternatives and the proposed natural gas pipeline lateral are located within the Klamath/Goose Lake Basin of the Eastern Cascades Slope and Foothills Ecoregion (EPA, 2012).

Vegetation

The plant communities found in the Klamath/Goose Lake Basin ecoregion are shaped by its location in the rainshadow of the Cascade Mountain range. This causes the area to receive less precipitation and experience greater temperature extremes. Vegetation is adapted to dry climate and frequent fire (LandScope America, 2013). Annual precipitation totals 10-20 inches autumn through spring and summers are typically hot and arid (Anderson et al., 2011). The foothills are primarily characterized by forests of ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta*), juniper (*Juniperus spp.*), and white fir (*Abies concolor*) (LandScope America, 2013). Drought, fire suppression, overgrazing, and logging have contributed to significant changes in the vegetation of the area. Ponderosa and lodgepole pine stands are typically well-spaced with large trees and sparse shrubs such as sagebrush (*Artemsia spp*). These stands have become less common with human encroachment, and now more uniform stands of white fir and/or juniper are more common (Anderson et al., 2011).

Non–forested plant communities of the region are characterized as:

- Bluegrass dry meadow (Poa spp.);
- Hairgrass (Eleocharis spp.) Sedge-Moist-Meadow;
- Sedge (Carex spp.)-Wet Meadow;
- Big Sagebrush/Bunchgrass (Festuca idahoensis);
- Juniper/Low Sagebrush;
- Low Sagebrush/Fescue (Festuca spp.) Squirreltail (Elymus elymoides);

- Ponderosa Pine-Quaking Aspen (Populus tremuloides)/Bluegrass; and
- Ponderosa Pine/Mountain Big Sagebrush/Bluegrass (Oregon Department of Fish and Wildlife [ODFW], 2013).

The nearby Goose Lake Basin area was traditionally covered by wild rye (*Elymus canadensis*), bluegrass and wheatgrass (*Agropyron* spp.), but drainage of most of the wet meadows has modified this to cultivated vegetation and less hydrophytic vegetation (Landscope, 2013).

Wildlife

The habitat of the Klamath/Goose Lake Basin (EPA, 2012), supports wildlife such as bald eagle (*Haliaeetus leucocephalus*), several species of raptors, ducks and geese, mule deer (*Odocoileous hemionus*), elk (*Cervus canadensis*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), badger (*Musteloidea* spp.), bobcat (*Lynx rufus*), coyote (*Canis latrans*), skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), jackrabbit (*Lepus* spp.), cottontail rabbit (*Silvilagus* spp.), and several species of rodents. Many species of amphibians and reptiles such as the rough-skinned newt (*Taricha granulosa*), Cascade frog (*Rana cascadae*), and sagebrush lizard (*Sceloporus graciosus*) also inhabit this area (USFWS, 2013).

Neotropical Migratory Birds

Neotropical migratory birds are those that breed in the United States and winter south of the border in Central or South America. In the Klamath/Goose Lake Basin ecoregion neotropic migrants such as the western meadowlark, willow and least flycatchers, barn and tree swallows, American robin, western bluebird, and calliope and black-chinned hummingbirds fall in this category (Oregon Department of Fish and Wildlife 2016). Most other neotropical bird species are included in the resident category. Nationwide declines in population trends for neotropical migratory birds have developed into an international concern.

Special Status Species

Federal

Federally listed species under the Endangered Species Act of 1973 (ESA) potentially occurring within the project area were found using the Information for Planning and Conservation (IPaC) online system on the USFWS website. The species habitats were evaluated via desktop analysis to determine if potential habitat exists within the project area. Ten federally listed species have been documented in Lake County (Table 3.8). Consultations with USFWS followed on November 27, 2013 stating its preliminary determination of "no effect" on federally listed species. The USFWS responded on December 10, 2013 concurring with our assessment that no federally listed species or critical habitat occurs within the project area. Chapter 7 includes a copy of the consultation letter and USFWS response.

State

Under Oregon state law (ORS 496.171-496.192) the Oregon Fish and Wildlife Commission (Commission), through the ODFW, maintains a separate list from the USFWS of native wildlife

species in Oregon that have been determined to be either "threatened" or "endangered" according to criteria set forth by rule (OAR 635-100-0105). Four fish species, two mammals, and one bird were identified by ODFW as being known to occur in Lake County (Table 3.8). Plant listings are handled through the Oregon Department of Agriculture and most invertebrate listings are handled through the Oregon Biodiversity Information Center. The ODFW requires compliance with established endangered species management plans for all listed species. In the absence of a management plan, consultation with the ODFW is required. On April 16, 2014, ODFW was consulted. No formal response has been received, nor is expected because the project is located on private land and consultation with USFWS has occurred. Chapter 7 includes a copy of a phone record with ODFW and a copy of the consultation letter.

Table 3.8
Oregon Listed Threatened and Endangered Species within Lake County

Scientific Name	Common Name	Federal Status [a]	State Status [b]
Fish			
Catostomus warnerensis	Warner sucker	NA	Threatened
Chasmistes brevirostris	Shortnose sucker	Endangered	Endangered
Gila bicolor ssp.	Hutton tui chub	Threatened	Threatened
Catostomus microps	Modoc sucker	Endangered	NA
Rhihichthys osculus ssp	Foskett speckled dace	Threatened	Threatened
Plant			
Tuctoria greenei	Green's tuctoria	Endangered	NA
Orcuttia tenuis	Slender Orcutt grass	Threatened	NA
Amphibian			
Rana pretiosa	Oregon spotted frog	Threatened	NA
Bird			
Charadrius nivosus nivosus	Western snowy plover	NA	Threatened
Coccyzus americanus	Yellow-billed cuckoo	Threatened	NA
Mammal			
Gulo gulo	Wolverine	NA	Threatened
Lynx canadensis	Canada lynx	Threatened	NA
Canis lupus	Gray wolf	Endangered	Endangered

a http://ecos.fws.gov/ipac/
b http://orbic.pdx.edu/documents/2013-rte-book.pdf

The Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act are implemented by the federal government. Bald eagles use this ecoregion heavily as a wintering ground along with millions of migratory waterfowl that use the area as a stop along their migratory route. Multiple species of ducks and geese also stopover in this area during their migration.

Wetlands

The Oregon Closed Lakes Basin encompasses Lake County and covers approximately 6 million acres. The nine major watersheds of the Closed Lakes Basin, including the Goose Lake watershed,

contain approximately 500,000 acres of wetlands, or approximately 8.3 percent of the total basin area. Wetland communities are important breeding, nesting, and migration areas for waterfowl, shorebirds, and marsh and riparian birds, and provide habitat for endemic fish, amphibians, and a variety of invertebrates and native plants (Lev et al., 2012).

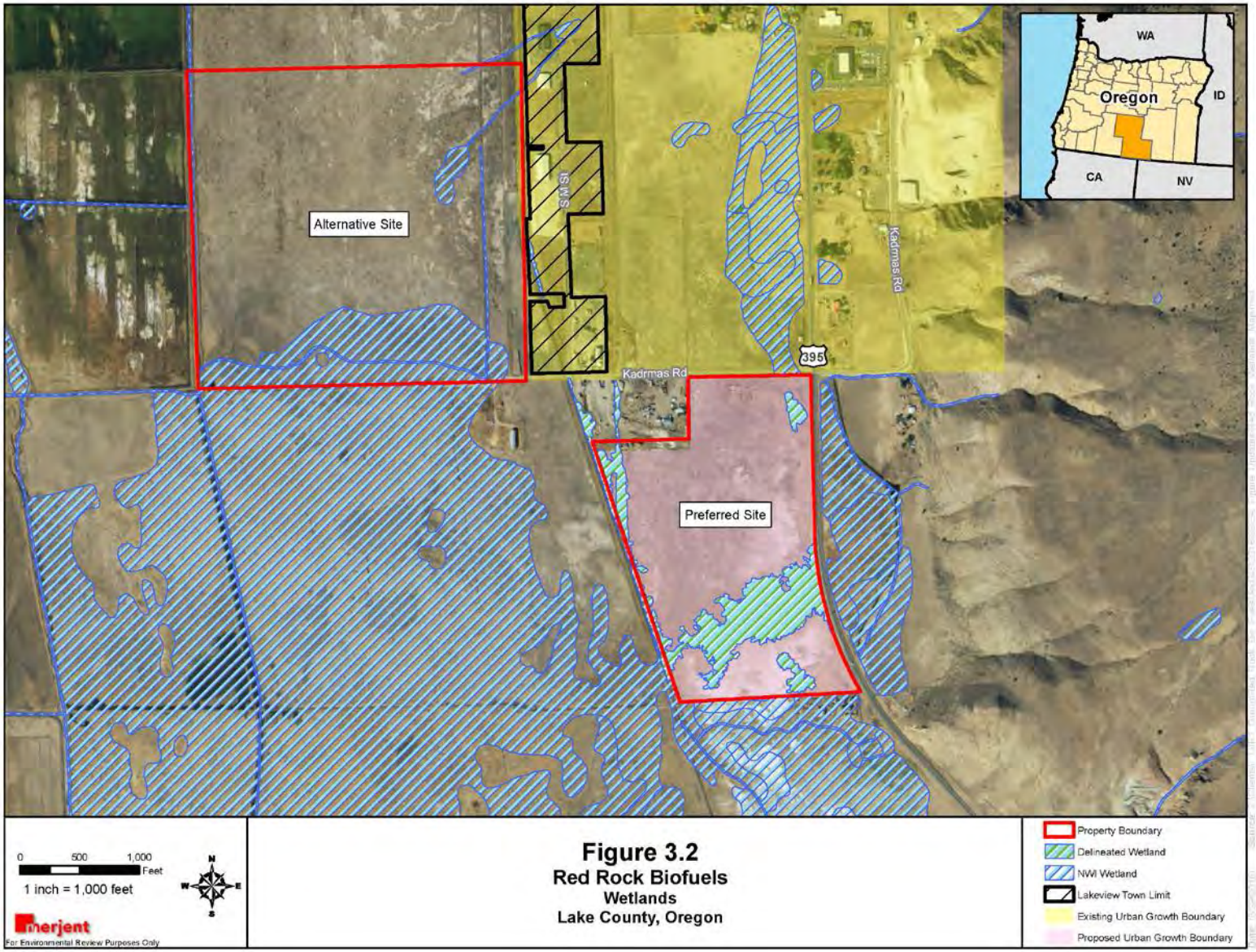
EO 11990, Protection of Wetlands, and Section 404 of the CWA require federal agencies to avoid and minimize adverse impacts on wetlands. The regulatory definition of wetlands is "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances to support, a prevalence of vegetation typically adapted for like in saturated soil conditions" (33 CFR §328.3[b]). Identification of wetlands is based on a formal field wetland delineation on the Preferred Site and on the NWI mapping on the Alternative Site and along the proposed pipeline lateral route (Figures 3.2 and 3.2-1).

The wetlands located within the Preferred Site were delineated in 2012 and 2014 using the USACE Manual as supplemented by the Arid West Regional Supplement. The 2012 delineation indicate the presence of two emergent wetlands. The larger of the two is a 17.70-acre emergent, seasonally flooded wetland. This wetland stretches from the eastern boundary of the Preferred Site at US Highway 395 in the southern half of the parcel to the southwestern boundary; it then follows a narrow swath to the northwest, paralleling the railroad to the northwestern extreme of the property. This wetland is part of a 3,319-acre wetland complex, the majority of which is to the west and southwest of the proposed property. The other wetland on this site is also part of a larger wetland complex 15.2 acres in size, with 1.10 acres located on the Preferred Site. This emergent, temporarily flooded wetland is located on the southern end of the Preferred Site boundary. The 2012 Study observed that both wetlands are hydrated by surface runoff in addition to existing natural springs located to the south of the wetland areas (2012). The two wetlands located within the Preferred Site are assumed to be USACE-jurisdictional because of the significant nexus with the existing natural springs. The Oregon DSL approved the wetland delineation report February 22, 2013.

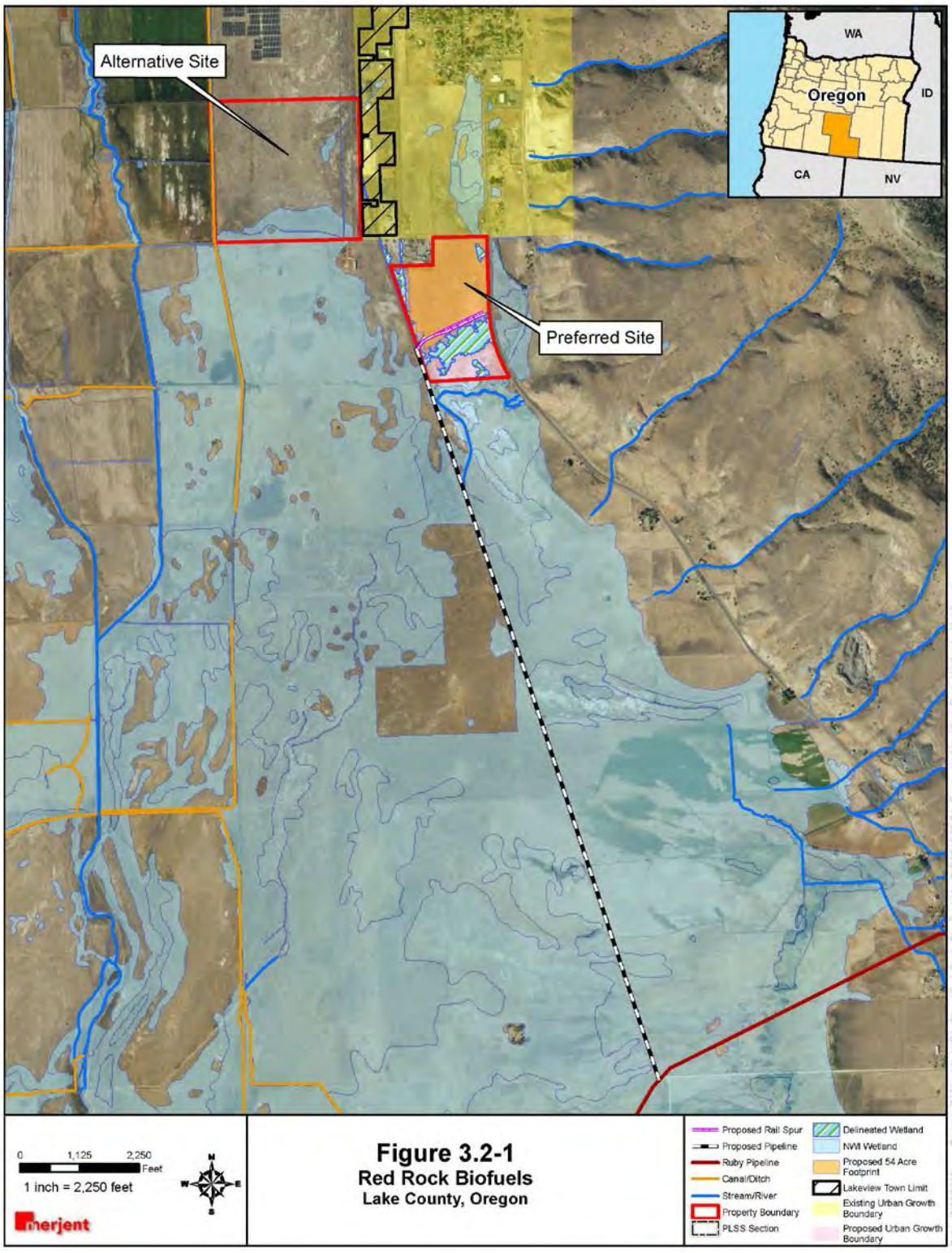
Results of the 2014 delineation indicate the presence of another wetland, approximately 0.7-acre in size, in the northeastern corner of the property. This wetland delineation was emergent, seasonally flooded, and also hydrated by surface runoff (2014). The Oregon DSL approved the wetland delineation report February 3, 2015 and the USACE issued a Preliminary Jurisdictional Determination letter May 19, 2015.

A formal wetland delineation has not been completed on the Alternative Site or along the pipeline corridor. However, NWI maps identify several wetland types including freshwater emergent; freshwater pond; emergent, temporarily flooded; and emergent, seasonally flooded (Figures 3.2 and 3.2-1). The wetlands within the Alternative Site are confined to the southern, western, and eastern extremes of the property (Figure 3.2). An emergent, seasonally flooded wetland of 10.7 acres (part of the large 3,319 acre wetland complex) covers the southern boundary, and an emergent, temporarily flooded wetland of 15.1 acres is adjacent to the emergent, seasonally

flooded wetland, immediately to the north. These two wetland systems are divided by a 1.67-acre riverine system that also borders the eastern boundary of the property. Another emergent, temporarily flooded wetland of 2.2 acres lies near the eastern boundary at the center of the property, while a 0.9-acre emergent, seasonally flooded wetland runs along the western perimeter. This system, in addition to the riverine system, acts as a water conveyance system along the property boundaries.


Alternative Site
Preferred Site
S Main St
Kadrmas Rd
Kadrmas Rd
395
WA
Oregon
ID
CA
NV
0
500
1,000
Feet
1 inch = 1,000 feet
N
W
E
S
Emerjent
For Environmental Review Purposes Only
Figure 3.2
Red Rock Biofuels
Wetlands
Lake County, Oregon
Property Boundary
Delineated Wetland
NWI Wetland
Lakeview Town Limit
Existing Urban Growth Boundary
Proposed Urban Growth Boundary

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Alternative Site
Preferred Site
WA
Oregon
ID
CA
NV
0 1,125 2,250
Feet
1 inch = 2,250 feet
N
W
E
S
Figure 3.2-1
Red Rock Biofuels
Lake County, Oregon
Proposed Rail Spur
Proposed Pipeline
Ruby Pipeline
Canal/Ditch
Stream/River
Property Boundary
PLSS Section
Delineated Wetland
NWI Wetland
Proposed 54 Acre Footprint
Lakeview Town Limit
Existing Urban Growth Boundary
Proposed Urban Growth Boundary

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3.4.3 Resource Impacts and Consequences due to Proposed Action

Impacts on biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to proposed activities, and (4) the duration of ecological impacts. A habitat perspective is used to provide a framework for analysis of general classes of impacts (e.g., noise, human disturbance).

The proposed project could directly or indirectly cause potential impacts on biological resources. Direct impacts were evaluated by identifying the types and locations of potential ground disturbing activities in correlation to biological resources. Indirect impacts were evaluated by identifying potential habitat damage or degradation of habitats that could be associated with construction.

Preferred Site
Vegetation at the site options is largely comprised of grassland. Both the Preferred and Alternative Sites include additional vegetation acreage within the property boundary outside of the 54-acre facility footprint where actual ground disturbing activities would occur. Disturbed areas within the site that are not developed would be re-vegetated following construction activities. During construction of the lateral pipeline, an additional 17 acres of vegetation within the 100-foot railroad right-of-way could be disturbed. Impacts on vegetation from the proposed construction activities would be minor. Including the Preferred Site into the Urban Growth Boundary would not increase potential impacts on vegetation.

Direct impacts from construction of the proposed project would be the cutting, clearing, and removal of existing vegetation within the construction workspace for the facility, the rail spur, and the pipeline lateral. Impacts on grassland and shrub-type communities within the pipeline construction workspace would be short term as these vegetation types would return to their herbaceous status within one to three growing seasons after the completion of construction, cleanup, and effectively implemented restoration to reduce potential erosion. Although, permanent impacts on vegetation would occur, there are no pristine areas of vegetation with a high floristic quality that would be impacted within the 54-acre facility footprint. To prevent the introduction of identified noxious weeds and invasive species into the project area, construction equipment will be cleaned prior to arriving on site. This cleaning consists of removing visible dirt from the equipment and blowing loose material from equipment using compressed air. Furthermore, a revegetation plan will be prepared for disturbed areas, describing controlling the spread of invasive and noxious weeds, and minimizing the potential for erosion.

Most wildlife species that occur within the proposed project area are adapted to living in disturbed areas and co-existing with human activity. Many of these same species are also mobile generalist species that use a variety of interspersed and fragmented habitats and range over wide areas for food and cover. The most common species that may occur within the project area are small mammals and migratory birds. Transporting feedstock to the facility could result in a temporary

disturbances to wildlife species as the renewable biomass is removed. Therefore, it is anticipated that most wildlife species would be able to avoid the construction disturbance associated with the proposed project by relocating to adjacent minimally disturbed areas. Earth-moving activities and the transport of renewable biomass could result in some unavoidable mortality to burrowing and less mobile fauna, but these impacts would be negligible. Impacts on wildlife from construction activities would be negligible to minor.

To minimize impacts on bald eagles, the construction contract will require compliance with the USFWS' Bald Eagle Management Guidelines (USFWS, 2007).

Impacts on wetlands would be avoided by the proposed facility components within the 54-acre footprint by not siting proposed facility components on wetlands. Where components may be located near wetlands, erosion control best management practices would be used to mitigate and avoid potential impacts.

Temporary construction impacts on palustrine emergent (PEM), palustrine scrub shrub (PSS), and palustrine forested (PFO) wetlands would occur along the proposed pipeline lateral corridor; however, following placement of the pipeline, wetlands would be restored to preconstruction conditions and no permanent loss of wetland would occur. During construction of the pipeline, the project would implement spill prevention procedures to avoid spills related to fuel storage and equipment refueling, equipment leaks etc. The spill prevention and stormwater pollution prevention plan would include response and cleanup actions should a spill occur.

Minor impacts on wetlands would occur where the rail spur is located within the proposed 54-acre facility footprint. It is anticipated that project activities would result in the loss of less than 0.5 acre of waters of the U.S. for installation of the proposed rail spur. Wetland mitigation for the rail spur and the pipeline lateral would be in accordance with the USACE and DSL permit stipulations. There will be no additional temporary or permanent impacts on wetlands within the 54-acre facility footprint.

Alternative Site

The Alternative Site location has not had an approved wetland delineation completed. Although the NWI wetlands that occur on the southern portion of the parcel would likely be avoided, similar to the Preferred Site, permanent impacts on wetlands would likely occur where a rail spur would be located. Construction of the approximately 3.5 mile natural gas pipeline could disturb approximately 22 acres of vegetation within the 100-foot railroad right-of-way. Restoration of disturbed areas would be the same as those described for the Preferred Site.

No-Action Alternative

Under the no-action alternative, construction and operation of the proposed biofuels project and the Urban Growth Boundary amendment would not occur, thus would not result in impacts on biological resources at either site option or associated pipeline corridor.

3.5 CULTURAL RESOURCES

Section 106 of the NHPA, as amended, requires the lead federal agency to take into account the effects of its undertakings on historic properties or historic resources that are listed in, or eligible for listing in, the NRHP, and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment if there would be adverse effects on NRHP-eligible properties. Historic properties are defined as prehistoric or historic districts, sites, buildings, structures, objects, or properties of traditional religious or cultural importance, which are listed or eligible for listing in the NRHP, including artifacts, records, and material remains related to such a property or resource.

The Air Force, as the lead federal agency, is responsible for the review consistent with Section 106 of the NHPA as it relates to both public and private lands affected by the project. Section 101(b)(3) of the NHPA provides each SHPO a prominent role in advising the responsible federal agencies and ACHP. A Phase I cultural resources inventory report has been submitted and approved by the Oregon SHPO. See Chapter 5.

The Air Force has finalized the MOA with the SHPO (See Appendix B), which discusses the responsibilities of the Air Force and Red Rock regarding Section 106 compliance, along with a Treatment Plan, Construction Monitoring Plan, and Unanticipated Discovery Plan. The Air Force, as the lead federal agency, is required to consult with federally recognized tribes under broad perspective of Executive Order 13175. The following federally recognized tribes were consulted: the Klamath Tribes, Burns Paiute Tribe, Confederated Tribes of Warm Springs, the Fort Bidwell Indian Community of the Fort Bidwell Reservation of California, and the Pit River Tribe. Regarding Native Active Graves Protection and Repatriation Act (NAGPRA), the excavation and inadvertent discovery provisions of the act apply to federal and tribal lands (i.e., lands including private lands within the exterior boundaries of an Indian reservation) National Park Service, 2012). Specific to the project, neither site is classified as federally owned or involves federally designated tribal lands; therefore, the Archaeological Resources Protection Act and NAGPRA are referenced for completeness but not applicable to this proposed action.

3.5.1 Proposed Action(s)

The proposed action would require land clearing and excavation activities on the 54-acre facility footprint, the temporary workspace and permanent right-of-way for construction of the proposed pipeline lateral, and the temporary workspace and permanent right-of-way for the rail spur. A new industrial biomass facility would be established immediately outside the Town of Lakeview in Lake County, Oregon. The proposed facility would include new structures up to approximately 35 feet tall with stacks up to 100 feet tall for venting emissions. Several fuel and water storage tanks and a woody biomass storage, processing, and handling area would also be located within the facility boundary.

As part of construction, an Unanticipated Discovery Plan addresses measures that would be taken if cultural resources or human remains were inadvertently discovered during construction. While

unlikely, excavations and trenching could uncover unmarked graves or other potentially significant cultural items. If this occurred, construction activity would cease within an appropriate radius (no less than 50 feet from the discovery) until an archaeologist qualified under 36 CFR Part 61 could examine the exposed resource and notify the Oregon State Historic Preservation Office (SHPO). Tribes would be notified immediately if a grave were determined to have the potential to contain American Indian remains. The Air Force and SHPO would approve this plan prior to construction activities associated with the proposed biofuels facility.

3.5.2 Current/Baseline Resource State

The proposed pipeline lateral and both sites are located within the Goose Lake Basin and is the traditional territory of several Native Indian groups, including the Klamath, Modoc, Yahooskin, and Northern Paiute. These populations took advantage of the various flora and fauna resources that became available seasonally along the lake edge and adjacent uplands. Lithic materials for stone tools would have been obtained from the nearby bluffs and prehistoric quarries. Euroamericans settled the area in the early 1870s and focused on agriculture and timber related industries. The construction of the Lake County Railroad brought these products to larger manufacturing centers and promulgated the economic expansion of the Town of Lakeview. As a result, the landform and cultural history of the area is perceived to have a high probability for possessing archaeological sites related to the pre-contact and historic periods.

A Phase I archaeological inventory of approximately 80.8 acres was completed as was Phase II testing and site evaluation of seven archaeological sites within the Preferred Site and along the pipeline lateral. In addition, an above-ground structure inventory was conducted within the one mile area of potential effect (APE) of the Preferred Site and pipeline lateral. No archaeological or above-ground architectural surveys have been completed for Alternative Site and no previously recorded cultural resources or historic properties have been identified within the property.

The primary direct impact from construction of the pipeline lateral and the proposed facility and associated utilities would be the clearing and removal of existing vegetation, grading, and excavations for the pipeline and other utilities, foundations, and stormwater ponds within the project construction footprint. Construction activities have the potential to disturb previously identified surface and subsurface cultural deposits and would result in an adverse effect to known historic properties, while operation of the new facility would alter the rural character of the area, thereby causing indirect visual and auditory impacts on the built environment.

3.5.3 Resource Impacts and Consequences due to Proposed Action

The disturbance of land during construction for the proposed project could cause adverse impacts on historic and cultural resources. Direct impacts could include the physical destruction or damage to all or a portion of a site, or alteration or removal of a property. Indirect impacts could include the introduction of visual, atmospheric, or audible elements that would diminish the integrity of the site or alter settings associated with historic properties.

Compliance with section 106 of the NHPA is being conducted for the project. To ensure the Air Force's responsibilities under the NHPA and its implementing regulations are met, a MOA has been established by the Air Force, in consultation with the SHPO, to mitigate for adverse impacts on historic properties and to complete the section 106 compliance process. The signed MOA is included in Appendix B of the Final EA. Under the MOA, Red Rock will conduct data recovery on each affected historic property and provide the SHPO's comments on the report to the Air Force. With the understanding that the preceding steps will be taken, the project will have mitigated the adverse impact on historic properties as defined under 36 CFR 800.16(i).

Preferred Site

Background cultural and archaeological research was compiled for the proposed project, and a report (Krause and Born, 2013) was subsequently provided to the Air Force and the SHPO. Approximately 95 percent of all workspace associated with Preferred Site, as well as portions of the proposed pipeline, were previously surveyed for cultural resources and resulted in the identification of seven archaeological sites and one isolated find. Of these, two were determined eligible for listing on the NRHP, while the remaining resources were not evaluated to the NRHP. A review of the National Register (National Park Service, 2013) and the SHPO's historic properties list (Oregon SHPO, 2013) also identified eight National Register listed properties, ten historic above-ground structures, and one railroad segment within one mile of the Preferred Site; the abandoned railroad berm has been determined not eligible for listing on the NRHP. The Urban Growth Boundary amendment does not increase the potential direct or indirect effects on cultural resources at the Preferred Site.

The Phase I archaeological and above ground inventories were completed, as well as site testing and evaluation within the APEs defined for the Preferred Site and pipeline lateral. The APE includes all areas where the undertaking could cause changes to land, structures, or their uses whether the change would be direct, indirect, beneficial, or adverse. In addition to areas of ground disturbance, this includes all locations from which elements of the undertaking (such as structures or land disturbance) could be visible. The APE for direct impacts was defined as the 54-acre facility footprint, the temporary workspace and permanent right-of-way for construction of the proposed pipeline lateral, and the temporary workspace and permanent right-of-way for the rail spur. The APE for indirect affects was defined as a one-mile radius of the Preferred Site and pipeline lateral.

While the entire 87.7-acre parcel identified as the Preferred Site would be purchased, actual ground disturbance would be limited to an approximate 54-acre area situated in the north half of the parcel and the rail spur. An archaeological inventory of approximately 45.5 acres was completed within the facility footprint. The remaining 8.5 acres within the facility footprint would be surveyed prior to ground disturbing activities. The investigation included a combination of walkover reconnaissance and shovel testing across the Preferred Site. A series of auger tests were also completed in portions of the facility footprint where soil profiles indicted a potential for deeply buried archaeological resources. Six cultural resources, one isolated find, and an abandoned

railroad berm have been previously identified within Preferred Site parcel. The plan is to avoid all construction or future expansion to the south of its planned rail spur, which lies north of a prominent wetland feature on the southern end of the parcel, thus configuring the facility footprint to avoid two previously identified sites, 35LK3993 and 35LK3156, and the major wetland complex (Table 3.9). The abandoned railroad spur has been determined as not eligible to the NRHP and will be avoided.

Four remaining previously identified sites, 35LK3991, 35LK3992, 35LK3994/35LK3995, and one archaeological isolate, ISO-01, have all been recorded within the 54-acre facility footprint and were reevaluated by the survey (Table 3.9). The boundaries of the previously recorded archaeological sites were expanded to accommodate newly discovered artifacts and resulted in the combining of two sites into one, i.e., 35LK3994/35LK3995. Please note that where the MOA reads "35LK3994," that archeological site title includes the revised merging of sites represented by previously recorded 35LK3994 and 35LK3995. In addition, the cultural resources inventory identified four new archaeological sites and six archaeological isolates (Table 3.9). NRHP-eligibility evaluations were completed on each of the archaeological sites. Sites 35LK4695, 35LK4696, and 35LK4697, and the five isolated finds, were recommended not eligible for listing to the NRHP; ISO-01 was not relocated during this field effort. A recommendation of no impact was made on the resources that were assessed as not eligible for listing to the NRHP. Isolate 14/2176-18 was not evaluated and would be avoided following conditions under the MOA (Appendix B). Consultation with the Oregon SHPO resulted in modifying the assessment of 35LK4696 and 35LK4697 as unevaluated (see Ch 5).

Site 35LK3991 has been determined eligible for listing on the NRHP (Table 3.9). Additional test and evaluation was completed of a proposed road footprint through the center of the site area. Testing recommended that the area did not contribute to the NRHP-eligibility of 35LK3991 and there would be no adverse impact on site 35LK3991. In their November 13, 2014 letter, the SHPO did not concur with this assessment and recommended additional testing at the site. Since this field effort, the facility footprint expanded to include all of site 35LK3991. Sites 35LK3991, 35LK3992, 35LK3994/35LK3995, and 35LK4694 have been recommended eligible for the NRHP. Construction of the facility would result in an adverse impact on these historic properties (see Chapter 5). Adverse effects will be addressed in the MOA (Appendix B).

Table 3.9
Cultural Resources Identified within APE of Preferred Site and Pipeline Lateral

Resource Number	Site Type	Distance to Project Component	NRHP Eligibility/Recommendation
Archaeological Resources			
35LK3991	Historic/Pre-Contact site	Within Preferred Site	Eligible; Mitigate adverse impact.
35LK3992	Historic/Pre-Contact site	Within Preferred Site	Eligible; Mitigate adverse impacts
35LK3994/ 35LK3995	Pre-Contact lithic scatter site	Within Preferred Site	Eligible; Mitigate adverse impacts
35LK4278	Pre-Contact lithic scatter site	Within Pipeline corridor	Not evaluated; Not identified within APE
ISO - 01	Pre-Contact isolate	Within Preferred Site	Not eligible; Not relocated within APE
14/2176-1	Historic isolate	Within Preferred Site	Not eligible
14/2176-3	Pre-Contact isolate	Within Preferred Site	Not eligible
35LK4694	Pre-Contact lithic scatter site	Within Pipeline corridor	Eligible; Mitigate adverse impacts
35LK4695	Historic debris scatter site	Within Pipeline corridor	Not eligible
14/2176-10	Historic isolate	Within Preferred Site	Not eligible
35LK4696	Pre-Contact lithic scatter site	Within Preferred Site	Unevaluated; Mitigate adverse impacts
14/2176-14	Pre-Contact isolate	Within Preferred Site	Not eligible
35LK4697	Pre-Contact lithic scatter site	Within Preferred Site	Unevaluated; Mitigate adverse impacts
14/2176-17	Pre-Contact isolate	Within Preferred Site	Not eligible
14/2176-18	Pre-Contact lithic isolate	Within Pipeline corridor	Not eligible
Above Ground Resources			
HR - 1	Lake Railway (Nevada-California- Oregon Railway)	Within Pipeline corridor	Eligible; No adverse impact; SHPO concurrence
HR - 2	Deadman Creek (Irrigation canal)	Offline – 0.6 mi west of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 3	East Branch Thomas Creek (Irrigation canal)	Offline – 0.9 mi west of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 4	Farmstead; 17082 Highway 395, Lakeview	Offline – 0.25 mi south of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 5	Duke-Green House; 17070 Highway 395, Lakeview	Offline – 0.9 mi southwest of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 6	Farmstead; 15682 Highway 395, Lakeview	Offline – 3.3 mi southwest of Preferred Site	Eligible; No adverse impact; SHPO concurrence

Table 3.9
Cultural Resources Identified within APE of Preferred Site and Pipeline Lateral

Resource Number	Site Type	Distance to Project Component	NRHP Eligibility/Recommendation
HR - 7	Crane Creek (Irrigation canal)	Offline – 3.5 mi south of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 8	House; 1125 S G Street, Lakeview	Offline – 0.7 mi north of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 9	House; 943 S F Street, Lakeview	Offline – 0.9 mi north of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 10	Commercial Building; 930 S F Street, Lakeview	Offline – 0.9 mi north of Preferred Site	Eligible; No adverse impact; SHPO concurrence
HR - 11	Outbuilding; 1138 S E Street, Lakeview	Offline – 0.8 mi north of Preferred Site	Eligible; No adverse impact; SHPO concurrence

The archaeological inventory of the pipeline lateral consisted of a 100-foot-wide corridor, centered on the existing Lake County Railroad, i.e., 33- to 49-foot-wide workspace on either side of the existing railroad tracks and ballast that extends approximately 3 miles from the Ruby Pipeline to Preferred Site for a total survey of 35.3 acres. The investigation included a combination of walkover reconnaissance, shovel testing, and auger testing. Three cultural resources were identified, including one pre-contact isolate, one pre-contact lithic scatter, and one historic artifact scatter (Table 3.9). Intensive testing in the vicinity of previously identified site 35LK4278 also was conducted to confirm its presence or absence within the temporary construction workspace for the pipeline lateral. This resource should be avoided as there is no evidence that the site extends into the pipeline corridor. Site 35LK4694 (14/2176-5), a pre-contact lithic scatter with intact subsurface deposits, was recommended eligible for the NRHP (Table 3.9). Construction of the pipeline lateral would result in an adverse impact on this historic property. The project would have no impact on the remaining two resources that were assessed as not eligible for listing to the NRHP. Under the MOA, an archaeological inventory would be completed prior to ground disturbing activities on any portion of the construction right-of-way that has not been surveyed.

Since impacts on historic properties would be primarily visual in nature, historic properties adjacent to or within one mile of all Preferred Site components were inventoried. Background research identified six previously recorded resources within the indirect APE that are either considered to be eligible for listing in the NRHP or that have an undetermined eligibility status. The locations of the Lake County Railroad (HR-1) and the Duke Green House (HR-5) were field verified and identified as NRHP-eligible historic resources (Table 3.9). Of the remaining previously recorded properties, one was relocated outside of the APE, one was relocated within the APE but it is now in ruin, and two could not be relocated at all.

The above ground inventory also newly identified nine above ground resources more than 50 years of age that are eligible for listing in the NRHP (Table 3.9). These include 19th to 20th century residences, a farm outbuilding, and irrigation canals. Of these resources, the Lake County Railroad (HR-1) would be directly affected by the construction of the rail spur from the railroad into the facility, and by the construction of a new pipeline within its dedicated right-of-way. The other 10 historic resources identified (HR-2 through HR-11), in addition to the Lake County Railroad, would incur indirect visual impacts on their historical setting. The project would have no effect on any of these resources as they would retain their character-defining features and historical appearance that contribute to their National Register eligibility once project construction is completed and the facility is operational.

Alternative Site

The Alternative Site is located within a similar geological and geomorphological setting as Preferred Site, and as such, has a high probability for containing cultural resources or eligible historic properties. Impacts are expected to be identical to the Preferred Site. Construction activities have the potential to disturb previously unknown surface or subsurface cultural deposits and would result in an adverse effect to historic properties.

No-Action Alternative

Under the no-action alternative, no new areas would be developed as part of the proposed project and the Urban Growth Boundary would not be amended. As a result, no impacts are anticipated to occur from this alternative to historic properties or other cultural resources.

3.6 LAND USE REQUIREMENTS/RESTRICTIONS

3.6.1 Proposed Action(s)

The proposed action would establish a new industrial biomass facility immediately outside of the town boundary of Lakeview in Lake County, Oregon. The proposed facility would include new structures up to approximately 35 feet tall with stacks up to 100 feet tall for venting emissions. Several fuel and water storage tanks and a woody biomass storage, processing, and handling area would also be located within the facility boundary.

3.6.2 Current/Baseline Resource State

The total area in Lake County is 8,359 square miles, or 5.35 million acres. Seventy-eight percent (4.17 million acres) of the total land area is publicly owned with 22 percent (1.18 million acres) held in private ownership. Major economic activities associated with land use in Lake County include cattle ranching, timber, and irrigated hay. Land uses largely align with these economic activities; grazing accounts for 75 percent, crops and hay is 13 percent, timber is 12 percent, and urban land use in the county accounts for 1 percent of total land use (Natural Resources Conservation Service [NRCS], 2013b).

The proposed project is located in Lake County, Oregon immediately south of the Urban Growth Boundary of the Town of Lakeview. Currently both sites are zoned agricultural A-2. Land use and planning is managed and implemented by the Lake County Planning Department and guided by the Lake County Comprehensive Plan (1982), the Lake County Zoning Ordinance (1989), and the Lake County Land Development Ordinance (1989). ORS 215.283 governs the types of uses that may be established on exclusive farm use (EFU) lands, and subsection (1) sets forth certain uses that are permitted outright on EFU lands, without being subject to approval by the local governing body. This authority is implemented in the Lake County zoning ordinance at Section 3.02. One such permitted use is a facility for the production of biofuel pursuant to ORS 215.283(1)(r).

The Urban Growth Boundary amendment to the County code would include the Preferred Site. Consistent with Lake County code, uses authorized by statute are allowed without additional local government restrictions, even if, as in this instance, the local land use regulations have yet to be amended to include all such uses.

3.6.3 Resource Impacts and Consequences due to Proposed Action

Preferred Site

The site is currently zoned for agricultural uses; however the biofuels production facility is an authorized use consistent with agricultural zoning. The proposed biofuels facility is located adjacent to the industrial park area of Lakeview on the south side of Kadrmas Road. Kadrmas Road forms the east-west boundary of the area and M Street forms the north-south boundary. A concrete mixing plant and construction company equipment storage yard are located adjacent to this site on the south side of Kadrmas Road and serves as the site's northwest boundary. The proposed land use is compatible with and does not interfere with existing nearby land uses including the concrete mixing plant, construction storage yard, landfill, and sewage disposal ponds. Disturbance for construction of the proposed pipeline lateral would be temporary and existing land use would not be permanently altered. The proposed facilities, Urban Growth Boundary amendment, and pipeline lateral would comply with all county zoning ordinances. Land use along the proposed pipeline lateral route, which would utilize the existing Lake County Railroad right-of-way, is zoned agricultural. Incorporating the Preferred Site into the Urban Growth Boundary could increase revenue for the Town of Lakeview and Lake County from taxes and fees.

There would be a minor but lasting impact to the aesthetics of Lakeview at the southern edge of town regardless of the site alternative chosen as the proposed facility would include structures up to 35 feet in height and stacks up to 100 feet in height for venting emissions. There would be no impacts on the aesthetics along the proposed pipeline lateral route, rail spur, or from the Urban Growth Boundary amendment.

Alternative Site

The Alternative Site is currently zoned for agricultural uses; however the biofuels production facility is an authorized use consistent with agricultural zoning. The proposed biofuels facility is located adjacent to the industrial park area of Lakeview on the south side of Kadrmas Road. Kadrmas Road forms the east-west boundary of the area and M Street forms the north-south boundary. There would be no lasting incompatibility with existing land uses. Land use along the proposed pipeline lateral route, which would utilize the existing Lake County Railroad right-of-way, is zoned agricultural.

No-Action Alternative

Under the no-action alternative, no new areas would be developed as part of the proposed project and the Urban Growth Boundary would not be amended. As a result, incompatibility with existing land uses would not occur. Although some land use changes could occur on either of the site options it is not expected that land use changes would occur as quickly, if the biomass plant and rail spur is not constructed.

3.7 GEOLOGICAL RESOURCES AND SOILS

3.7.1 Proposed Action(s)

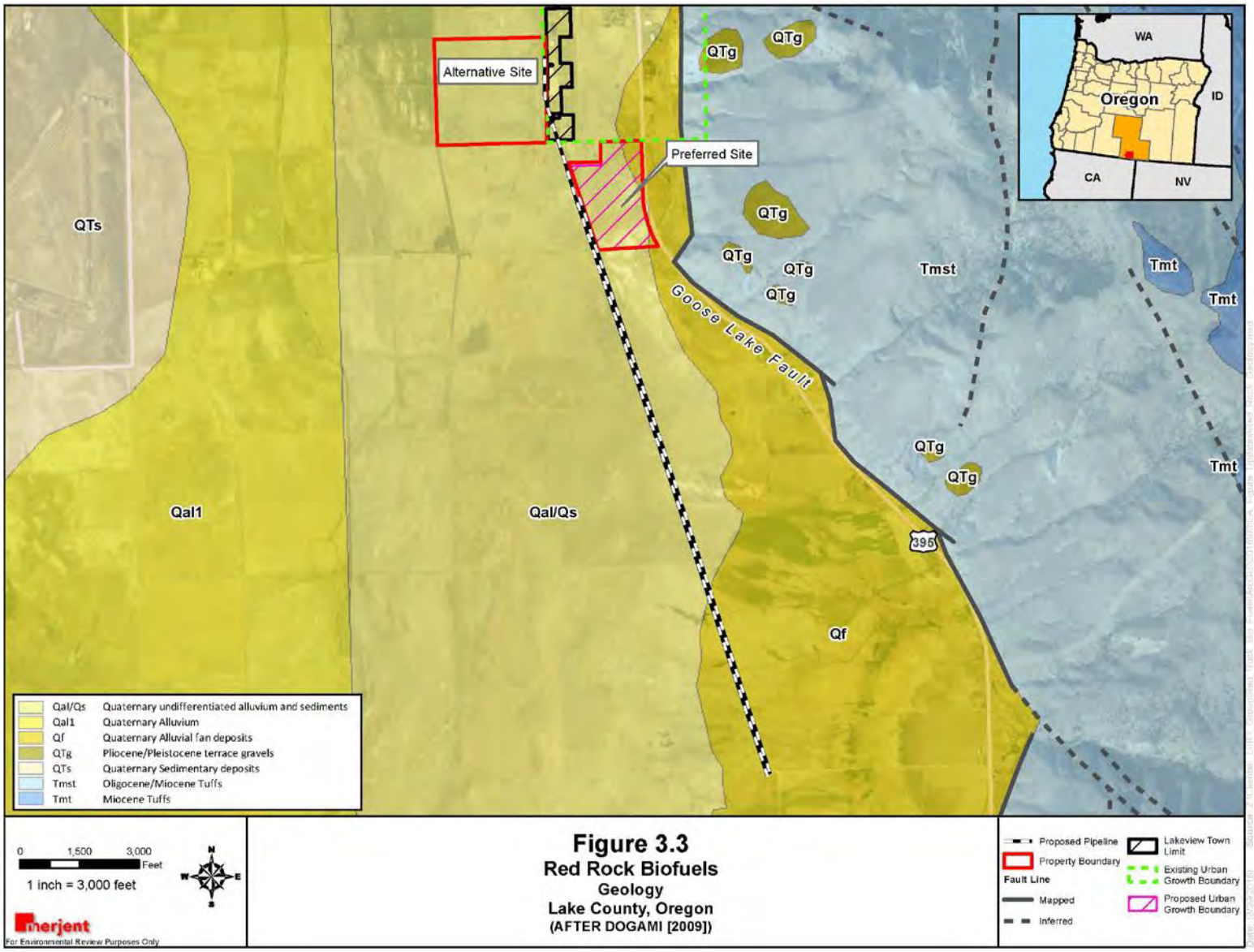
The proposed action would require land clearing and excavation activities for the 54-acre facility footprint, the temporary workspace for construction of the proposed pipeline lateral, and the temporary workspace and permanent right-of-way for the rail spur. The seismic design of the facility would be in accordance with the 2012 International Building Code, which was adopted as part of the 2014 Oregon Structural Specialty Code in July 2014. The seismic design of the pipeline and rail spur would be in accordance with the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration and Federal Railroad Administration, respectively. Geotechnical investigations have been completed on the Preferred Site that provides subsurface material and condition data used to make recommendations for final engineering and design of the facility, pipeline, and rail spur.

3.7.2 Current/Baseline Resource State

The proposed pipeline lateral and the Preferred and Alternative Sites are located within a hydrologic basin that is almost always closed, meaning the water converges to a single point inside the basin (Philips and Van Denburgh, 1971). The project area is located in the northeastern extremity of the adjoining Sacramento River basin in southcentral Oregon in a semi-desert climate. The bedrock is dominated by volcanics that have been subject to extensional normal faulting that has resulted in the formation of closed basins and hydrologically-bounded by prominent escarpments along the edges of uplifted blocks, including the Warner Mountains east of the sites.

Figure 3.3 shows the presence of a north-south trending fault, the Goose Lake Fault, approximately 1,000 to 1,500 feet to the east of the Preferred Site. The Goose Lake Fault is a normal fault with

an estimated vertical upward displacement on the east side of 100 meters (USGS, 2008). The surficial geology within the structural graben immediately west of the fault is dominated by unconsolidated alluvium and sediments. Most of the Preferred Site overlies Quaternary undifferentiated alluvium and sediments with occurrences of Quaternary alluvial fan deposits shed from the eastern uplift within the easternmost portion of the site boundary. The Alternative Site and the proposed pipeline lateral route overlie Quaternary undifferentiated alluvium and sediments. The proposed pipeline lateral route traverses Quaternary undifferentiated alluvium and sediments for all but the southernmost approximately 4,000 feet, where they cross over Quaternary alluvial fan deposits.


Alternative Site
Preferred Site
QTg
QTs
Qal1
Qal/Qs
Qf
Tmst
Tmt
Goose Lake Fault
395
WA
Oregon
ID
CA
NV
Qal/Qs Quaternary undifferentiated alluvium and sediments
Qal1 Quaternary Alluvium
Qf Quaternary Alluvial fan deposits
QTg Pliocene/Pleistocene terrace gravels
QTs Quaternary Sedimentary deposits
Tmst Oligocene/Miocene Tuffs
Tmt Miocene Tuffs
0 1,500 3,000 Feet
1 inch = 3,000 feet
N
W
E
S
Figure 3.3
Red Rock Biofuels
Geology
Lake County, Oregon
(AFTER DOGAMI [2009])
Proposed Pipeline
Property Boundary
Fault Line
Mapped
Inferred
Lakeview Town Limit
Existing Urban Growth Boundary
Proposed Urban Growth Boundary
For Environmental Review Purposes Only

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With respect to the fault located near the sites, the severity of an earthquake can be expressed in terms of intensity and magnitude. Intensity is based on the damage and observed impacts on people and the natural and built environment. It varies from place to place depending on the location with respect to the earthquake epicenter, which is the point on the Earth's surface that is directly above where the earthquake occurred. The severity of intensity generally increases with the amount of energy released and decreases with distance from the fault or epicenter of the earthquake. The scale most often used in the U.S. to measure intensity is the Modified Mercalli Intensity Scale. Table 3.10 shows the 12 levels of the Modified Mercalli Intensity Scale. Peak ground acceleration (PGA) is also used to measure earthquake intensity by quantifying how hard the earth shakes in a given location. PGA can be measured in g, which is acceleration due to gravity.

Magnitude is the measure of the earthquake strength. It is related to the amount of seismic energy released at the earthquake's hypocenter, the actual location of the energy released inside Earth. It is based on the amplitude of the earthquake waves recorded on instruments, known as the Richter magnitude test scales (Table 3.10), which have a common calibration.

Table 3.10
Modified Mercalli Intensity Scale

Magnitude	Intensity	PGA (% g)	Perceived Shaking
0 – 4.3	I	<0.17	Not Felt
	II – III	0.17 – 1.4	Weak
4.3 – 4.8	IV	1.4 – 3.9	Light
	V	3.9 – 9.2	Moderate
4.8 – 6.2	VI	9.2 – 18	Strong
	VII	18 – 34	Very Strong
6.2 – 7.3	VIII	34 – 65	Severe
	IX	65 – 124	Violent
	X	124+	
7.3 – 8.9	XI		Extreme
	XII		

The USGS has prepared National Seismic Hazard Maps that plot probabilistic ground motion and include PGA expressed as a percentage of gravitational acceleration. The map of PGA with a 2 percent probability of exceedance within 50 years for California and Nevada (USGS, 2009), indicates that the PGA for both site alternatives ranges from 0.16 to 0.21 of gravitational acceleration, resulting in no perceived shaking to weak shaking.

A statewide geohazards interactive map viewer developed by the Oregon Department of Geology and Mineral Industries (DOGAMI) (2013) was accessed to evaluate geohazards that could impact the Preferred and Alternative Sites. The map viewer indicates there are no significant geohazards

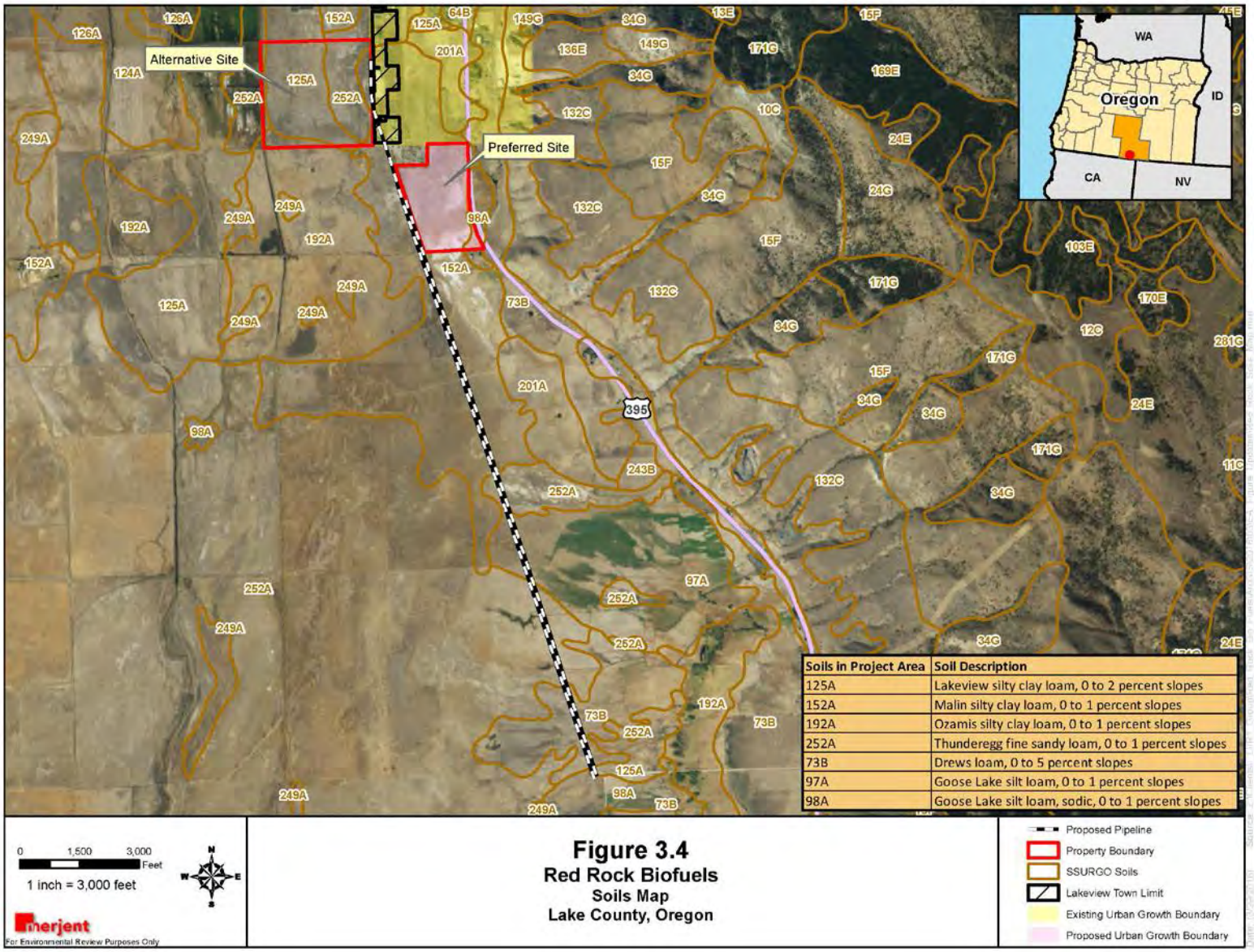
attributable to volcanoes, coastal erosion, or tsunamis. The map viewer indicates that strong to very strong shaking could be expected to occur during an earthquake in a 500-year period, and that a moderate hazard exists for soil liquefaction during an earthquake. The map viewer also indicates that moderate to strong shaking could be expected at the site in the event of a magnitude 9.0 Cascadia subduction zone earthquake.

DOGAMI (2013) notes the presence of alluvial fan deposits present at the eastern edge of Preferred Site. Structures located on fans can be buried by sediment and debris during heavy storm events. Figure 3.3 shows approximately 4,000 feet of the southernmost extent of the proposed pipeline lateral for the site alternatives cross alluvial fan deposits.

As previously noted, the Preferred and Alternative Sites are located in a floodplain. This indicates surficial soils were derived from unconsolidated sediments largely of fluvial origin. Figure 3.4 illustrates the distribution of soil types for the sites, proposed pipeline lateral route, and surrounding area. All the soils are loams with varying amounts of silt, clay, and sand, which tend to have increased infiltration of water and air. Loams also tend to have increased nutrient and water retention. The proposed pipeline lateral route crosses loam soils.

The slopes of the Preferred and Alternative Sites do not exceed 2 percent except for a small area in the southeast corner of the Preferred Site where the alluvial fan deposits terminate (0.03 percent of the total area for this site). Facility construction would not occur in the area with greater slopes.

The predominant soil type for the Preferred Site is the Malin silty clay loam, with 0 to 1 percent slopes, which comprises 94 percent of the site area and is classified as farmland of statewide importance. The Alternative Site is comprised primarily of the Lakeview silty clay loam with 0 to 2 percent slopes (approximately 55 percent of Alternative Site area) and the Thunderegg fine sandy loam with 0 to 1 percent slopes (approximately 33 percent of Alternative Site area). Lakeview silty clay loam is classified as prime farmland if irrigated. The Malin silty clay loam with 0 to 1 percent slopes covers the area where the proposed pipeline lateral would cross to access the Preferred Site (approximately 48 percent of the total length), and approximately 58 percent of the total length to access the Alternative Site. Figure 3.5 shows the classifications of prime farmland on the site alternatives.


Alternative Site
Preferred Site
WA
Oregon
ID
CA
NV
395
Soils in Project Area | Soil Description
125A | Lakeview silty clay loam, 0 to 2 percent slopes
152A | Malin silty clay loam, 0 to 1 percent slopes
192A | Ozamis silty clay loam, 0 to 1 percent slopes
252A | Thunderegg fine sandy loam, 0 to 1 percent slopes
73B | Drews loam, 0 to 5 percent slopes
97A | Goose Lake silt loam, 0 to 1 percent slopes
98A | Goose Lake silt loam, sodic, 0 to 1 percent slopes
0 1,500 3,000 Feet
1 inch = 3,000 feet
For Environmental Review Purposes Only
Figure 3.4
Red Rock Biofuels
Soils Map
Lake County, Oregon
Proposed Pipeline
Property Boundary
SSURGO Soils
Lakeview Town Limit
Existing Urban Growth Boundary
Proposed Urban Growth Boundary

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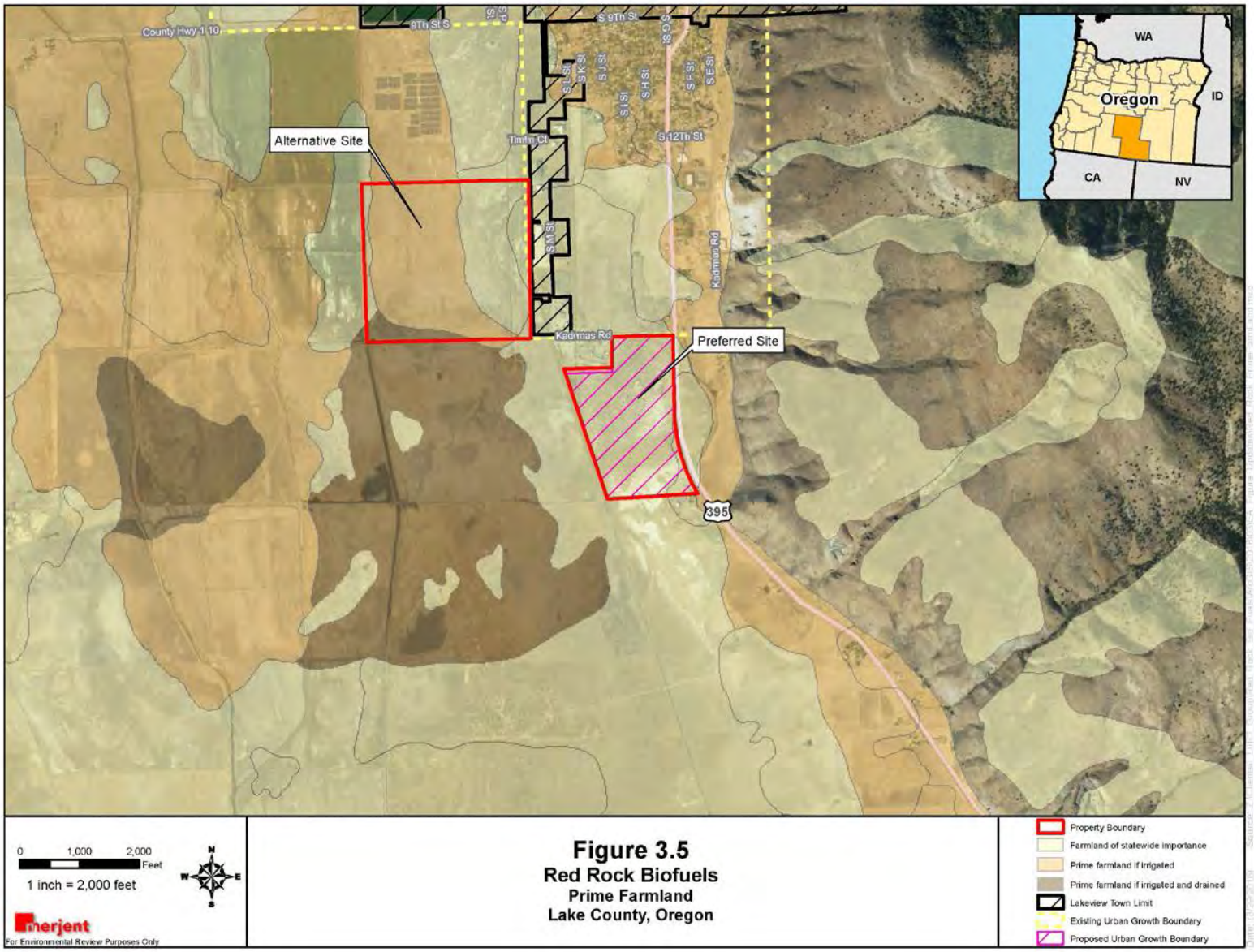


Figure 3.5
Red Rock Biofuels
Prime Farmland
Lake County, Oregon

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3.7.3 Resource Impacts and Consequences due to Proposed Action

Preferred Site

The Preferred Site does not overlie any known geologic resources of economic value. Therefore, it is unlikely that geological resources would be adversely affected by the construction and operation of the facility on this site. Earthquakes and flooding are the geohazards to which both sites would be most susceptible. Facility design that accounts for these potential hazards offers the most effective means to mitigate the potential impact. Including the Preferred Site into the Urban Growth Boundary would not impact geological resources or increase the geological hazards.

Construction of the facility at the Preferred Site would impact approximately 54 acres, eliminating the possibility of using the land for rangeland or agricultural purposes. However, this area is negligible in comparison to the land available for such purposes in the county, and agricultural land uses would not necessarily be found to be compatible with the surrounding industrial land uses adjacent to the sites. Development of the proposed facility would have a negligible impact on soils and agricultural or rangeland production in the region.

Both sites are composed of varying areas of soils classified as farmland of statewide importance, prime farmland if irrigated, and prime farmland if irrigated and drained. DoD worked with the local NRCS office to complete form AD-1006, the Farmland Conversion Impact Rating form. Sites that receive a rating less than 160 points do not need to be given further consideration for protection under the Farmland Protection Policy Act, nor do additional sites need to be evaluated (7 CFR 658.4(c)(2)). Both sites received ratings less than 160; the Preferred Site was rated at 47 and the Alternative Site was rated at 90 therefore, the impact on farmland soils is considered negligible. Correspondence with NRCS and the completed AD-1006 form can be found in Chapter 7.

The proposed pipeline lateral would be approximately 3 miles long and would be located within the existing 100-foot Lake County Railroad right-of-way. Approximately 17 acres within the 100-foot right-of-way could be disturbed during construction of the lateral pipeline. Except for the 30-foot wide permanent right-of-way, the area disturbed during construction would be restored to pre-construction conditions. Pipeline operation impacts on agriculture and rangeland would be minimal.

Alternative Site

The proposed pipeline lateral would be approximately 3.5 miles long and adjacent to the western edge of the Lake County Railroad right-of-way. Using the existing railroad tracks to transport equipment and for temporary soil stockpiles, approximately 22 acres of the 100-foot-wide construction right-of-way could be disturbed during construction. Except for the 30-foot wide permanent right-of-way, the area disturbed during construction would be restored to pre-construction conditions. Pipeline operation impacts on agriculture and rangeland would be minimal.

No-Action Alternative

Under the no-action alternative, construction and operation of the proposed biofuels project and the amendment of the Urban Growth Boundary would not occur, thus would not result in impacts on geological resources or soils at either site option or associated pipeline lateral corridor.

3.8 NOISE

3.8.1 Proposed Action(s)

The proposed action would have land clearing and excavation activities associated with construction. During operation, trucks would haul biomass to the site. Noise would also be generated by process equipment including boilers, conveyors, chipping operations and other industrial equipment. The project would be subject to the noise regulations under OAR Chapter 340, Division 35. OAR 340-35-035 (1)(b)(B) requires that new industrial sources not exceed the noise levels listed in Table 3.11.

Table 3.11
Allowable Statistical Noise Levels in Any One Hour

7 a.m. – 10 p.m.	10 p.m. –.m7 a.m.
L50 – 55 dBA	L50 – 50 dBA
L10 – 60 dBA	L10 – 55 dBA
L1 – 75 dBA	L1 – 60 dBA

3.8.2 Current/Baseline Resource State

Noise is defined as unwanted sound because it has the potential to interfere with communication, cause to damage hearing, or is otherwise annoying. Measurements can be calculated with instruments that record instantaneous sound levels in decibels. A-weighted decibels (dBA) is used to characterize sound levels that can be sensed by the human ear. “A-weighted” denotes the adjustment of the frequency range to what the average human ear can sense when experiencing an audible event. The threshold of audibility is generally within the range of 10 to 25 dBA for normal hearing. Various measures are used to evaluate noise. The Lmax is the maximum noise level over the measure period, and the Leq (noise level equivalent) is the energy-averaged noise level over the measurement period.

Table 3.12 compares common sounds and shows how they rank in terms of the impacts on hearing. Sound levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, each 10 dBA increase seems twice as loud (EPA, 1981b).

Table 3.12
Common Sounds and Associated Impacts

Level (dBA)	Common Sounds	Effect
10	Just audible	Negligible
30	Soft whisper (15 feet)	Very quiet
50	Light auto traffic (100 feet)	Quiet
60	Air conditioning unit (20 feet)	Intrusive
70	Noisy restaurant or freeway traffic	Telephone use difficult
80	Alarm clock (2 feet)	Annoying
90	Heavy truck (50 feet or city traffic)	Very annoying: Hearing damage (8 hours)
100	Garbage truck	Very annoying
110	Pile drivers	Strained vocal effort
120	Jet takeoff (200 feet) or auto horn (3 feet)	Maximum vocal effort
140	Carrier deck jet operation	Painfully loud

Notes:
Source: EPA, 1981b

3.8.3 Resource Impacts and Consequences due to Proposed Action

Preferred Site

The ambient noise environment near the project site is affected mainly by sounds from automobile traffic along the highway, farm equipment, wildlife, weather and other natural causes. A noise study was conducted at 4 sensitive receptors near the Preferred and Alternate Site locations following OAR guidelines. The receptors included 2 residences and 2 business that ranged from approximately 100 feet to 800 feet of the Preferred Site property line. The nearest receptor to the Alternative Site was approximately 1000 feet. Noise levels at all 4 receptors were predominately in the 43-46 dBA range with Lmax ranges in the upper 60 dBA level. Including the Preferred Site into the Urban Growth Boundary would not increase noise levels.

The proposed construction activities would generate temporary increases in noise in and around the vicinity of the sites. Noise would be generated by construction equipment and construction traffic. Individual pieces of heavy equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (see Table 3.13). Assuming a reduction of 6 decibels per doubling of distance, the noise level resulting from excavation and grading at the nearest sensitive receptor would be approximately 83 dBA. The zone of relatively high construction sound levels typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience appreciable levels of construction sounds. Construction activities are exempt from the noise regulations under OAR 340-35-035 (5)(g).

Table 3.13 **Noise Levels Associated with Outdoor Construction**	
Construction Phase	**dBA L_{eq} at 50 feet from Source**
Ground Clearing	84
Excavation, Grading	89
Foundations	78
Structural	85
Finishing	89
Notes: Source: EPA, 1974	

The nearest residence is approximately 100 feet south of the Preferred Site property boundary; however, the biofuel facility's process area, where the noise is generated, is in the northern portion of the site and this residence is approximately 1000 feet south of the facility's process area. Thus this residence would be minimally impacted by noise resulting from the operation of the biofuels facility. The next closest residence is 800 feet east of the Preferred Site property boundary and would also be minimally impacted by the operation of the biofuels facility. The Preferred Site is approximately 200 feet east from the nearest business office.

During operations, increased traffic associated with transport of feedstock to the facility would result in overall minor impacts on the soundscape as the disruption would be intermittent and localized on US Highway 395. The facility would have an estimated 65 truckloads per day on a 10 to 12 hour receiving day, 5 to 6 days per week. Fuels produced by the facility would be shipped via rail or truck to West Coast markets. The facility would ship approximately 10 outbound rail cars per week on the Lake County Railroad connecting to the Union Pacific to the final destination. The facility process equipment with the potential to generate the loudest noises, such as boilers and the biomass chipper, would be located in the biomass storage, processing and handling area.

Alternative Site
Noise impacts would be the same as the Preferred Site.

No-Action Alternative
Under the no-action alternative, construction and operation of the proposed biofuels project and the amendment of the Urban Growth Boundary would not occur, thus would not result in impacts on the soundscape at either site alternative or associated pipeline corridor and nearby receptors.

3.9 HAZARDOUS MATERIALS AND WASTE STREAMS

3.9.1 Proposed Action(s)

The proposed plant would gasify approximately 170,000 bone dry tons per year of feedstock to produce approximately 7.2 MMgal jet fuel, 7.2 MMgal diesel fuel, and 3.6 MMgal naphtha. Jet and diesel fuels would each be contained in one 300,000 gallon final product tank, one 30,000 gallon day tank and one 30,000 off-spec tank. All tanks will be above-ground. Naphtha would be

contained in one 120,000 gallon final product tank, one 12,000 gallon day tank and one 12,000 gallon off-spec tank. Universal (i.e., batteries, pesticides, mercury-containing equipment, and lamp bulbs) and municipal waste (i.e., everyday items we use and throw away) would be generated in small amounts such as batteries and lamp bulbs used in the normal course of business operation for an administrative building. Industrial wastes would be generated during construction and operation and would include debris from land clearing and solid waste generated during the fuel conversion process that is not hazardous. Pesticides would be used if necessary for maintenance surrounding buildings but would not be necessary as part of the process.

3.9.2 Current/Baseline Resource State

A hazardous substance, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (42 USC §9601(14)), is defined as: "(A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33; (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of Resource Conservation and Recovery Act of 1976, as amended, (42 USC §6921); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any Hazardous Air Pollutant listed under section 112 of the CAA (42 U.S.C. §7412); and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator of the EPA has taken action pursuant to section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

Hazardous materials are defined by 49 CFR 171.8 as “hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions” in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR Parts 105–180.

Hazardous waste is defined in 42 USC §6903, as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serous irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

Both sites are zoned agricultural and have not previously had activities that generated hazardous waste. A Phase 1 Environmental Site Assessment was conducted for the Preferred Site in February 2014 IAW ASTM E 1527-13 with no findings. Operational solid waste services would be provided by Lake County Landfill, a municipal landfill, which is less than 0.5 mile from the Preferred Site

and about 1 mile from the Alternative Site. Hazardous wastes would be disposed using a licensed hazardous waste hauler.

3.9.3 Resource Impacts and Consequences due to Proposed Action

Preferred Site

Construction and operation of the proposed project would not require hazardous materials to be used. Universal wastes would be absent (in the case of mercury-containing equipment) to negligible (in the case of batteries, lamp bulbs, and pesticides) and would be disposed of properly and separately from regular solid waste at the Lake County Landfill without a significant increase in these wastes being disposed of at the landfill. Industrial waste generated from construction of the facility would not result in a significant increase of solid waste quantities that would require the Lake County Landfill to amend its existing licenses. Including the Preferred Site into the Urban Growth Boundary would not result in any noticeable changes from the baseline conditions in relation to hazardous materials.

Operation of the facility would generate wood ash as a byproduct, which can be sold as either a soil amendment or base material component for a redi-mix plant. If Red Rock is unable to secure a viable commercial outlet for the ash product, it would enter the solid waste stream, and be transported to the landfill approximately once per week or more if necessary. The amount expected to be generated would have a negligible impact on the landfill, and is not expected to require Lake County Landfill to amend its existing licenses. During construction and operation, used oils and lubricants will be managed in accordance with applicable regulations including spill prevention plans and mitigation measures. Process catalysts require periodic replacement and would generally sent back to the supplier for regeneration as regenerated catalyst is delivered. Small quantities of laboratory chemicals would be generated and disposed of by a licensed hazardous waste contractor.

Alternative Site

Impacts resulting from the use of hazardous materials and waste streams would be the same as the Preferred Site.

No-Action Alternative

Under the no-action alternative, construction and operation of the proposed biofuels project and the amendment of the Urban Growth Boundary would not occur, thus would not result in impacts on the landfill nor would impacts result from the use of hazardous materials.

3.10 UTILITIES AND INFRASTRUCTURE IMPACTS

3.10.1 Proposed Action(s)

The proposed project would construct a 3- to 3.5-mile long pipeline lateral from the Ruby Pipeline that would supply natural gas to the biomass plant. The Ruby Pipeline has a capacity of 1.5 billion cubic feet (Bcf) per day. The pipeline lateral would have a capacity of 0.024 cubic feet of natural gas per day of which the facility would use up to 0.006 Bcf per day. Electricity supplied by the local utilities would be used for the administrative building and other ancillary buildings and facility functions.

Approximately 500 dry tons per day of woody biomass feedstock would be transported to the proposed facility via 25-ton (net weight) trucks. The facility would have an estimated 65 truckloads per day on a 10 to12 hour receiving day, 5 to 6 days per week. The capacity of a typical two lane rural highway in relatively flat terrain is approximately 1,500 to 1,700 passenger car equivalents per hour per lane. The 2013 Average Daily Traffic was 1,700 vehicles per day at milepoint 144.22 and 1,300 vehicles per day at milepoint 144.4, indicating that the highway is used significantly under capacity (see Oregon Department of Transportation [ODOT] letter dated June 12, 2015 in Chapter 7). ODOT's 2013 Summary of Trend at Automatic Traffic Recorder Stations indicated that traffic had declined over the past 10 years in the Lakeview area (ODOT letter dated June 12, 2015 is included in Chapter 7). Therefore, the additional 65 trucks per day would have a negligible impact on traffic conditions.

Fuels produced by the facility would be shipped via rail to West Coast markets. The facility would ship approximately 10 outbound rail cars per week on the Lake County Railroad connecting to the Union Pacific to the final destination.

The facility would include raw water treatment and wastewater treatment. Raw water treatment would use potable water from the Lakeview municipal water supply to provide utility water and firewater for the plant. Process discharge water would be sent to the Lakeview municipal wastewater treatment plant.

3.10.2 Current/Baseline Resource State

Both site alternatives could be connected to public utilities providing services to the Town of Lakeview including:

- Water and wastewater services would be provided by the Town of Lakeview;
- Pacific Power would provide electricity; and
- Telecommunication services would be provided by CenturyTel of Oregon, Inc. doing business as CenturyLink.

Specific connection points for electrical, water, and wastewater would be determined in the final design and in consultation with local utilities. Access to city utilities is available to entities inside the urban growth boundaries of the Town of Lakeview.

The Ruby Pipeline is located approximately 3 miles south of the Preferred Site and about 3.5 miles south of the Alternative Site. The Ruby Pipeline is a 680-mile, 42-inch natural gas pipeline owned and operated by Kinder Morgan, Inc. The project involves constructing, owning, and operating the pipeline lateral.

Highway US 395 is a designated national scenic byway located on the eastern side of the Preferred Site and is a paved state highway maintained by the Oregon Department of Transportation. Kadrmas Road extends about 1 mile west from Highway 395 to connect with M Street. This portion of Kadrmas Road is a gravel county road and defines the northern border of the Preferred Site. M Street is a paved town road on the eastern edge of the Alternative Site that is in poor condition (personal communication, R. DuMilieu, December 23, 2013).

The Lake County Railroad is an approximately 55 mile rail line that runs between Lakeview and Alturas California, where it connects to the Union Pacific rail line. The Lake County Railroad has the capacity to ship 700 outbound rail cars per day (Conversation with Robert Didelius, Frontier Railway, Lake County Railroad Operator). The rail line is currently shipping approximately 30 outbound cars twice per week. The proposed biofuels facility would ship approximately 10 outbound rail cars per week in tank cars approved by the Department of Transportation's Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains.

3.10.3 Resource Impacts and Consequences due to Proposed Action

Preferred Site

The Town of Lakeview does not have industrial discharge limits or criteria. The Lakeview Public Works Department confirmed the utility has adequate capacity to handle the increased demand for process water for the plant and wastewater discharge. Discharge of this wastewater would not overburden the existing water and wastewater system. (Anderson Engineering letter). Annexing the Preferred Site into the Urban Growth Boundary would not result in any noticeable changes from the baseline conditions in relation to utilities and infrastructure.

Electricity and telecommunications utilities would be necessary for the administrative building and ancillary facility components. The local electric and telecommunications utilities would experience a negligible impact on their systems aligned with reasonable increased demand associated with additional business consumers.

The natural gas demand for the proposed project would not be expected to have more than a negligible impact on the supply of natural gas transported through the Ruby Pipeline. Traffic impacts on US 395 would be negligible as the road is well-maintained through this industrial corridor by the State. As a designated scenic byway, US 395 has roadside signage requirements to

ensure preservation of the aesthetic resource. Consultations with ODOT will be completed prior to the installation of any roadside signage.

Impacts on the existing railroad would be long-term because increased traffic would persist for the lifetime of the project, but otherwise result in a minor impact due to increased traffic from exporting fuel produced by the plant. Impacts on the existing Ruby Pipeline would be minor but long-term persisting the life of the biofuels facility, as natural gas would be supplied from the Ruby Pipeline to the pipeline lateral.

The anticipated increased traffic by large haul trucks on Kadrmas Road daily could decrease the condition of the current gravel roadbed and would increase airborne dust, particularly during the dry summer months. The impact on the road would be considered moderate because while there would be a noticeable change in the condition of the road, the impact would be localized but likely surpass 2 years. Kadrmas Road would be paved prior to the startup of the facility as part of the Town's larger road improvement initiative.

Alternative Site

The anticipated increased traffic by large haul trucks on M Street could further degrade the condition of the roadbed and would increase airborne dust, particularly during the dry summer months. The impact on the road would be considered moderate because while there would be a noticeable change in the condition of the road, the impact would be localized.

No-Action Alternative

Under the no-action alternative, construction and operation of the proposed biofuels project and the amendment of the Urban Growth Boundary would not occur, thus would not result in impacts on utilities and infrastructure at either site alternative or associated pipeline corridor.

3.11 SOCIOECONOMIC RESOURCES AND ENVIRONMENTAL JUSTICE

3.11.1 Proposed Action(s)

The proposed project would require approximately 31 employees for operations, with more needed for construction. Most positions would likely be filled by residents of Lake County, with a majority residing in the Town of Lakeview. A new industrial biomass facility would be established immediately outside of Lakeview. The proposed facility would include new structures up to approximately 35 feet tall with stacks up to 100 feet tall for venting emissions. Several fuel and water storage tanks and a woody biomass storage, processing, and handling area would also be located within the facility boundary.

3.11.2 Current/Baseline Resource State

Both sites for the proposed biofuels plant are located in Lake County immediately outside of the Urban Growth Boundary for the Town of Lakeview, which serves as the county seat. The 2010 census recorded a population of 2,294 in the Town of Lakeview and 7,895 in Lake County. Ethnic

distribution within Lakeview is similar to that of Lake County, with 91.3 percent of residents identifying as white/Caucasian. About 6.3 percent of the population of Lakeview and Lake County identify themselves as an unspecified race or belonging to a combination of "2 or More" races. The population of Native Americans in Lakeview and Lake County is 1.6 and 2.1 percent respectively, higher than the national average of 0.9 percent. Table 3.14 summarizes the population distribution in Lake County and its comparison to both state and national averages.

Table 3.14
Population and Race Statistics for Lakeview, Oregon

Geography	Total Population	White	Black	American Indian/ Alaskan Native	Asian	Other Race	2 or More Races
Towns							
Lakeview	2,294	91.3	0.0	1.6	0.8	2.9	3.4
Paisley	243	93.8	2.1	1.2	0.8	0.0	2.1
Unincorporated Areas							
New Pine Creek	120	83.4	0.0	5.8	0.00	5.8	5.0
Plush	57	89.5	0.0	7.1	0.0	1.7	1.7
Silver Lake	149	96.7	0.0	0.7	0.0	1.3	1.3
Regional, State, and National Averages							
Lake County	7,895	90.3	0.5	2.1	0.7	3.1	3.3
Oregon	3,831,074	83.7	1.8	1.7	3.7	5.3	3.8
U.S.	308,747,538	72.6	12.6	0.9	4.8	6.2	2.9

Notes:
Individual census data are not available for the unincorporated areas of Adel, Blaisdell, Christmas Valley, Five Corners, Fort Rock, Quartz Mountain, Summer Lake, Valley Falls, and Westside.
Sources:
US Census Bureau Quick Facts 2010 Census. http://quickfacts.census.gov/qfd/
USA.com. 2010 Census Data. http://www.usa.com

The economic conditions for Lake County differ from those at the state and national level with generally improved economic conditions in the towns of Lakeview and Paisley than in the surrounding county. Median household income in Lakeview and Paisley is $43,061 and $31,806 respectively. These median household income levels are less than statewide and national levels but slightly higher than countywide median household income levels.

The Lake County unemployment rate is 13.6 percent, contrasting with the Town of Lakeview and Oregon state average of 10.6 percent, and a national average of 9.6 percent. Paisley's unemployment rate of 7.9 percent is lower than county, state, and national averages. Outside of Lakeview and Paisley, unemployment levels in the unincorporated areas and throughout the rest of the county are higher.

Poverty levels in Lake County are high, with 17.7 percent of people in the county living at or below the poverty level. Approximately 10.6 percent of residents in Lakeview live at or below the poverty level. Table 3.15 summaries economic statistics in Lake County and some communities with available data.

The primary industry in Lakeview are the fields of Educational Services, Health Care and Social Assistance, which make up 14.6 percent of employment in the town followed by the Retail Trades, Arts, Entertainment and Food Service and Public Administration. Other industries include Agriculture and Forestry, Construction and Manufacturing, Science and Management and other services.

Table 3.15
Economic Statistics for Lakeview, Oregon*

Geography	Unemployment Rate (%)	Per Capita Income	Median Household Income	Individuals Living in Poverty (%)
Towns				
Lakeview	10.6	$24,115	$43,061	10.6
Paisley	7.9	$43,287	$31,806	14.3
Unincorporated Areas				
New Pine Creek	75.2	$9,047	$36,801	63.6
Plush	14.3	$19,427	$35,313	28.8
Silver Lake	7.3	$14,150	$40,625	54.29
Regional, State, and National Averages				
Lake County	13.6	$22,586	$41,105	17.7
Oregon	10.7	$26,171	$49,260	14.0
U.S	9.6	$27,334	$51,914	13.8

Notes:
Individual census data are not available for the unincorporated areas of Adel, Blaisdell, Ch ristmas Valley, Five Corners, Fort Rock, Quartz Mountain, Summer Lake, Valley Falls, and Westside.
Sources:
USA City Facts. 2010 Census Data. http://www.usacityfacts.com
USA.com. 2010 Census Data. http://www.usa.com
Oregon Labor Market Information System. 2010 Census Data. http://www.qualityinfo.org

Industry in Lake County reflects its more rural character with Agricultural and Mining making up 21.1 percent of employment in the county. This is followed by Educational Services, Health Care and Social Assistance and the Retail Trade making up the majority of employment opportunities in the county.

Five school districts provide educational services for students in Lake County. Located in Lakeview, Lake County School District #7 is the largest in the county with approximately 750 K-12 students attending three elementary schools, one middle school and one high school (Lake County, 2013).

The Paisley School has an enrollment of 103 K-12 students. Other schools in Lake County include a small elementary school in Adel with 9 students in 4th through 8th grades, and the North Lake School District with 225 enrolled students from the towns of Silver Lake, Christmas Valley, and Fort Rock. The Plush School District, in Plush Oregon, serves K-3 students from the towns of Plush and Adel (Lake County, 2013).

Services available at the Lake District Hospital in Lakeview include a 24-hour emergency room, air ambulance, cardio pulmonary, long-term care nursing, and a rehabilitation department (Lake Health District, 2013).

Three fire departments exist in Lake County, as well as the Lakeview Interagency Fire Center (LIFC), which provides dispatching, logistical support and resource status and availability to all cooperating agencies within the LIFC Zone of influence (LIFC, 2013).

Departments in Lakeview, Paisley, and Silver Lake serve the county with additional assistance coming from the Klamath Fire Department. The Oregon Department of Forestry also conducts fire prevention in the area on 1.5 million acres of federally managed land in Klamath and Lake counties within the Fremont-Winema National Forest (Oregon Department of Forestry, 2013).

Located in Lakeview, the Lake County Sheriff's Department is the primary law enforcement agency in the county and coordinates with other local law enforcement agencies including the Oregon State Police, Lakeview Police, Bureau of Land Management Rangers, and Forest Service Law Enforcement (Lake County, 2013).

3.11.3 Resource Impacts and Consequences due to Proposed Action

Preferred Site

Potential impacts on socioeconomic resources were assessed by determining if the proposed project would alter the location and distribution of the local population, decrease jobs, place a burden on housing resources, or replace the use of other existing economically viable resources. Also considered is the effect the proposed action would have on existing public services such as the need to construct new schools or medical facilities and affect the delivery of emergency and other community services. Annexing the Preferred Site into the Urban Growth Boundary would not adversely impact, split, disrupt or isolate any low-income, minority, social or ethnic group, as there is no concentration of any of these groups within, adjacent or in the near vicinity of the proposed biomass facility, rail spur, or the lateral pipeline.

Construction and operation of the proposed biofuels facility and proposed pipeline lateral would have a favorable impact on the socioeconomic environment in Lake County and a minor impact in Lakeview that would likely have a lasting effect on jobs for the duration of facility operation. Construction of the proposed facility would result in a temporary increase in employment for the local workforce. Approximately 31 employees would be needed onsite for daily operations, with an additional approximately 50 full-time-equivalent jobs for biomass supply activities. It is likely that most of the jobs at the facility would be filled by qualified residents in Lake County and particularly in Lakeview as the closest town to the proposed facility. It is unlikely the proposed action would have an increased demand on public and emergency services.

Alternative Site
Socioeconomic resources and environmental justice impacts would be the same as the Preferred Site.

No-Action Alternative
Under the no-action alternative, construction and operation of the proposed biofuels project would not occur, thus would not result in impacts on Lake County's socioeconomic environment. Without the additional employment, taxes and fees from the proposed action, the baseline conditions and trends within the project area would continue.

3.12 CUMULATIVE IMPACTS

A cumulative effect is an impact on the environment that results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or private citizen/group undertake such actions. These effects can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1508.7).

Cumulative effects are evaluated in terms of the specific resource, ecosystem, and human community being affected. The cumulative effects analysis boundary is delineated to prevent dilution of the cumulative effects over large areas. Guidance from CEQ's Considering Cumulative Effects under the NEPA was used in identifying geographic boundaries (CEQ, 1997). The location of the proposed action, along with external, public scoping, and internal scoping comments, provided the foundation for identifying this analysis area, as well as for identifying the other actions that could lead to cumulative effects.

The geographic cumulative effects area defined is appropriate for the assessed resources and forest management because it incorporates areas potentially affected by the proposed action. The area evaluated considers potential effects on resources from surface disturbance to the extent where impacts become non-measureable. The cumulative effect assessment area includes the Sprague, Lost, and Massacre Lakes, and Oregon's closed basin watersheds (NRCS, 2015).

The contribution of past and present actions on the environment has been taken into account in the existing environmental condition descriptions (affected environment). Existing conditions reflect the aggregate impact of all prior and ongoing human actions and natural events that have affected the environment, and serves as the baseline for analyzing the effects of future actions. The temporal boundary of cumulative effects is also taken into consideration when determining the appropriate reasonably foreseeable future actions. EPA guidance states:

"Determining the temporal scope requires estimating the length of time the effects of the proposed action will last. More specifically, this length of time extends as long as the effects may singly, or in combination with other anticipated effects, be significant on the resources of concern" (EPA, 1999).

When reviewing projects to be included in the cumulative effects discussion, projects which were included were determined to overlap in time and space pursuant to CEQ and EPA guidance. Relevant past, present, and reasonably foreseeable future actions in the project area are those actions that have influenced the current condition of a resource. The actions that could contribute to impacts on the resource topics analyzed in this EA are listed here.

Past or present actions:

- Construction and operation of the Lake County Railroad, established in 1912.
- Construction and operation of the geothermal pipeline that is adjacent to the Preferred Site and Kadrmas Road and connects to the hospital and Lakeview schools in town.
- Construction and reclamation of the Ruby natural gas pipeline.
- Construction of the Lakeview Geothermal project.
- Construction of the Black Cap Solar Farm on the north side of the Alternative Site.
- Livestock grazing and agricultural land use.

Reasonably foreseeable future actions:

- A gold mine reopening in Quartz Mountain.

The site is approximately 30 miles northwest of Lakeview, and reclamation of exploratory drilling disturbance is complete. At this time a Plan of Operations for additional drilling or mine development has not been submitted to the Fremont-Winema National Forest. While unlikely in the near future (less than 5 years), cumulative impacts associated with reopening a gold mine in Quartz Mountain would be minimal since the site has already been altered from its natural state. The gold mine is approximately 30 miles to the west of Lakeview. The No Action Alternative would maintain existing conditions in the watersheds.

Biological Resources

Grazing of livestock and horses, invasion of non-native plants, and fragmentation by development have also resulted in the cumulative loss of vegetated areas. Taken in concert with other proposed renewable energy projects, including geothermal and solar facilities planned for the Lakeview area and the county, the proposed action would contribute moderate but localized cumulative impacts in Lake County and particularly the immediate Lakeview area with respect to vegetation.

Cultural Resources

Cultural resources eligible for the NRHP under Criterion D, provided that the data recovery plan as detailed in the MOA is followed, there would be no residual impacts. For resources eligible for the NRHP under Criteria A, B, or C, there may still be cumulative effects associated with alterations to integrity of setting, feeling, or association due to the presence of the biomass facility. Resources would partially retain characteristics that make them eligible under Criteria A, B, and C, and cumulative effects from the presence of the project would be moderate.

Land Use

Construction and operation of the proposed biomass facility would permanently alter the rural character of the setting that currently has a small commercial enterprise and an active railroad in the vicinity. Vegetation would be cleared during construction and wildlife habitats would be impacted during construction and operation by the proposed action. Farmland of statewide importance and prime farmland if irrigated and drained would be permanently impacted with the industrial development. Additional development would be expected to occur in the cumulative impact area and not all of the conversion of agricultural or open space land to developed uses in the area would be attributable to the biomass plant, lateral pipeline, and rail spur. Within the Urban Growth Boundary there could be a continued loss of open space as the area is transformed from agricultural use to residential, commercial, or industrial development. The loss of open space could result in visual impacts in the cumulative analysis area. Construction of new buildings and newly landscaped areas may result in visual improvements in some areas. The perception of visual impacts differs between individuals, so it is often difficult to determine if conversion of open space or agricultural fields to residences or other buildings with trees and other landscaping surrounding them is considered adverse or beneficial.

Socioeconomic Resources

Construction and operation of the proposed biomass facility in conjunction with future development in the area would have a positive impact on the region with respect to employment and business opportunities.

3.13 IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Resources may be committed for this project that are irreversible or irretrievable. An irreversible resource commitment is one that limits future options to use a particular nonrenewable resource or a resource that is renewable over a long period of time. Irreversible impacts include the expenditure of federal funding from the DoD and the commitment of land for the facility.

An irretrievable resource commitment is one that eliminates future options to use a particular resource because the resource consumed is non-renewable or non-recoverable. Materials used during construction that would be irretrievable include lubricants, electricity, water, and composite materials. These materials are irretrievable because they are nonrenewable and non-recoverable once used. Nonrenewable fossil fuels used during construction and operation, as well as prime farmland soils underlain by the facility footprint would also be irretrievably impacted. It is possible that after the facility closes, concrete, gravel, and some metals used in the building and at the site could be recycled; though it is possible these materials would not be recycled making them irretrievable resources.

Table 3.16
Summary of Environmental Impacts

Resource	Proposed Action	Preferred Site	Alternative Site	No-Action Alternative
Air Quality and Meteorology Resources	The proposed action would create new facilities for which air emissions do not currently exist. Red Rock has applied for and secured a Standard Air Contaminant Discharge Permit from ODEQ.	Short term- Construction: (—) Operations: (—)	Short term- Construction: (—) Operations: (—)	Short term- Construction: (O) Operations: (O)
Water Resources	The facility would include more than 130,000 square-feet of impervious surfaces. During storm events, impervious surfaces convey stormwater more efficiently than undisturbed areas. Stormwater runoff can increase volumes and concentrate flows and impact surrounding surface waters. As a best management practice, a stormwater retention pond would be designed and constructed to accommodate stormwater runoff volumes from a 1- inch, 24-hour rainfall event.	Short term- Construction: (—) Operations: (—)	Short term- Construction: (—) Operations: (—)	Short term- Construction: (O) Operations: (O)
Biological Resources	The proposed action would require clearing and excavation of vegetation from the 54-acre facility footprint, the temporary workspace for construction of the proposed pipeline, and the temporary workspace and permanent right-of-way for the rail spur.	Short term- Construction: (—) Operations: (—)	Short term- Construction: (—) Operations: (—)	Short term- Construction: (O) Operations: (O)
Cultural Resources	The proposed action would require land clearing and excavation activities on the 54-acre facility footprint, the temporary workspace for construction of the proposed pipeline, and the temporary workspace and permanent right-of-way for the rail spur. A Memorandum of Agreement (MOA) has been approved between the Air Force, the Oregon State Historic Preservation Off1ce (SHPO), and Red Rock. Consultations will continue with the Tribes.	Short term- Construction: (X) Operations: (—)	Short term- Construction: (Unknown) Operations: (Unknown)	Short term- Construction: (O) Operations: (O)
Land Use Requirements/ Restrictions	The proposed action would establish a new industrial biomass facility and pipeline lateral immediately outside of the town boundary of Lakeview in Lake County, Oregon. The proposed facility would include new structures up to approximately 35 feet tall with stacks up to 100 feet tall for venting emissions. Several fuel and water storage tanks and a woody biomass storage, processing, and handling area would also be located within the facility boundary.	Short term- Construction: (—) Operations: (—)	Short term- Construction: (—) Operations: (—)	Short term- Construction: (O) Operations: (O)
Geological Resources and Soils	The proposed action would require land clearing and excavation activities on the 54-acre facility footprint, the temporary workspace for construction of the proposed pipeline lateral, and the temporary workspace and permanent right-of-way for the rail spur.	Short term- Construction: (—) Operations: (—)	Short term- Construction: (—) Operations: (—)	Short term- Construction: (O) Operations: (O)
Noise	The proposed action would have land clearing and excavation activities, construction and fabrication of buildings, process equipment and storage tanks. Heavy equipment and cranes (warning horns) would generate noise. During operation, the facility will generate typical industrial noise from boilers and other process equipment. Delivery trucks would generate traffic noise.	Short term- Construction: (—) Operations: (—)	Short term- Construction: (—) Operations: (—)	Short term- Construction: (O) Operations: (O)
Hazardous Materials and Waste Streams	The proposed plant would gasify up to approximately 170,000 bone dry tons per year of feedstock to produce approximately 7.2 million gallons (MMgal) jet fuel, 7.2 MMgal diesel fuel, and 3.6 MMgal naphtha (a gasoline blendstock). During construction, solid waste would be generated from packing materials, boxes, pallets etc. Construction debris would be disposed of in the local landfill. During operations, batteries and lamp bulbs and other universal wastes would be used in the normal course of business for administrative and industrial buildings. Universal wastes would be disposed of in accordance with state and local disposal regulations. Other office/industrial wastes such as shipping/packing materials, boxes etc. would be recycled or disposed of in the local landfill. Pesticides would be used if necessary for maintenance surrounding buildings but would not be necessary as part of the process. Laboratory reagents would be used in small quantities and spent reagents would be disposed following hazardous waste guidelines. Wood ash would be generated from the process, if a commercially viable beneficial use is not available, the ash would be disposed of in the local landfill.	Short term- Construction: (—) Operations: (—)	Short term- Construction: (—) Operations: (—)	Short term- Construction: (O) Operations: (O)

Table 3.16
Summary of Environmental Impacts

Resource	Proposed Action	Preferred Site	Alternative Site	No-Action Alternative
Utilities and Infrastructure	The proposed action would construct an approximate 3-mile long pipeline lateral from the Ruby Pipeline that would power the biomass plant. Electricity supplied by the local utilities would be used for the administrative building and other ancillary buildings and facility functions. Approximately 500 tons per day (on a dry basis) of woody biomass feedstock would be transported to the proposed facility via 25-ton trucks. The facility would have an estimated 40-50 truckloads delivered approximately every 15 minutes on a 10 to 12 hour receiving day, 5 to 6 days per week.	Short term- Construction: (+) Operations: (—)	Short term- Construction: (+) Operations: (—)	Short term- Construction: (O) Operations: (O)
Socioeconomic Resources	The proposed project would require approximately 31 employees for operations and approximately 50 full-time-equivalent positions for biomass supply with more needed for construction. Most positions would likely be filled by residents of Lake County, with a majority residing in the Town of Lakeview. A new industrial biomass facility would be established immediately outside of Lakeview. The proposed facility would include new structures up to approximately 35 feet tall with stacks up to 100 feet tall for venting emissions. Several fuel and water storage tanks and a woody biomass storage, processing, and handling area would also be located within the facility boundary.	Short term- Construction: (+) Operations: (+)	Short term- Construction: (+) Operations: (+)	Short term- Construction: (O) Operations: (O)

(*) Rating: "+"= (Beneficial Effect); "—" = (Insignificant Adverse Effect); "X"= (Adverse Effect); "O"= (No Effect)

Table 3.17
Summary of Measures to Minimize Impacts

Resource	Measures to Minimize or Reduce Impacts and Associated Best Management Practices
Cultural Resources	Unanticipated Discovery Plan that addresses the steps to be taken if cultural resources or human remains were inadvertently discovered during construction.
Vegetation & Wildlife	Revegetation plan for disturbed areas, controlling the spread of noxious weeds, and minimizing the potential for erosion.
Wetlands & Surface Water	Stormwater retention pond. A Stormwater Pollution Prevention Plan outlining the sediment and erosion control best management practices that would minimize potential impacts on surface waters.

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CHAPTER 4: PREPARERS

4.1 DEPARTMENT OF DEFENSE, AFRL/RXME

John Crabill, Program Manager
James Neely, Program Manager

4.2 MERJENT, INC.

Chad Anderson, Analyst
Dan Born, Analyst
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Suzanne Hambleton, Analyst
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April Holdren, Senior Analyst
Kari Krause, Senior Analyst
Nathan Powell, Analyst
John Seaberg, Senior Analyst
William Vonsee, PE, Principal

4.3 WATSON ENVIRONMENTAL

Leslie Watson, Senior NEPA Analyst

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CHAPTER 5:
PERSONS AND AGENCIES CONSULTED

5.1 NATIONAL HISTORIC PRESERVATION ACT, SECTION 106

The Air Force submitted a consultation letter to the SHPO on December 20, 2013, which oversees the preservation of cultural resources in Oregon. The letter introduced the proposed project and requested comments regarding the potential for the project to affect historic properties. The Air Force also provided a report detailing the background research completed for the project (Krause and Born, 2013) to the SHPO. A copy of the letter is included in this EA, however, enclosures showing sensitive information have been removed. The SHPO indicated that the area has a high probability to yielding significant cultural resources and human burials. They recommended an inventory of the project be completed to identify and evaluate all resources that may be affected.

In addition, Red Rock held a meeting on December 5, 2013 with the SHPO introducing the project and to request information regarding the potential for the project to affect cultural resources. The SHPO recommended that a Phase I cultural resources investigation and above-ground architectural inventory be conducted for the project in all areas that were not previously surveyed. In addition, subsurface testing was recommended at the known archaeological sites to determine eligibility to the NRHP. A cultural resources inventory was completed for the Preferred Site, and a report (Fuld et al., 2014) was provided to Air Force and the SHPO on June 25, 2014. In two letters dated August 1, 2014, the SHPO did not agree with the adverse effect determination for several sites and one above ground structure, and requested a revision to the report. Air Force also requested a minor revision to the report. Red Rock contacted the SHPO on August 6, 2014 to discuss their August 1st comments and responded on August 26, 2014 with clarifications to the meeting minutes wherein Red Rock agreed to the SHPO's recommendations. A revised report was submitted to the SHPO on November 4, 2014 and the Air Force on November 11, 2014 that addressed all of these issues. In a letter dated November 13, 2014, the SHPO did not agree with the adverse effect determination for two sites and recommended additional evaluation of each site. On November 18, 2014, Red Rock attended a meeting with the SHPO to discuss site recommendations and a way forward with revising the report and additional evaluations. The Air Force submitted a letter to the SHPO on December 8, 2014 providing their concurrence with the recommendations presented in the November SHPO comment letters concerning site eligibility and evaluation.

On December 19, 2014, Air Force provided a draft MOA, Treatment Plan, Construction Monitoring Plan, and Unanticipated Discovery Plan to the SHPO for review and comment. On January 22, 2015, the SHPO requested clarification of the language to reflect an adverse effect to the properties. Additional comments were added directly to the draft documents for review by Air Force. The MOA was finalized and signed by the SHPO, Red Rock and Air Force on November 10, 2015. Consultation with the SHPO and Air Force is ongoing.

5.2 NATIVE AMERICAN CONSULTATION

5.2.1 Air Force

The Burns Paiute Tribe submitted a letter to the Air Force, dated December 18, 2013, indicating the traditional use importance of the project area and requesting a tribal monitor be present during all ground disturbing activities. To determine whether any other tribal organizations with historic ties to the project area were aware of any properties of traditional religious and cultural significance within the area, and to invite those organizations to participate in the consultation process specified by the NHPA, Air Force contacted the Klamath Tribes, Burns Paiute Tribe, Confederated Tribes of Warm Springs, the Fort Bidwell Indian Community of the Fort Bidwell Reservation of California, and the Pit River Tribe via phone on February 12 to 13, 2014. A telephone log of these calls is provided in Chapter 7. Letters were sent to the same five tribes on February 10 and 20, 2014. Air Force submitted follow up letters to all tribes on June 12, 2014 inviting those organizations to participate in the consultation process. The Klamath Tribes called the Air Force on February 19, 2014 to request additional information about the project and express the Tribes' historical ties to region and concerns about potential affects to cultural resources and air quality (included in Chapter 7).

On September 9, 2014, the Air Force received a request from the Fort Bidwell Tribe to conduct a visit of the project area with the archaeological team. Email and phone correspondence over the next couple of weeks, i.e., between September 9 and 27, resulted in scheduling a site visit for October 15, 2014; however at the last minute, the Fort Bidwell representative was not able to attend.

The Air Force held a telephone conversation with the Klamath, Burns Paiute, Confederated Tribes of Warm Springs, Fort Bidwell, and Pit River between October 20 and 23, 2014, introducing the project and inviting tribal representatives to a technical meeting planned for November 2014. The Air Force followed-up with an email to each tribe.

On November 5 and 6, 2014, Air Force held a technical exchange meeting with tribal stakeholders to introduce the project and provide the tribes information on the EA process, the results of cultural resources surveys, and begin discussions concerning the proposed MOA (Appendix B). While all five tribes were invited to participate in the meeting, the Klamath Tribes and Burns Paiute Tribe attended. A copy of the agenda and attendee list is included in the EA, however, the minutes discussing sensitive information have been removed.

The Air Force, in a letter dated December 9, 2014, informed the tribes of their concurrence with the revised survey report recommendations and indicated that a MOA, Treatment Plan, Construction Monitoring Plan, and Unanticipated Discovery Plan would be developed for the project. On December 19, 2014, Air Force provided a draft MOA, Treatment Plan, Construction Monitoring Plan, and Unanticipated Discovery Plan to the Klamath Tribes, Burns Paiute Tribe, Confederated Tribes of Warm Springs, the Fort Bidwell Indian Community of the Fort Bidwell

Reservation of California, and the Pit River Tribe for review and comment. Copies of these letters are included in this EA, however, enclosures showing sensitive information have been removed.

The Air Force, in an email to the tribes on January 15, 2015, requested a conference call to discuss the draft MOA and Plans that were provided for review and comment in December 2014. On January 21, 2015, the Air Force sponsored a teleconference with the Burns Paiute Tribe to discuss the technical aspects of the draft MOA. On January 23, 2015, the Burns Paiute Tribe requested clarification of the language to reflect the difference between an archaeological monitor and a cultural resource monitor. Additional comments were provided concerning disposition of artifacts and tribal participation during archaeological excavation and construction. The Klamath Tribes responded to the Air Foce on February 10, 2015, and again on March 16, 2015 expressing concern that their request on tribal participation and artifact disposition would not be included in the MOA and indicated they would object to the project. The Pit River Tribe, between March 6 and 18, 2015, requested a meeting to consult with the Air Force about the project.

The final MOA, Treatment Plan, Construction Monitoring Plan, and Unanticipated Discovery Plan was submitted to the Klamath Tribes, Burns Paiute Tribe, Confederated Tribes of Warm Springs, the Fort Bidwell Indian Community of the Fort Bidwell Reservation of California, and the Pit River Tribe, and the SHPO for signature on July 17, 2015. The Air Force held Government-to-Government consultation meetings with the Pit River Tribe and Klamath Tribes on August 4 and 5, 2015, respectively. The Air Force continues to consult with these tribes on the project.

5.3 RED ROCK CONSULTATION

In addition to government to government consultation with the tribes, Red Rock contacted the Klamath Tribes, Burns Paiute Tribe, Confederated Tribes of Warm Springs, and the Fort Bidwell Indian Community of the Fort Bidwell Reservation of California, to introduce the proposed project and request comments regarding the potential for the proposed project to affect resources of tribal concern. Copies of these letters, dated December 2, 2013, are included in this EA, however, maps showing sensitive information have been removed. The Burns Paiute Tribe and the Klamath Tribes called to request additional information about the project and known cultural sites identified within Preferred Site on December 17, 2013 and January 24, 2014, respectively (included in Chapter 7). The Klamath Tribes sent an email on January 24, 2014 to Red Rock and the Oregon SHPO that expressed their concerns about the possibility of significant cultural resources within the project.

Prior to initiation of site cultural resources field investigations, tribes were contacted via telephone on May 23, 2014 to inform them of the proposed schedule for the inventory. Archaeological permits were secured and forwarded for review by the Klamath Tribes, Burns Paiute Tribe, and the Confederated Tribes of Warm Springs on February 5, 2014. The Burns Paiute Tribe, on February 24, 2014, responded with a request that tribal monitors be employed during the surveys. Requirements of the archaeological permits were completed with the submission of the Phase I cultural resources reports to each tribe on June 26, 2014. On July 7, 2014, the Commission of

Indian Services emailed Red Rock indicating that the report had been received and asked for confirmation that the Burns Paiute Tribe, Klamath Tribes and Confederated Tribes of Warm Springs had received a copy of the report; Red Rock responded on that all three tribes had been provided a copy of the report to review and that the Klamath Tribes participated during the archaeological field work inventory. Based upon comments received from the SHPO, the revised report, was submitted to the Klamath Tribes, Burns Paiute Tribe, Confederated Tribes of Warm Springs, and the Commission on Indian Services on November 10, 2014 and to the Fort Bidwell tribe on December 8, 2014. No subsequent comments have been received from the tribes concerning the results of the inventory and report review.

In response to Air Force's December 2014 submission of the draft MOA, the Klamath Tribes spoke with Red Rock on February 2 and 3, 2015 requesting changes that reflected the Tribe's concern on disposition of artifacts and tribal participation during archaeological excavation and construction. Red Rock followed up with an email dated February 4, 2015 and the Klamath Tribes responded on February 13, 2015 clarifying the Tribe's position on disposition of artifacts and tribal monitoring. Continuous correspondence between February 16 and May 11, 2015 ensued and a meeting was organized with the SHPO to discuss the tribal monitoring agreement.

The Pit River Tribe expressed concerns about use of the Lake County Railway and the potential for fuel cars derailing on tribal land during a telephone call with Red Rock on February 10, 2015. Red Rock provided the Air Force contact information to address their concerns.

Red Rock and the Klamath Tribes participated in teleconference on April 16, 2015 to discuss the MOA status, requested document revisions, as well as details associated with the tribal monitoring agreement. On May 14, 2015, Red Rock, the Klamath Tribes, and the SHPO met to discuss provisions of the tribal monitoring agreement, as well as repatriation of artifacts and human remains, if found during construction.

Red Rock continues to consult with these tribes on the project.

5.4 USFWS, ENDANGERED SPECIES ACT, SECTION 7

USFWS, Klamath Falls Fish and Wildlife Office: Laurie R. Sada, Field Supervisor was contacted via letter on November 27, 2013 for Endangered Species Act, Section 7 consultation. Correspondence is included in Chapter 7.

5.5 ODFW, STATE-LISTED SENSITIVE SPECIES AND HABITATS

ODFW, Salem, Oregon: Martin Nugent, Threatened and Endangered Species Coordinator was contacted via phone on March 18, 2014 regarding consulting with ODFW directly on state-listed species issues. A courtesy consultation letter was sent to Mr. Nugent on April 16, 2014. Correspondence is included in Chapter 7.

5.6 US DEPARTMENT OF AGRICULTURE, NRCS FARMLAND CONVERSION IMPACT RATING FORM

NRCS, Oregon: Ron Raney, Soil Quality Specialist was contacted via phone and letter to discuss the needs for the Farmland Conversion Impact Rating Form AD-1006. Correspondence is included in Chapter 7.

5.7 USACE, CLEAN WATER ACT, SECTION 404 / DSL, AQUATIC RESOURCE MANAGEMENT PROGRAM

5.7.1 Removal-Fill Permit

Red Rock held a teleconference with USACE and DSL on November 25, 2014 to discuss permitting processes and schedule. Both DSL and USACE indicated they would permit the facility site and pipeline together as a single and complete project; however, DSL will issue one permit and USACE will issue two since there is no mechanism in place to combine Nationwide Permits. The agencies also noted that compensatory mitigation would be required for the approximately 0.5 acre of permanent fill proposed at the rail spur.

Another teleconference was held with the agencies on March 11, 2015 to discuss Red Rock's proposed on-site creation mitigation plan. Both agencies preliminarily agreed to the Red Rock's proposal. Red Rock will submit a plan to both agencies concurrent with its permit applications outlining the approach to fulfill mitigation obligations using on-site wetland creation.

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CHAPTER 6:
GLOSSARY AND ACRONYMS

°F	Fahrenheit
µg/m3	micrograms per cubic meter
ACDP	Air Contaminant Discharge Permit
ACHP	Advisory Council on Historic Preservation
ADBPP	Advanced Drop-In Biofuel Production Project
AFRL/RXM	Manufacturing and Industrial Technologies Division of the Materials and Manufacturing Directorate, Air Force Research Laboratory
APE	area of potential effect
AQCRs	Air Quality Control Regions
ASTM	American Society for Testing and Materials
BcF	billion cubic feet
Btu	British thermal units
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH4	methane
CO	carbon monoxide
CO2	carbon dioxide
$CO_{2\text{-eq}}$	carbon dioxide equivalents
Commission	Oregon Fish and Wildlife Commission
CWA	Clean Water Act
dBA	A-weighted decibels
DEQ	Department of Environmental Quality
DoD	Department of Defense
DOGAMI	Department of Geology and Mineral Industries
DPA	Defense Production Act
DSL	Department of State Lands
EA	Environmental Assessment
EFU	exclusive farm lands
EIAP	Environmental Impact Analysis Process
EISA	Energy Independence and Security Act
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
FEMA	Federal Emergency Management Agency
GHG	greenhouse gases
gpm	gallons per minute
HAPs	hazardous air pollutants
IBPE	Integrated Biofuel Production Enterprise
LIFC	Lakeview Interagency Fire Center
MGY	million gallons per year
MMBtu/hr	million British thermal units per hour
MMGaL	million gallons
MOA	Memorandum of Agreement
mph	miles per hour
MSW	municipal solid waste

NAAQS	National Ambient Air Quality Standards
NAGPRA	Native Active Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NNSR	Nonattainment New Source Review
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge and Elimination System
NPOE	non-permitted operational emissions
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NWI	National Wetland Inventory
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
ORS	Oregon Revised Statutes
Pb	lead
PD	Presidential Determination
PEM	palustrine emergent
PFO	palustrine forested
PGA	peak ground acceleration
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppb	parts per billion by volume
ppm	parts per million
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub shrub
Red Rock	Red Rock Biofuels
RFS	Renewable Fuel Standard
RINS	Renewable Identification Numbers
RMP	Risk Management Plan
SER	Significant Emission Rate
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasures
TIA	Technology Investment Agreements
tpy	tons per year
USACE	US Army Corps of Engineers
USC	US Code
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
VOC	volatile organic compound
WQC	water quality certificiation

CHAPTER 7
AGENCY CORRESPONDENCE AND RESPONSES

The following documents reflect communications with stakeholders, agencies, and Tribes associated with production of the EA. The documents are categorized as follows:

Memorandum of Agreement (MOA)

1. Letters/Correspondence
2. Call Logs
3. Government to Government Consultations

Environmental Assessment (EA)

1. Notifications, Permits
2. Letters/Correspondence
3. Call Logs/Notes

Archaeological Investigations Northwest, Inc. (AINW) – Cultural Resources Investigation

1. Letters/Correspondence
2. Call Logs/Notes

Project Information/Introduction

1. Letters/Correspondence
2. Call Logs

MOA

Letters

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

17 JUL 2015

MEMORANDUM FOR CHARLOTTE RODRIQUE, CHAIRPERSON
BURNS PAIUTE TRIBES
100 PASIGO
BURNS OR 97720

FROM: AFRL/RX
2977 Hobson Way, Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Red Rock Biofuels' Advanced Drop-in Biofuel Production Project, Lake County, Oregon; Final Memorandum of Agreement with Attachments

Reference: 36 CFR Part§800, Protection of Historical Properties & Archeological Resources, National Historical Preservation Act (NHPA)

1. The Air Force's Defense Production Act Title III Office has proposed a project to partner with Red Rock Biofuels, a commercial company, to develop an Advanced Drop-in Biofuel Production facility near the town of Lakeview, Oregon. Attached you will find a copy of the final Memorandum of Agreement (MOA) for the project. This MOA was previously sent to you for review on 19 December 2014. We received your letter of 23 January 2015 and your comments were taken into consideration in this final document. We are conducting final processing of this MOA, Treatment Plan, and Construction Monitoring and Unanticipated Discoveries Plan and are requesting the "concurring parties" to the MOA sign their respective signature page and return it to AFRL. We would appreciate your response by 7 August 2015. After the MOA is signed, a fully executed copy will be forwarded for your records. Thank you for working with us to complete this in the expedited timeframe.

2. Cultural resource investigations have been performed to address Section 106 of the National Historic Preservation Act of 1966 (as amended), and its implementing regulation, 36 CFR 800. The investigations included an archaeological survey and a historic property survey. Eleven historic resources were identified in the project area but it was determined that there would be no adverse effect to these resources. Six archeological sites were identified that are either eligible or unevaluated and may be eligible for listing in the National Register of Historic Places (NRHP). The results from these surveys were previously communicated to you. Alongside federal and state policies, the attached MOA, Treatment Plan, and Construction Monitoring and Unanticipated Discoveries Plan are the instruments established to govern the treatment and protection of these cultural resources.

3. In parallel with the cultural resource efforts, an Environmental Assessment (EA) for this project for NEPA compliance is nearing completion and will be available for your review in about a month. The EA will reference this MOA and will substantiate the measures that have been and will continue to be taken to preserve and protect properties that are of historical, religious and cultural significance.

4. As stated above, we respectfully request that you sign your respective page attached to the MOA and return it to this office by 7 August 2015. If you anticipate a delay in your response, please call or email James Neely, Program Manager, and advise of the earliest date you anticipate being able to sign and return the MOA. Mr. Neely can be reached at james.neely@us.af.mil or (937) 904-4374.

5. Please contact us should you have any specific questions or if issues arise which warrant our personal involvement. Thank you for your assistance.

THOMAS A. LOCKHART, SES
Director
Materials and Manufacturing Directorate

Attachments:
1. Memorandum of Agreement
2. Attachment 1 – Red Rock Project APE
3. Attachment 2 - Treatment Plan
4. Attachment 3 - Construction Monitoring and Unanticipated Discoveries Plan
5. Appendix A – Tribal Position Paper

cc:
Ms. Diane Teeman, Tribal Historical Preservation Officer (THPO)

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

17 JUL 2015

MEMORANDUM FOR ROBERT BRUNOE, MANAGER
NATURAL RESOURCES
CONFEDERATED TRIBES OF WARM SPRINGS
1233 VETERANS STREET
WARMS SPRINGS OR 97761

FROM: AFRL/RX
2977 Hobson Way, Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Red Rock Biofuels' Advanced Drop-in Biofuel Production Project, Lake County, Oregon; Final Memorandum of Agreement with Attachments

Reference: 36 CFR Part§800, Protection of Historical Properties & Archeological Resources, National Historical Preservation Act (NHPA)

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5. Please contact us should you have any specific questions or if issues arise which warrant our personal involvement. Thank you for your assistance.

THOMAS A. LOCKHART, SES
Director
Materials and Manufacturing Directorate

Attachments:
1. Memorandum of Agreement
2. Attachment 1 – Red Rock Project APE
3. Attachment 2 - Treatment Plan
4. Attachment 3 - Construction Monitoring and Unanticipated Discoveries Plan
5. Appendix A – Tribal Position Paper

cc:
Ms. Sally Bird, Cultural Resource Program Manager

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

17 JUL 2015

MEMORANDUM FOR BERNOLD N. POLLARD, CHAIRMAN
FORT BIDWELL INDIAN COMMUNITY OF THE FORT
BIDWELL RESERVATION OF CALIFORNIA
PO BOX 129
FORT BIDWELL CA 96112

FROM: AFRL/RX
2977 Hobson Way, Rm 215
Wright-Patterson AFB, OH 45433-7734

SUBJECT: Red Rock Biofuels' Advanced Drop-in Biofuel Production Project, Lake County, Oregon; Final Memorandum of Agreement with Attachments

Reference: 36 CFR Part§800, Protection of Historical Properties & Archeological Resources, National Historical Preservation Act (NHPA)

1. The Air Force's Defense Production Act Title III Office has proposed a project to partner with Red Rock Biofuels, a commercial company, to develop an Advanced Drop-in Biofuel Production facility near the town of Lakeview, Oregon. Attached you will find a copy of the final Memorandum of Agreement (MOA) for the project. This MOA was previously sent to you for review on 19 December 2014. We did not receive any formal comments from the Fort Bidwell Indian community. We are conducting final processing of this MOA, Treatment Plan, and Construction Monitoring and Unanticipated Discoveries Plan and are requesting the "concurring parties" to the MOA sign their respective signature page and return it to AFRL. We would appreciate your response by 7 August 2015. After the MOA is signed, a fully executed copy will be forwarded for your records. Thank you for working with us to complete this in the expedited timeframe.

2. Cultural resource investigations have been performed to address Section 106 of the National Historic Preservation Act of 1966 (as amended), and its implementing regulation, 36 CFR 800. The investigations included an archaeological survey and a historic property survey. Eleven historic resources were identified in the project area but it was determined that there would be no adverse effect to these resources. Six archeological sites were identified that are either eligible or unevaluated and may be eligible for listing in the National Register of Historic Places (NRHP). The results from these surveys were previously communicated to you. Alongside federal and state policies, the attached MOA, Treatment Plan, and Construction Monitoring and Unanticipated Discoveries Plan are the instruments established to govern the treatment and protection of these cultural resources.

3. In parallel with the cultural resource efforts, an Environmental Assessment (EA) for this project for NEPA compliance is nearing completion and will be available for your review in about a month. The EA will reference this MOA and will substantiate the measures that have been and will continue to be taken to preserve and protect properties that are of historical, religious and cultural significance.

4. As stated above, we respectfully request that you sign your respective page attached to the MOA and return it to this office by 7 August 2015. If you anticipate a delay in your response, please call or email James Neely, Program Manager, and advise of the earliest date you anticipate being able to sign and return the MOA. Mr. Neely can be reached at james.neely@us.af.mil or (937) 904-4374.

5. Please contact us should you have any specific questions or if issues arise which warrant our personal involvement. Thank you for your assistance.

THOMAS A. LOCKHART, SES
Director
Materials and Manufacturing Directorate

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cc:
Mr. Kenneth Sam, Tribal Historical Preservation Officer (THPO)

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

17 JUL 2015

MEMORANDUM FOR DONALD C. GENTRY, CHAIRMAN
KLAMATH TRIBES
PO BOX 436
CHILOQUIN OR 97624

FROM: AFRL/RX
2977 Hobson Way, Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Red Rock Biofuels' Advanced Drop-in Biofuel Production Project, Lake County, Oregon; Final Memorandum of Agreement with Attachments

Reference: 36 CFR Part§800, Protection of Historical Properties & Archeological Resources, National Historical Preservation Act (NHPA)

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cc:
Mr. Perry Chocktoot, Cultural & Heritage Director

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

17 JUL 2015

MEMORANDUM FOR MICKEY GEMMILL, CHAIRMAN
PIT RIVER TRIBE
36970 PARK AVE
BURNEY CA 96013

FROM: AFRL/RX
2977 Hobson Way, Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Red Rock Biofuels' Advanced Drop-in Biofuel Production Project, Lake County, Oregon; Final Memorandum of Agreement with Attachments

Reference: 36 CFR Part§800, Protection of Historical Properties & Archeological Resources, National Historical Preservation Act (NHPA)

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Director
Materials and Manufacturing Directorate

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cc:
Ms. Morning Star Gali, Tribal Historical Preservation Officer (THPO)

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

17 JUL 2015

MEMORANDUM FOR JEFF MANTERNACH
CHIEF FINANCIAL OFFICER
RED ROCK BIOFUELS
736 WHALERS WAY
BLDG G, SUITE 100
FORT COLLINS CO 80525

FROM: AFRL/RX
2977 Hobson Way, Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Red Rock Biofuels' Advanced Drop-in Biofuel Production Project, Lake County, Oregon; Final Memorandum of Agreement with Attachments

Reference: 36 CFR Part§800, Protection of Historical Properties & Archeological Resources, National Historical Preservation Act (NHPA)

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THOMAS A LOCKHART, SES
Director
Materials and Manufacturing Directorate

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

17 JUL 2015

MEMORANDUM FOR CHRISSY CURRAN
INTERIM DEPUTY SHPO
OREGON PARKS AND RECREATION DEPT.
725 SUMMER STREET NE, SUITE C
SALEM OR 97301-1266

FROM: AFRL/RX
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Red Rock Biofuels' Advanced Drop-in Biofuel Production Project, Lake County, Oregon; Final Memorandum of Agreement with Attachments; Oregon State Historical Preservation Office (SHPO) 14-0042

Reference: 36 CFR Part§800, Protection of Historical Properties & Archeological Resources, National Historical Preservation Act (NHPA)

1. The Air Force's Defense Production Act Title III Office has proposed a project to partner with Red Rock Biofuels, a commercial company, to develop an Advanced Drop-in Biofuel Production facility near the town of Lakeview, Oregon. Attached you will find a copy of the final Memorandum of Agreement (MOA) for the project. This MOA was previously sent to you for review on 19 December 2014. We received your comments on or about 22 January 2015 and your comments were taken into consideration in this final document. We are conducting final processing of this MOA, Treatment Plan, and Construction Monitoring and Unanticipated Discoveries Plan and are requesting that the "required" and "invited" signatories and "concurring parties" to the MOA sign their respective signature page and return it to AFRL. We would appreciate your response by 7 August 2015. After the MOA is signed, a fully executed copy will be forwarded for your records. Thank you for working with us to complete this in the expedited timeframe.

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THOMAS A. LOCKHART, SES
Director
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6. MOA Comment Matrix

cc:
Mr. Dennis Griffin, State Archaeologist

MEMORANDUM OF AGREEMENT

AMONG

THE UNITED STATES AIR FORCE,

THE OREGON STATE HISTORIC PRESERVATION OFFICE, AND

RED ROCK BIOFUELS, LLC, REGARDING THE RED ROCK BIOFUELS INTEGRATED BIOFUEL PRODUCTION ENTERPRISE PROJECT IN LAKE COUNTY OREGON

FOR TREATMENT OF HISTORIC PROPERTIES INCLUDING:

35LK3991, 35LK3992, 35LK3994, 35LK4694, 35LK4696 AND 35LK4697

Whereas, Red Rock Biofuels (Applicant), a privately-owned company, applied for funding assistance from the United States Air Force (AF) Defense Production Act (DPA) Title III Program Advanced Drop-in Biofuel Production Program (ADBPP) for the Red Rock Biofuels Project (Project); and

Whereas, the ADBPP includes project development, engineering activities, construction and operation of a commercially viable Integrated Biofuel Production Enterprise (IBPE); specific equipment purchases, project and operational development and shakedown testing will be partially funded through an AF Technology Investment Agreement (TIA) with the Applicant; and

Whereas, the Air Force (AF) is responsible for Section 106 compliance on this Project, because it is providing a one-time sum to assist the Applicant in procuring and integrating the proposed technology and equipment, executing the technical start-up and shakedown, and validating the Applicant's proposed plans; while incurred costs and risks are the Applicant's sole responsibility; and

Whereas, the Applicant is solely responsible for choosing the proposed site and technologies planned for the construction, operation and maintenance of the IBPE on privately-owned land within Lake County, Oregon adjacent to the town of Lakeview; and

Whereas, the Applicant, as the party responsible for construction and for implementation of the Archaeological Treatment Plan for resolving adverse effects to Historic Properties, has been invited to be a Required Signatory to this Agreement; and

Whereas, the AF has defined the Project's Area of Potential Effect (APE), as depicted in Attachment 1, to include the proposed biofuels plant footprint and natural gas pipeline corridor (Lake Railway right-of-way) where direct effects may occur and a broader area where indirect project effects were considered, and any changes to the APE will result in production of an updated APE map to be attached to this agreement; and

Whereas, after consultation pursuant to 36 CFR Part 800, the AF and the Oregon State Historic Preservation Office (SHPO), have agreed that "eligible" archaeological sites 35LK3991, 35LK3992, 35LK3994, and 35LK4694, and "unevaluated" archaeological sites 35LK4696 and 35LK4697, which

cannot be avoided within the facility footprint and associated pipeline, will be treated as "eligible" for inclusion on the National Register of Historic Places (NRHP) (i.e. Historic Properties) pursuant to 36 CFR §800 and that the undertaking will have an adverse effect on these archaeological resources, and the proposed measures are designed to mitigate the adverse effect; and

Whereas, the Project is also subject to the requirements of Oregon Revised Statute (ORS) §358.905-358.961, which, in part, provides protection for archaeological objects defined as 75 years of age or older. The Project is also subject to requirements of ORS §97.740-97.990, which define measures to protect Native American cairns and graves and associated cultural items, and ORS §390.235, which requires the Applicant to apply for a state archaeology permit with a research design before any ground disturbing activities can occur within a known site. The Applicant is responsible for addressing the requirements of these state statutes and rules; and

Whereas, the AF has consulted with the Burns Paiute Tribe, Confederated Tribes of the Warm Springs Indian Reservation of Oregon, Fort Bidwell Indian Community of the Fort Bidwell Reservation of California, Klamath Tribes and Pit River Tribes (collectively "Tribes"), and in the development of this MOA have asked the Tribes to sign this MOA as Concurring Parties.; and

Whereas, the Project is not on Tribal lands but does have the potential to affect Historic Properties, as defined by Section 106, culturally significant to the Tribes; and

Whereas, in accordance with 36 CFR §800. 6(a)(1), the AF notified the Advisory Council on Historic Preservation (ACHP) of their intent to prepare this MOA with specific documentation and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR §800.6(a)(1)(iii), and

Whereas, in accordance with 36 CFR § 800.6(c)(1), a signatory has the sole authority to execute, amend, or terminate the agreement. The federal agency and the SHPO are signatories. Concurring parties (Tribes), in accordance with 36 CFR § 800.6(c)(3), means parties invited to concur in the agreement document but who do not have the authority to amend or terminate the agreement. The Applicant is an invited signatory in accordance with 36 CFR § 800.6(c)(2) and has the authority to amend and terminate the agreement.

Now therefore, the AF, the SHPO and Applicant agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on Historic Properties.

STIPULATIONS

The AF, in cooperation with the Applicant, will ensure that the following measures are carried out:

I. General Requirements and Standards:

A. As conditions of the award under the TIA and DPA Title III Program, AF shall require the Applicant to execute and fund the assigned stipulations in this MOA under AF oversight pursuant to 36 CFR §800.2(a)(3), including but not limited to, inventory, evaluation, treatment,

tribal consultation, public outreach, any post-construction data recovery, discoveries, analysis, reporting, curation, training, and all other actions necessary to resolve adverse effects, as directed by the AF; and

B. The AF shall ensure that all actions addressed in this MOA involving the identification, evaluation, treatment and reporting of historical properties, as defined by the Secretary of the Interior's Standards and Guidelines for Archaeological and Historical Preservation (48 FR 44716, since amended), shall be carried out under the direct supervision of a person(s) meeting the Secretary of Interior's Professional Qualification Standards for archaeological, architectural history, or history, as appropriate (36 CFR Part 61).

C. All actions addressed in this MOA require adherence to technical standards published by the SHPO, including but not limited to, the Guidelines for Conducting Field Archaeology in Oregon (2013) and State of Oregon Archaeological Reporting Guidelines (2011). In addition, the Project must comply with all state statutes which govern the permitting of archaeological investigations on private and non-federal public lands.

D. Signatories of this agreement shall keep sensitive cultural resources information confidential to the extent allowed by state and federal law.

E. All resource management documents as specified under the Agreement (including the Archaeological Treatment Plan, Construction Monitoring and Unanticipated Discovery Plan, and summary reports) will be completed prior to any construction with the exception of final reports and related materials as specified in stipulations II.D(a) and II.E.

II. Stipulations for Resolving Adverse Effects to Historic Properties:

A. Archaeological Treatment Plan

a. The Archaeological Treatment Plan (Attachment 2) will address additional site excavation needed to better understand the archaeological complexity of sites 35LK4696 and 35LK4697, which are treated as eligible, in addition to site 35LK3991 in order to test areas previously unexcavated and address the level of effect that will result from project construction.

i. Upon completion of supplemental archaeological testing and evaluation detailed in the Archaeological Treatment Plan, further consultation and approval regarding potential additional mitigation shall be conducted by the Applicant.

b. The Archaeological Treatment Plan will address the eligible and unevaluated archaeological sites identified at the time of the execution of this MOA by the Applicant and will guide the actions of cultural resources professionals during its implementation. The plan shall:

i. Describe the location-specific Project actions that have the potential to adversely affect Historic Properties;

ii. Describe methods that will be used to recover and process archaeological material and information, including 1) methods proposed to establish site

boundaries, locate presence/absence of buried features or areas of significant artifacts, to recover different types of site assemblages (e.g., appropriate methods for Native American sites vs. historic sites); 2) potential special or analytical methods that may be applied to recovered resources (e.g., C-14 dating, obsidian hydration studies, flotation, etc.); and 3) artifact processing parameters and laboratory procedures;

iii. Outline reporting requirements and appropriate timeframe for analysis; and

iv. Identify requirements and process approaches for final curation of artifacts and information associated with the Project.

c. The Archaeological Treatment Plan is attached to this MOA as Attachment 2. In the event the signatories cannot agree regarding treatment, the procedures for dispute resolution in stipulation F(a) will be implemented.

B. Project Construction

a. Construction Monitoring and Unanticipated Discovery Plan

i. Construction Monitoring

1. The Applicant will prepare a plan to address construction monitoring methods and reporting. The Construction Monitoring Plan (Attachment 3) will include provisions for selecting Archaeological Monitors and work plans for monitoring duties.
2. The interested and affected tribes shall be afforded opportunity to participate directly as Tribal Cultural Resource Monitors during Project construction activities. Tribal Cultural Resource Monitors must meet qualifications as specified by the respective Tribal entities.

ii. Unanticipated Discoveries of Cultural Material or Human Remains

1. The Applicant will prepare a plan to address unanticipated discoveries of archaeological sites and/or human remains during construction. This Unanticipated Discovery Plan (UDP) (Attachment 3) will define the Applicant's and the AF's responsibilities under ORS 97.740. The UDP will include directives for stopping work, protecting the discovery, notifying the AF and appropriate authorities, assessing the significance of the find, consulting with the appropriate Tribes, signatories and concurring parties, and the conditions for resuming work.

iii. The Construction Monitoring and Unanticipated Discovery Plan is attached to this MOA as Attachment 3. In the event the signatories cannot agree regarding monitoring, the procedures for dispute resolution in stipulation F(a) will be implemented.

b. Adjustments to the Area of Potential Effect (APE)

i. If the Applicant proposes an adjustment to the APE where no previous intensive inventory or Tribal consultation has been conducted, the Applicant shall survey the APE of the proposed area in a manner consistent with the requirements of

SHPO Field Archaeology Guidelines (*Guidelines for Conducting Field Archaeology in Oregon*, Oregon State Historic Preservation Office, November 2013). The survey shall be conducted by persons meeting the Secretary of Interior's Professional Qualification Standards for archaeological, architectural history, or history, as appropriate (36 CFR Part 61) and also meeting the State of Oregon's "Qualified Archaeologist" definition as noted in ORS 390.235(6)(b).

ii. The Applicant will submit a copy of an addendum to the survey report to the signatories for a 30 days review and comment period, before ground disturbing activities within the new APE could commence. The addendum report shall be a stand-alone report which includes all appropriate sections of a standard report per SHPO reporting guidelines (*State of Oregon Archaeological Reporting Guidelines*, Oregon State Historic Preservation Office, July 2011). Background and environmental data can reference that of earlier major reports. The addendum report will include a map distributed to all signatories of this agreement, and replace the map from initial production of this agreement.

C. Curation

a. The Applicant shall ensure that all collections and associated records resulting from identification and data recovery efforts are curated in accordance with Oregon State Museum of Natural and Cultural History's curation standards and federal curation standards (36 CFR 79). For collections from public lands, all costs of curation into perpetuity shall be borne by the Applicant. Those collections to be returned to private land owners (at private land owner's request) will be maintained in accordance with state guidelines until completion of analysis and subsequent return. It is possible that during the life of this agreement the Applicant may, in fact, become the full or partial landowner of the Project's developed or undeveloped land. The Signatories will be notified if such change of ownership occurs which potentially might result in an amendment to this agreement. Additionally, the landowners may donate artifacts to a Tribal or regional museum for curation at a future date, if the facility meets federal curation standards (36 CFR 79). In this case, the Applicant and the landowners are not responsible for any cost of curation.

b. Documents and artifacts generated and slated for curation will be curated at the Oregon State Museum of Natural and Cultural History (Museum) in Eugene, Oregon. If a curation agreement is not in place, the Applicant will finalize curation agreements prior to implementation of the Archaeological Treatment Plan, and will notify the AF within 15 days of receipt of the final curation agreement.

c. All materials and associated records slated for curation will be delivered to the Museum within 60 days after delivery of the final report. This schedule does not pertain to human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony, which may require special processing and/or an amendment of this Agreement. Artifacts requested to be returned to private landowners will be held for a minimum of 30 days following the completion of the final

report to permit the appropriate Tribes time to review the collected material to insure that no funerary or sacred objects are present or objects of cultural patrimony. If a tribe identifies such an object, it shall be reserved from being returned to the landowner until a formal repatriation process can be undertaken and reviewed by the Museum.

D. Reporting
   a. All final reports and related materials outlined in the MOA and Archaeological Treatment Plan will be submitted to the AF, SHPO, Tribes, Commission on Indian Services, and Oregon State Museum of Natural and Cultural History within one year after the end of the field investigations associated with this MOA and Archaeological Treatment Plan, unless otherwise agreed to by the required signatories to the MOA. All submittals will be made in one bound hard copy and in electronic format unless other provisions are made and agreed to by the required signatories to this Agreement.

E. Notice to Proceed
   a. The AF will allow construction in those portions of the Project that 1) do not contain Historic Properties, or 2) that do contain Historic Properties once the agreed upon field work/treatment as specified in the Archaeological Treatment Plan is completed and approved by the AF and the SHPO, in accordance with the procedures outlined in the Archaeological Treatment Plan, and taking into account any comments or concerns expressed by the Tribes.
      iii. The Applicant will prepare a report summarizing the fieldwork and preliminary results within 15 days of completion of fieldwork, and request a notice to proceed with construction from the AF.
      iv. The AF will distribute the Summary Letter Report to the MOA signatories and consulting parties for a 15-day review and comment period. The review period will begin at date of receipt of the report. Following AF acceptance of the report, the AF may authorize, in writing, the Applicant to proceed with treatment and/or construction or use of the area. Should the signatories fail to reach agreement concerning the resolution of adverse effects, the procedures in stipulation II.F(a) will be implemented.

F. Other Provisions
   a. Dispute Resolution
      i. Should any signatory or invited signatory to this MOA object to actions proposed or the manner in which the terms therein are implemented, the AF will consult with all parties and attempt to resolve objection. If the AF determines that the dispute cannot be resolved, the AF will forward all documentation relevant to the dispute, including the proposed AF resolution, to the ACHP. The ACHP will provide the AF with its advice on resolving the dispute within thirty (30) days of receiving documentation. Upon receipt of the ACHP advice, the AF will provide a written response to the dispute which

takes into account the ACHP's comments and MOA signatories. The AF will then proceed according to its final decision.

ii. If the ACHP does not provide advice within thirty (30) days, the AF will provide a written response to the dispute which takes into account any timely comments received from the signatories and concurring parties to the MOA. The AF will then proceed according to its final decision.

iii. The AF's responsibilities to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

b. Amendments to the Agreement: Amendments to this MOA will be sent to all signatories for a 15-day review period. This MOA may be amended when such an amendment is agreed to in writing by the required signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

G. Compliance with the Anti-Deficiency Act

a. The terms of this agreement shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require the AF to obligate or make a payment of funds in violation of the Anti-Deficiency Act (31 USC §1341).

H. Duration of the Agreement: This MOA will be enforced until curation per stipulation II.C and reporting per stipulation II.D are completed and the AF notifies the parties that the agreement's requirements have been met, or the AF notifies the MOA signatories that the Applicant's proposed project will not be federally funded and executed, or five years from the date of the agreement of the MOA, whichever comes first.

I. Termination of the Agreement: Any required signatory may terminate this MOA by providing 30 days written notice to the other signatories. The required signatories will consult during the 30-day notice period prior to termination to seek agreement on amendments or other actions that will avoid termination. If the required signatories individually terminate their participation in the MOA, then the MOA is terminated in its entirety. In the event of termination, and prior to work continuing on the Project, the AF must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The AF shall notify the signatories as to the course of action it will pursue.

J. Agreement to Archaeological Treatment Plan and Construction Monitoring and Unanticipated Discovery Plan: The Archaeological Treatment Plan and Construction Monitoring and Unanticipated Discovery Plan are attachments to this MOA. Signing of the MOA indicates agreement to the MOA, Archaeological Treatment Plan, and Construction Monitoring and Unanticipated Discovery Plan.

Execution of this MOA by the AF and the SHPO, and implementation of its terms, is evidence that the AF has taken account the effects of this Project on historical properties and afforded the ACHP an opportunity to comment.

REQUIRED SIGNATORY 1 of 2:

NAME Date
Title, Department of the AF

REQUIRED SIGNATORY 2 of 2:

Chrissy Curran Date
Deputy SHPO, Oregon Parks and Recreation

INVITED SIGNATORY 1 of 1:

NAME Date
Title, Red Rock Biofuels

CONCURRING PARTY 1 of 5:

NAME Date
Title, Burns Paiute Tribe

CONCURRING PARTY 2 of 5:

NAME Date

Title, Confederated Tribes of the Warm Springs Indian Reservation of Oregon

CONCURRING PARTY 3 of 5:

NAME Date

Title, Fort Bidwell Indian Community of the Fort Bidwell Reservation of California

CONCURRING PARTY 4 of 5:

NAME Date
Title, Klamath Tribes

CONCURRING PARTY 5 of 5:

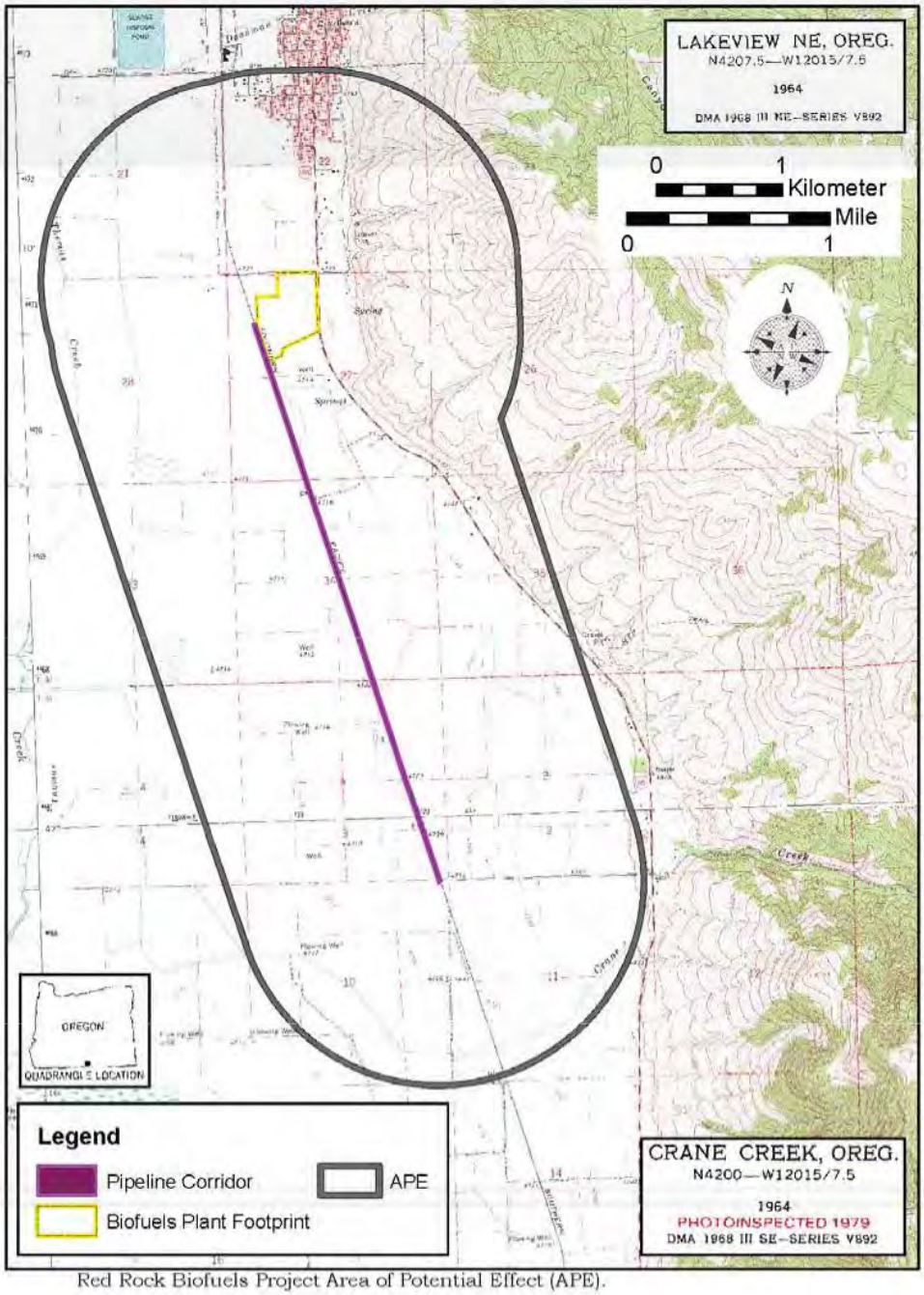
NAME Date
Title, Pit River Tribes

ATTACHMENT 1

Map of Area of Potential Effect (APE)

for the Red Rock Biofuels Project

United States Air Force
Red Rock Biofuels Project Memorandum of Agreement



Red Rock Biofuels Project Area of Potential Effect (APE).

Preserving America's Heritage

May 5, 2015

Mr. Jeffrey K. Smith
Tittle III Executive Agent Program Manager
Department of the Air Force
Air Force Research Laboratory
2977 Hobson Way, Room 215
Wright-Patterson AFB, OH 45433-7734

Ref: ***Proposed Advanced Drop-in Biofuels Production Project for Integrated Biofuel Production Enterprise***
Lakeview, Lake County, Oregon

Dear Mr. Smith:

On April 17, 2015, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on properties listed on and eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases,* of our regulations, "Protection of Historic Properties" (36 CFR Part 800) does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or another party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR 800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Oregon State Historic Preservation Officer (SHPO) and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the Agreement and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require further assistance, please contact Katharine Kerr at 202-517-0216, or via email at kkerr@achp.gov.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
401 F Street, Suite 308 ▯ Washington, DC 20001-2637
Phone: 202-517-0200 ▯ Fax: 202-517-6381 ▯ achp@achp.gov ▯ www.achp.gov

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

APR 16 2015

MEMORANDUM FOR: MR REID NELSON
DIRECTOR, OFFICE OF FEDERAL AGENCY PROGRAMS
ADVISORY COUNCIL ON HISTORIC PRESERVATION
OLD POST OFFICE BUILDING
1100 PENNSYLVANIA AVE NW, SUITE 803
WASHINGTON DC 20204

FROM: AFRL/RXME
2977 Hobson Way, Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Anticipated Adverse Effects and Memorandum of Agreement for the Red Rock Biofuels Project in Lake County, OR

1. On or about 26 February 2014, in accordance with 36 CFR Part 800, correspondence was forwarded to your office regarding the Air Force Defense Production Act (DPA) Title III Program's initiation of Section 106 Consultation for the Red Rock Biofuels Project in Lake County, OR. This correspondence contained information on the Red Rock Biofuels Project, as well as copies of the initial consultation letters that were sent to the Oregon State Historic Preservation Office (SHPO) and affected Tribes.

2. Archeological surveys conducted by the firm Archeological Investigations North West (AINW) on behalf of Red Rock Biofuels have indicated that the project site contains several archeological resources that are either eligible or currently unevaluated but will be treated as eligible for listing on the National Register of Historic Places. The DPA Title III Office, as the lead federal agency for the Red Rock Biofuels Project, plans to draft a Memorandum of Agreement (MOA) and accompanying Treatment Plan, Construction Monitoring and Unanticipated Discoveries Plan that will define the path forward for treatment of these resources. The Treatment Plan will describe the process by which potential adverse effects to these resources will be minimized or mitigated.

3. For your reference and review, attached to this letter are the following: follow-up summary of the Proposed Program Action; summary of the Cultural Resource Survey and Results, which includes information on both historic and archeological resources and an explanation of the adverse effects; copy of the Cultural Resources Survey Permit; copies of correspondence with the Consulting Parties, Oregon SHPO and interested Tribes; and a draft of the MOA, Treatment Plan, Construction Monitoring and Unanticipated Discoveries Plan.

4. If the Council wishes to participate in the development of this MOA and associated plans, please notify us within 15 days of receiving this letter. Please direct any questions to myself, James Neely, AFRL's Title III Project Manager, at (937) 904-4374 or james.neely@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

6 Attachments:
1. Proposed Program Action Overview
2. Summary of Cultural Resource Survey and Results
3. Copy of Cultural Resources Survey Permit
4. Copies of Correspondence with the Oregon SHPO
5. Copies of Correspondence with Tribes
6. Draft MOA with attached APE map, Treatment Plan, Construction Monitoring and Unanticipated Discoveries Plans

Burns Paiute Tribe
Culture & Heritage Department
100 Pasigo St
Burns, OR 97720
Phone (541)573-8096
Fax (541)573-2323

January 23, 2015

James A. Neely, Defense Production Act Title III Deputy Program Manager

RE: Draft MOA Burns Paiute Comments Redrock Biofuels Project, Lake Co., Oregon

AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

Dear Mr. Neely;

Thank you for your recent coordination of a teleconference to discuss the technical aspects of the draft MOA for the Redrock Biofuels Project proposed for Lake County, Oregon. I am writing to reiterate some of the points I introduced in our teleconference and bring to your attention other recommended amendments I request for inclusion.

I want to re-address the issue of the cultural meaning and value of the construction site area and the materials deposited there. Because our worldview is not something that is widely understood by majority culture, I want to briefly discuss Northern Paiute beliefs that guide our position on cultural resource management issues. Our goal is to reduce confusion and increase cross-cultural communication and understanding. I apologize if I did not find the words to make it make sense on Wednesday, I am hoping to do better herein.

The living members of the Burns Paiute Tribe have a moral imperative to do all they can to protect the dead, and the possessions of the dead. We have many practices associated with death and burial that must be adhered to in order to do what is right. Our Northern Paiute souls are comprised of multiple parts which in life and upon death serve different roles. Upon death after a period of time, one of the parts of the soul travels to the heavens (near the Milky Way) and remains, another commutes back and forth between the physical human remains and the part of the soul in the heavens, another part remains within the body of the deceased and another part is attached to the body, the immediate burial landscape, and every other physical item with which the deceased ever made physical contact. The

continued wellness of the deceased's soul is dependant upon each part being allowed to continue to carry out its function. Should the living fail to do everything they can to protect the "wellness" of the deceased, great harm including death can come to the living (ghost sickness). For these reasons we take the responsibility of doing everything we can to protect our ancestors remains very seriously. It is one of our primary responsibilities as members of our community. We as a tribal people have been responsible for Millennia to safeguard our landscapes where our people have lived and died. Only in the last century or so have these places we protect, been given a new designation by others as "archaeological sites," and an interest expressed in them for "Western science." Our tribal people don't draw their traditional knowledge from measured excavations in deposits with integrity, etc., and consequently, the value that we hold for these places is not measured in those terms. There are major worldview differences between those who made the "sites" and those who study them. This is also why non-tribal members are unable to meet the needs of our people as protectors/monitors of our important places because they are most often primarily concerned with protecting the archaeological value or obtaining the archaeological data of a place while we are concerned with maintaining the cosmological integrity of a place. We have found a use in cross-training our tribal people so they have an understanding our how archaeologists work and what they value. Tribal people who are cross-trained serve as cross-cultural interpreters of sorts. We have far to go in training some archaeologists about our values.

The role of our tribal monitors is to protect the interests of the Burns Paiute Tribe in making every effort to make sure: 1) human remains are not negatively impacted, 2) funerary objects, sacred objects, and objects of cultural patrimony are not negatively impacted, and 3) that the other physical remnant of our people's past use of the land is not disrespected and/or unnecessarily harmed. The best way we have found to make sure we do our due diligence as Northern Paiute people is to have tribal monitors on the ground for archaeological excavations and construction related ground disturbing activities whenever possible to offset the damage and harm. I hope that is helpful in some way to providing you with an explanation for why we ask for tribal monitoring.

Unfortunately, don't believe I have an electronic version of the MOA and I neglected to ask for an electronic version on Wednesday. I will share the following recommended amendments and comments:

1. We request inclusion of a definition of the term cultural resource monitor. The Burns Paiute Tribe respectfully requests that we be afforded the opportunity to have *Burns Paiute Tribal monitoring* on site for all ground disturbing activities related to the project regardless of whether the ground disturbing activity is within or beyond a known "archaeological site." We ask this because of our knowledge of the great probability of buried funerary objects and/or Native American human remains in the construction area. The burials and grave good may or may not be found in association with an archaeological site.

2. We ask that if any inadvertent discoveries such as described in the current draft MOA are identified, that all work cease in that particular area of the construction and that a reasonable buffer be established, the area be cordoned off and no one save the

monitor(s) and the lead archaeologist be allowed to enter the cordoned off area until the appropriate parties can be reached and brought to the site (CIS, State Police, SHPO in the case of potential human remains). We also strongly discourage any photographing of human remains.

3. We ask that the Burns Paiute Tribe oversee our monitors directly and that we would administer the management of our tribal monitoring. Our aboriginal protection policy requires that Burns Paiute monitors be directly responsible to and take direction from our Burns Paiute Tribal Cultural Director. We would also be open to serving in an archeological monitoring capacity as well if it is possible to reach agreement on what educational and/or experiential qualifications would be needed to fulfill that role, as well as how, when, and who monitors serving in that capacity would report.

4. We ask that a plea be made to the landowners to allow the excavated "artifacts" to be returned to the ground once appropriate analysis and documentation of what is found is concluded. We would ask all of the pre-contact artifacts be reburied somewhere near their original location but out of harms way. We would consider it a small victory if they would agree to rebury even a percentage of the total excavated assemblage.

5. We request participation in any CRM work completed for this project. If AINW finds and retains one or more qualified Burns Paiute tribal members to serve on their crew for this project we would forego requesting a Burns Paiute tribal monitor be present for that work.

6. We ask that the costs incurred by the Burns Paiute Tribe as a result of participation in this project be reimbursed to the Tribe by the project proponent.

I am willing to incorporate specific wording change suggestions into the electronic draft if provided an electronic copy. We look forward to further discussion and review of the MOA. Thank you again for your efforts to listen and respond in a meaningful way to the Burns Paiute Tribe's Culture & Heritage needs. Please feel free to contact me if you have any questions.

Sincerely,

Diane L Teeman

Diane L. Teeman

Culture & Heritage Department, Acting Director
100 Pasigo St.
Burns, OR., 97720
[redacted]
(541 573-8096 Office

Page 3 of 3

Oregon
John A. Kitzhaber, MD, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

January 22, 2015

Mr. James Neely
Department of the Air Force
Air Force Research Laboratory
, Ohio 45433

RE: SHPO Case No. 14-0042
Red Rock Biofuel Plant
CRS/Potentially unearthing significant cultural resources
40S 20E 3, 21, 22, 27, 34, Lakeview, Lake County

Dear Mr. Neely:

Our office received your letter, draft MOA, treatment plan, monitoring and inadvertent discovery plan for the Red Rock Biofuels Project in Lakeview, Oregon on December 31, 2014. I have reviewed these documents and Dr. Dennis Griffin, State Archaeologist, has also reviewed and commented. Please see attached documents with "track changes" for detailed comments.

There is a point that needs to be clarified in the treatment plan and MOA, regarding "effect" of this project on the identified archaeological resources. Since the original survey and evaluative testing report was completed it has been determined by the project proponent, Red Rock Biofuels, that construction of the biofuels plant will require use of the entire Area of Potential Effect (APE) and ground disturbing activies will occur throughout this APE. It will not be possible to avoid any of the identified archaeological sites in the APE, so there will be "adverse effects" to the sites. The treatment plan on page 2 states at the end of paragraph 3 that the proposed treatment, monitoring, and inadvertent discovery plan are designed to "achieve a finding of no historic properties adversely effected". The paragraph should be changed to indicate that the proposed work in the treatment plan, etc. is designed to mitigate the adverse effect.

To be consistent between the documents, the MOA should state specifically that the Air Force recognizes that the undertaking will have an adverse effect on archaeological resources in the project area (APE), and that proposed treatments and monitoring are designed to mitigate these adverse effects. There is some additional reorganization of the MOA that is needed to clarify several points (see Draft MOA comments). Changes should be made to each of the documents and resubmitted to our office for review. After you have reviewed our comments please feel free to contact us if you have any questions.

Sincerely,

Ross Curtis

Ross Curtis
SHPO Archaeologist
(503) 986-0676
ross.curtis@oregon.gov

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 19 2014

MEMORANDUM FOR: MR. DENNIS GRIFFIN
STATE ARCHAEOLOGIST
OREGON STATE HISTORIC PRESERVATION OFFICE
725 SUMMER STREET NE, SUITE C
SALEM OR 97301-1266

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: SHPO Case No. 14-0042; Draft Memorandum of Agreement for the Red Rock Biofuels Project in Lake County, OR

1. On or about 8 December 2014 correspondence was forwarded to your office regarding the AINW Archeological Survey Report for the Red Rock Biofuels project site in Lake County, OR. Based on the findings and review of that survey, Red Rock Biofuels developed a plan for additional archeological evaluation work, as well as plans for monitoring and unanticipated discoveries during construction.

2. The DPA Title III Office, as the lead federal agency for the Red Rock Biofuels Project, has drafted a Memorandum of Agreement (MOA) and accompanying Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan that define the path forward. Request you review these documents (Attachments 1, 2 and 3) and provide comments to us by 23 January 2015. We will follow-up with you in a few weeks to schedule a conference call during the week of 12 January 2015 if there are issues you would like to discuss before submitting your formal comments.

3. This MOA stipulates curation of archaeological collections at the Oregon State Museum of Natural and Cultural History. The Air Force (AF) acknowledges requests by the Klamath Tribes for acquisition of archaeological collections derived from the Project and by the Burns Paiute Tribe for curation of the collections on-site. The AF supports curation of archaeological collections at an appropriate tribal or on-site facility that meets the requirements of state and federal law. The AF also recognizes the responsibility of the Oregon State Museum of Natural and Cultural History to authorize curation at tribal or other appropriate facilities. The AF requests proposals from the tribes to provide curation plans or approaches to meet tribal objectives while also satisfying legal and practical requirements of the Project.

4. Please direct any questions to myself, Air Force Research Laboratory's Title III Project Manager, at (937) 904-4374 or james.neely@us.af.mil, and our contractor support Joanne Morello at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink: (937) 255-3480 or warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

7 Attachments:
1. Draft Memorandum of Agreement (MOA)
2. Draft Treatment Plan
3. Draft Construction Monitoring Plan and Unanticipated Discoveries Plan
4. Figure 1 Red Rock Biofuels Project Area of Potential Effect
5. Figure 2 Red Rock Biofuels Project and Resource Location Manager
6. Figure 3 Biofuels Plant and Archaeological Sites
7. Figure 4 Archaeological Site 35LK4694 In the Pipeline Corridor

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 19 2014

MEMORANDUM FOR: MR. PERRY CHOCKTOOT, JR
KLAMATH TRIBES
DIRECTOR OF CULTURE AND HERITAGE DEPARTMENT
PO BOX 436
CHILOQUIN OR 97624

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Draft Memorandum of Agreement for the Red Rock Biofuels Project in Lake County, OR

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JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 19 2014

MEMORANDUM FOR: MR. KENNETH SAM
FORT BIDWELL INDIAN COMMUNITY OF THE FORT
BIDWELL RESERVATION OF CALIFORNIA
PO BOX 129
FORT BIDWELL CA 96112

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Draft Memorandum of Agreement for the Red Rock Biofuels Project in Lake County, OR

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JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 19 2014

MEMORANDUM FOR: MS. SALLY BIRD
CONFEDERATED TRIBES OF WARM SPRINGS
CULTURAL RESOURCES PROGRAM MANAGER
1233 VETERANS STREET
WARM SPRINGS OR 97761

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Draft Memorandum of Agreement for the Red Rock Biofuels Project in Lake County, OR

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JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 19 2014

MEMORANDUM FOR: MS. DIANNE TEEMAN
BURNS-PAIUTE TRIBE
CULTURAL RESOURCES PROGRAM DIRECTOR
100 PASIGO ROAD
BURNS OR 97720

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

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2. The DPA Title III Office, as the lead federal agency for the Red Rock Biofuels Project, has drafted a Memorandum of Agreement (MOA) and accompanying Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan that define the path forward. Request you review these documents (Attachments 1, 2 and 3) and provide comments to us by 23 January 2015. We will follow-up with you in a few weeks to schedule a conference call during the week of 12 January 2015 if there are issues you would like to discuss before submitting your formal comments.

3. This MOA stipulates curation of archaeological collections at the Oregon State Museum of Natural and Cultural History. The Air Force (AF) acknowledges requests by the Klamath Tribes for acquisition of archaeological collections derived from the Project and by the Burns Paiute Tribe for curation of the collections on-site. The AF supports curation of archaeological collections at an appropriate tribal or on-site facility that meets the requirements of state and federal law. The AF also recognizes the responsibility of the Oregon State Museum of Natural and Cultural History to authorize curation at tribal or other appropriate facilities. The AF requests proposals from the tribes to provide curation plans or approaches to meet tribal objectives while also satisfying legal and practical requirements of the Project.

4. Please direct any questions to myself, Air Force Research Laboratory's Title III Project Manager, at (937) 904-4374 or james.neely@us.af.mil, and our contractor support Joanne Morello at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink: (937) 255-3480 or warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy
Program Manager
Manufacturing & Industrial Technologies
Division
Materials & Manufacturing Directorate

7 Attachments:
1. Draft Memorandum of Agreement (MOA)
2. Draft Treatment Plan
3. Draft Construction Monitoring Plan and Unanticipated Discoveries Plan
4. Figure 1 Red Rock Biofuels Project Area of Potential Effect
5. Figure 2 Red Rock Biofuels Project and Resource Location Manager
6. Figure 3 Biofuels Plant and Archaeological Sites
7. Figure 4 Archaeological Site 35LK4694 In the Pipeline Corridor

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 1 4 2014

MEMORANDUM FOR: GAIL MORNINGSTAR
PIT RIVER TRIBES
XL RESERVATION
1036 LAKEVIEW HIGHWAY
ALTURAS CA 96101

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: Draft Memorandum of Agreement for the Red Rock Biofuels Project in Lake County, OR

1. On or about 8 December 2014 correspondence was forwarded to your office regarding the AINW Archeological Survey Report for the Red Rock Biofuels project site in Lake County, OR. Based on the findings and review of that survey, Red Rock Biofuels developed a plan for additional archeological evaluation work, as well as plans for monitoring and unanticipated discoveries during construction.

2. The DPA Title III Office, as the lead federal agency for the Red Rock Biofuels Project, has drafted a Memorandum of Agreement (MOA) and accompanying Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan that define the path forward. Request you review these documents (Attachments 1, 2 and 3) and provide comments to us by 23 January 2015. We will follow-up with you in a few weeks to schedule a conference call during the week of 12 January 2015 if there are issues you would like to discuss before submitting your formal comments.

3. This MOA stipulates curation of archaeological collections at the Oregon State Museum of Natural and Cultural History. The Air Force (AF) acknowledges requests by the Klamath Tribes for acquisition of archaeological collections derived from the Project and by the Burns Paiute Tribe for curation of the collections on-site. The AF supports curation of archaeological collections at an appropriate tribal or on-site facility that meets the requirements of state and federal law. The AF also recognizes the responsibility of the Oregon State Museum of Natural and Cultural History to authorize curation at tribal or other appropriate facilities. The AF requests proposals from the tribes to provide curation plans or approaches to meet tribal objectives while also satisfying legal and practical requirements of the Project.

4. Please direct any questions to myself, Air Force Research Laboratory's Title III Project Manager, at (937) 904-4374 or james.neely@us.af.mil, and our contractor support Joanne Morello at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink: (937) 255-3480 or warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
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7 Attachments:
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Call Logs

RRB Communication Regarding Tribal Monitoring Agreement

File Name	Tribe	Tribe POC	Address, Phone Number, Email	Date	Comments/ Response
	Klamath Tribes	Perry Chocktoot	(541) 783-2219	2/1/15	Mr. Chocktoot left msg for Jeff Mantemach
Call Notes - Klamath-RRB 2015 0202.doc	Klamath Tribes	Perry Chocktoot	(541) 783-2220	2/2/15	Mary Dinh and Jeff Mantemach called Mr. Chocktoot in response to his voicemail on 2/1/15
Call Notes - Klamath-RRB 2015 0215.doc	Klamath Tribes	Perry Chocktoot	(541) 783-2221	2/13/15	Mr. Chocktoot called Jeff Mantemach with comments on MOA
Call Notes - Klamath-RRB 2015 0416.doc	Klamath Tribes	Perry Chocktoot	(541) 783-2222	4/16/15	Conference call with Perry Chocktoot, Terry Ozbun(AINW), and RRB to begin negotiations of the tribal monitoring agreement
Email RRB to Klamath - Meeting Request 2015 0427.pdf	Klamath Tribes	Perry Chocktoot	perry.chocktoot@klamathtribes.com	4/27/15	Mary Dinh emailed Perry to coordinate a meeting to negotiate tribal monitoring agreement
Call Notes - RRB to Klamath 2015 0504.doc	Klamath Tribes	Perry Chocktoot	(541) 783-2224	5/4/15	Mary Dinh called Perry to check that he received email with meeting request and to inquire about his availability for meeting
Email - Chocktoot Klamath to RRB 2015 0504.pdf	Klamath Tribes	Perry Chocktoot	perry.chocktoot@klamathtribes.com	5/4/15	Perry Chocktoot sent email indicating that he is not available to meet on May 13
Call Notes - RRB to Klamath 2015 0507.doc	Klamath Tribes	Perry Chocktoot	(541) 783-2225	5/7/15	Mary Dinh called Perry to finalize location of meeting regarding tribal monitoring agreement
Email - Klamath-RRB Meeting Confirmation 2015 0511.pdf	Klamath Tribes	Perry Chocktoot	perry.chocktoot@klamathtribes.com	5/11/15	Mary Dinh emailed Perry to confirm meeting at SHPO on May 14, 2015 at 10 am. Perry responded and confirmd that the date, time, and location worked for him.

RED ROCK
BIOFUELS

Call Log

Date:

May 7, 2015

To:

Perry Chocktoot, Cultural & Heritage Director, Klamath Tribes

Phone Number:

541-783-2219 x 178

From:

Mary Dinh, Project Manager, Red Rock Biofuels

Phone Number:

970-999-3214

Subject:

Red Rock Biofuels Project – Finalize date and location of meeting to discuss tribal monitoring

Ms. Dinh called Mr. Chocktoot and indicated that Jeff Manternach and Terry Ozbun from AINW were available to meet on May 14, 2015. However, instead of meeting in Chiloquin, Ms. Dinh asked Mr. Chocktoot to meet at the SHPO office in Salem. Mr. Chocktoot agreed to meet at the SHPO office. Ms. Dinh asked Mr. Chocktoot if an 8:30am or 10:00am meeting would work for him. Mr. Chocktoot said that a 10:00 am meeting would work better for him. Ms. Dinh agreed to the time and said she would check with Dennis Griffin, State Archaeologist at SHPO, for his availability and meeting room and follow-up with an email confirmation.

RED ROCK
BIOFUELS

Call Log

Date:

May 4, 2015

To:

Perry Chocktoot, Cultural & Heritage Director, Klamath Tribes

Phone Number:

541-783-2219 x 178

From:

Mary Dinh, Project Manager, Red Rock Biofuels

Phone Number:

970-999-3214

Subject:

Red Rock Biofuels Project – Meeting to discuss Tribal Monitoring

Ms. Dinh called Mr. Chocktoot and checked that he had received her email regarding scheduling a meeting to discuss terms for tribal monitoring and asked Mr. Chocktoot for his availability for a meeting in Lakeview during the seek of May 11.

Mr. Chocktoot reiterated that Klamath Tribes remains firm on their request for co-management, return of artifacts, and one monitor per piece of equipment for all ground-disturbing activities. Mr. Chocktoot said he is available May 13 and 14. However, Mr. Chocktoot requested that the meeting be in Chiloquin. Ms. Dinh said she would check with Jeff Manternach, Red Rock CFO, and AINW regarding their availability to meet in Chiloquin and would follow-up with Mr. Chocktoot on the date and location for the meeting.

Tuesday, May 26, 2015 at 5:50:07 PM Mountain Daylight Time

Subject: RE: Meeting - Tribal Monitoring for Red Rock Project
Date: Monday, May 4, 2015 at 3:59:51 PM Mountain Daylight Time
From: Perry Chocktoot
To: Mary Dinh

The 13th is already off the table as Tribal Council needs my assistance.

From: Mary Dinh [mailto:maryd@ir1group.com]
Sent: Monday, April 27, 2015 8:41 AM
To: Perry Chocktoot
Cc: Jeff Manternach; Terry Ozbun; John Fagan
Subject: Meeting - Tribal Monitoring for Red Rock Project

Dear Perry,

As you suggested, we agree that an in-person meeting will be instrumental in coming to an agreement on the terms for tribal monitoring for the Red Rock Biofuels project. We'd like to suggest a meeting on May 13 or morning of May 14 in Lakeview. Would either of those dates work for you?

Thank you,
Mary

Mary Dinh
Project Manager
970-999-3214 Direct
970-223-6766 General
maryd@ir1group.com

IR1 Group LLC: www.ir1group.com
Red Rock Biofuels LLC: redrockbio.com
736 Whalers Way
Bldg G, Suite 100
Ft Collins, CO 80525

Page 1 of 1

RED ROCK BIOFUELS

CONFERENCE CALL NOTES

Date:

April 16, 2015

To:

Red Rock Biofuels LLC, Project File

From:

Ms. Dinh Dinh, Red Rock Biofuels

Subject:

Klamath Tribes' requests for provisions to be included in tribal monitoring agreement

Meeting Date & Location: April 16, 2015. All attendees participated via conference call

Meeting Attendees: Perry Chocktoot (Klamath Tribes); Liilian Wataugh (Klamath Tribes); Jeff Manternach (Red Rock Biofuels); Ms. Dinh Dinh (Red Rock Biofuels); Terry Ozbun (AINW)

Meeting Notes:

- After greetings, Mr. Chocktoot asked for owner of Red Rock to ensure the call today includes persons with authority to make decisions. Mr. Manternach replied that is co-owner of Red Rock Biofuels ("RRB") and has authority to make decisions. The other co-owner of RRB is Terry Kulesa.
- Ms. Dinh provided update on MOA documents.
    - RRB and AINW have incorporated comments from SHPO and the tribes into the MOA documents. The revised MOA documents have been sent to the Air Force ("AF") for their review and edits.
    - Mr. Chocktoot expressed that Klamath would like to review the revised Documents.
        - Ms. Dinh indicates that RRB/AINW prepares the documents for the AF. The MOA is an AF document and will be issued by the AF.
        - Ms. Dinh indicated that AF intends to send the revised MOA documents to SHPO and relevant tribes for review once the AF completes their review
    - Revisions have been made to keep options flexible for negotiations with tribes on issues of importance to tribes
        - Archaeological monitoring and tribal monitoring have been separated. Construction Monitoring Plan now only addresses archaeological monitoring. Tribal monitoring will be addressed by tribal monitoring agreement between RRB and tribes

- Curation – MOA documents now state that all artifacts from private lands will be retained by landowners. This allows RRB with flexibility to continue negotiating with the Tribes on the disposition of the artifacts.

- Mr. Manternach explains that the renewables fuels industry is a tough industry with many risks and uncertainties. RRB was developed out of a passion for renewable fuels. RRB is not a large company like Kinder-Morgan, which has 12,000 employees. The RRB team consists of 5 people. The RRB project in Lakeview is not comparable to the Ruby Pipeline project. The RRB project is more similar in size and scope to the Lakeview geothermal project, and the scope of tribal monitoring for the RRB project should be more similar to the Lakeview geothermal project. Mr. Manternach also stated that from a legal perspective, RRB is not required to hire tribal monitors. However, RRB is willing to accommodate the tribes' requests to have tribal monitors within reason.
- Mr. Chocktoot disagreed and said RRB is a business like Kinder-Morgan, and thus is similar to Kinder-Morgan. RRB project is not equivalent to geothermal project, because geothermal project is for community benefit, not business benefit. Mr. Chocktoot said that Klamath Tribes remain firm on the following three requests:
  - Klamath Tribes request co-management, with AINW, of archaeological and tribal monitoring
  - Klamath Tribes request tribal monitoring during all ground disturbing activities for the entire project area of potential effect, with one tribal monitor per piece of equipmet
  - Klamath tribes request that all artifacts be transferred to the Klamath tribes for curation at Klamath's federally approved curation facility
- Mr. Chocktoot stated that he thinks an agreement is unlikely to be reached over a phone discussion and that a face-to-face meeting is needed to complete the negotiations.
- Mr. Manternach said he is willing to meet and RRB will coordinate the meeting.

RED ROCK BIOFUELS

CALL NOTES

Date:

February 13, 2015

To:

Jeff Manternach, Red Rock Biofuels

From:

Perry Chocktoot, Klamath Tribes

Subject:

Comments on MOA

Mr. Perry Chocktoot called Jeff Manternach and provided his comments on the MOA and its attachments (Archaeological Treatment Plan and Construction Monitoring and Unanticipated Discovery Plan) which was sent to Klamath Tribes on December 19, 2014. A summary of the call is provided in Mr. Manternach's email below, to Mr. James Neely (DOD/AFRL) and Ms. Joanne Morello (North Grumman Technical Services, consultant to AFRL)

From: Jeff Manternach <jeffm@ir1group.com>

Date: Friday, February 13, 2015 at 6:32 PM

To: "Morello, Joanne (TS)" <Joanne.Morello@ngc.com>, "Neely, James A Civ USAF AFMC AFRL/RXME" <James.Neely@wpafb.af.mil>

Cc: Mary Dinh <maryd@ir1group.com>, "perry.chocktoot@klamathtribes.com" <perry.chocktoot@klamathtribes.com>

Subject: RE: Summary of MOA Revision Request - Red Rock Biofuels Project

Hi James and Joanne,

Please note that I had the chance to speak at with Mr. Chocktoot (cc'd here) earlier today on three areas covered in the MOA, two of which reinforce items listed in the email chain below and one of which I believe is new:

1) Curation of the artifacts. Klamath Tribes ("KT") strongly believes the KT should receive any recovered artifacts for curation. I conveyed that RRB is interested in A) meeting its requirements for proper artifact disposition under relevant state and/or federal regulations and B) to the extent possible, being inclusive and respectful of all interested and consulting parties in the MOA process. I shared my concern with Mr. Chocktoot that I was unsure about how several of the other Tribes in the consultation process would feel about KT curating the artifacts. If KT has a facility that meets the relevant state and/or federal regulations, and we will not alienate the other Tribes, I stated that RRB is happy to have KT curate any artifacts. Mr. Chocktoot noted that as a Nation, KT more or less does not recognize the State of OR as a relevant player when it comes to artifact curation guidelines, but rather looks to the Bureau of Reclamation. Also, Mr. Chocktoot expressed serious reservations regarding granting access rights to any curated artifacts to any of the other Tribes involved in the consultation process.

2) Co-oversight over monitoring. Mr. Chocktoot firmly requested co-oversight over monitoring activities, noting that RRB was welcome to have AINW (or other representative) present, but would also need a tribal representative overseeing monitoring activities. Mr. Chocktoot stated that he would be happy to supply the appropriate qualifications for the tribal representative. I noted that in principal I do not have an issue with co-oversight, but expressed my concern about the cost of doubling work efforts.

3) Reference to a monitoring agreement with the KT in the MOA. Mr. Chocktoot firmly believes that the MOA should reference a monitoring agreement between RRB and KT. I noted that I don't see a problem with referencing such an agreement, but that it might be wise to actually generate a draft of that agreement so both RRB and KT understand what it entails. We discussed a number of the provisions that I expect will end up in such an agreement, including what areas get monitored, how many monitors, etc. Mr Chocktoot agreed to send RRB a draft of such agreement.

Perry, if I have missed anything or mischaracterized anything in our conversation, please let me know. While it may be challenging, I am confident that working together RRB and KT can find a way to address these items.

Thanks, Jeff

****

Jeff Manternach
O: 503-636-1130
[redacted]
IR1 Group LLC
jeffm@ir1group.com / www.ir1group.com
Red Rock Biofuels LLC
jeffm@redrockbio.com / www.redrockbio.com

****

Wednesday, April 8, 2015 at 4:06:52 PM Mountain Daylight Time

Subject: RE: Summary of MOA Revision Request - Red Rock Biofuels Project
Date: Friday, February 13, 2015 at 11:58:35 AM Mountain Standard Time
From: Perry Chocktoot
To: Mary Dinh

On the third bullet if we could add in parentheses (Treaty Tribes)between the period and the word tribes.

From: Mary Dinh [mailto:maryd@ir1group.com]
Sent: Wednesday, February 04, 2015 4:59 PM
To: Perry Chocktoot
Cc: Jeff Manternach; Neely, James A Civ USAF AFMC AFRL/RXME; Morello, Joanne (TS)
Subject: Re: Summary of MOA Revision Request - Red Rock Biofuels Project

Dear Perry,

I just wanted to check in with you and ensure that you received my email below. Also, for purposes of revising the MOA documents, will you be able to provide either confirmation of the summary below or revisions/comments to the summary by Monday, Feb. 9?

Again, thank you for your time and input on our project.
Mary

Mary Dinh
Project Manager
Direct: 970-999-3214
Cell: 805-698-8564
Main: 970-223-6766
maryd@ir1group.com

IR1 Group LLC: www.ir1group.com
Red Rock Biofuels LLC: redrockbio.com
736 Whalers Way
Bldg G, Suite 100
Ft Collins, CO 80525

From: Mary Dinh <maryd@ir1group.com>
Date: Tuesday, February 3, 2015 at 2:28 PM
To: "perry.chocktoot@klamathtribes.com" <perry.chocktoot@klamathtribes.com>
Cc: Jeff Manternach <jeffm@ir1group.com>
Subject: Summary of MOA Revision Request - Red Rock Biofuels Project

Dear Perry,

Thank you for taking our call yesterday and staying in communication regarding Red Rock Biofuels' project.

As a record of Klamath Tribes' review of and comments on the MOA, Treatment Plan, Construction Monitoring Plan, and Unanticipated Discovery Plan, below is a summary of your revision requests per our phone call with you:

- All artifacts are to be transferred to the Klamath Tribes. The Klamath Tribes will curate all artifacts at the their federally recognized and approved curation facility.
- The MOA/Construction Monitoring Plan should indicate that a Tribal Monitoring Agreement is to be established between Klamath Tribes and the project proponent, Red Rock Biofuels. The Tribal Monitoring Agreement is to include scope of work, Unanticipated Discovery Plan, responsible parties, cost, and number

Page 1 of 2

of monitors.

- Tribal monitoring agreement should be established only with federally recognized tribes.

Please let us know if this adequately summarizes your revision requests. If not, please modify the bullet points above. We will share your comments with the Air Force for their review.

Thank you,
Mary

Mary Dirth
Project Manager
Direct: 970-999-3214
[redacted]
Main: 970-225-6766
maryd@ir1group.com

IR1 Group LLC: www.ir1group.com
Red Rock Biofuels LLC: redrockbio.com
736 Whalers Way
Bldg G, Suite 100
Ft Collins, CO 80525

RED ROCK BIOFUELS

CALL NOTES

Date:

February 2, 2015

To:

Perry Chocktoot, Klamath Tribes

From:

Jeff Manternach, Red Rock Biofuels; Mary Dinh, Red Rock Biofuels

Subject:

Klamath Comments on MOA documents sent by AFRL on December 19, 2014

Mr. Chocktoot left a voicemail to Mr. Manternach on February 1, 2015. In response, Mr. Manternach and Ms. Dinh returned Mr. Chocktoot's call on February 2, 2015.

Mr. Chocktoot provided the following comments on the MOA, Archaeological Treatment Plan, and Construction Monitoring and Unanticipated Discovery Plan for the Red Rock Biofuels Project, which were sent by the Air Force on December 19, 2014 to the tribes and SHPO for comment.

- Klamath Tribes have a federally recognized curation facility.
- Klamath Tribes request all artifacts be transferred to Klamath Tribes. Artifacts will be curated at Klamath's federally approved curation facility. Artifacts are ***not*** to be sold.
- Klamath Tribes request a tribal monitoring agreement, which should include provisions for cost; 1 monitor per piece of equipment. Monitoring agreement with federally recognized tribes to include Scope of Work, Unanticipated Discovery Plan, responsible parties
- Klamath area starts from 1 mile east of 395 and westward. Klamath tribe has agreement with US govt via Treaty of 1864
- 1 mile east of 395 and eastward belong to Burns Paiute or Fort Bidwell (neither have treaty with US government)
- Klamath Tribes noted that tribal monitoring agreement should be established only with federally recognized tribes (Treaty tribes).
- Mr. Chocktoot said he felt that the call was sufficient to convey his comments and revision requests and does not plan to submit written comments.

Ms. Dinh followed up the call with an email to Mr. Chocktoot, summarizing the Klamath Tribes' three main requests/comments on the MOA.

RED ROCK BIOFUELS

CONFERENCE CALL NOTES

Date:

January 21, 2015

To:

Red Rock Biofuels LLC, Project File

From:

Mary Dinh

Subject:

Burns Paiute Tribe comments on MOA for Red Rock Biofuels Project

Meeting Date & Location: January 21, 2015; All attendees participated via conference call

Meeting Attendees:

James Neely, Air Force Research Lab

Joanne Morello, Northrup Grumman Technical Services

Diane Teeman, Burns Paiute Tribe

Mary Dinh, Red Rock Biofuels

Terry Ozbun, AINW

Meeting Notes:

- Ms. Teeman provided the following feedback on the MOA, Treatment Plan, and Construction Monitoring and Unanticipated Discovery Plan
  - Burns Paiute Tribe requests that the inclusion of the definition of cultural resource monitor vs. archaeological monitor.
  - Mr. Neely asked Ms. Teeman for an explanation on the difference between archaeological perspective and cultural perspective of artifacts. Ms. Teeman explained that the difference in archaeological perspective vs. cultural (or tribal) perspectice is in how material culture is viewed: e.g., archaeologist's may not view a broken artifact as valuable but, to the tribes, it is no less valuable because it is not intact or have structural integrity.

- Burns Paiute Tribe requests that Burns Paiute be afforded the opportunity to have monitors on site for all ground disturbing activities. Burns Paiute monitors are to be supervised and take direction directly by the Burns Paiute Tribe.
- Burns Paiute Tribe requests that the land owners allow excavated artifacts to be reburied as close to where they were found as possible. Even if only a portion were reburied, Burns Paiute would consider that a victory.
- Burns Paiute Tribe requests to have an agreement with project proponent for all costs associated with conducting tribal monitoring.

- Mr. Neely asked Ms. Teeman to provide her comments in writing to ensure all her comments are accurately documented.

AFRL Telephone Log for Red Rock Biofuels Project

Tribe	Tribe POC	Phone Number	Date	Comments/ Response
Burns Paiute Tribe	Agnes Castromuevo	(541) 573-8089; [redacted]	2/12/2014	Not in; Left message
Confederated Tribes of Warm Springs	Robert Brunoe	(541) 553-2001	2/12/2014	Not in
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	Loyette Meza		2/12/2014	Not in
Klamath Tribes	Perry Chocktoot	(541) 783-2219	2/12/2014	Not in; Left message
Pit River Tribes	Morning Star Gali	(530) 233-6290	2/13/2014	Not in
Klamath Tribes	Perry Chocktoot	(541) 783-2219	2/19/2014	Returned 2/12/14 call; discussion held on Tribes' concerns
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	Kenneth Sam	[redacted]	9/9/2014	Discussion held regarding archeological survey work; Tribe requested AINW POC
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	Kenneth Sam	[redacted]	9/25/2014	Discussion held because Tribe had not yet heard from AINW
Burns Paiute Tribe	Dianne Teeman	[redacted]	10/20/2014	Not in; Left message
Burns Paiute Tribe	Dianne Teeman	[redacted]	12/22/2014	Returned 10/22/14 call; discussion held on project and technical exchange meeting
Confederated Tribes of Warm Springs	Clay Penhollow	(541) 553-3548	10/21/2014	Not in; Left message
Confederated Tribes of Warm Springs	Clay Penhollow	(541) 553-3548	10/21/2014	Returned 10/21/14 call; discussion held regarding technical exchange meeting; stated Sally Bird would be new POC
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	Kenneth Sam	[redacted]	10/21/2014	Not in; Left message
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	Kenneth Sam	[redacted]	10/22/2014	Not in; Left message
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	Kenneth Sam	[redacted]	10/22/2014	Returned call from 10/22/14; Left message
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California	Kenneth Sam	[redacted]	10/27/2014	Discussion held; stated he had not received emails, but would be participating in the technical exchange meeting
Klamath Tribes	Perry Chocktoot	(541) 783-2219	10/21/2014	Not in; Left message

AFRL Telephone Log for Red Rock Biofuels Project

Tribe	Tribe POC	Phone Number	Date	Comments/ Response
Klamath Tribes	Perry Chocktoot	(541) 783-2219	10/21/2014	Returned 10/21/14 call; discussion held on Tribes' concerns and technical exchange meeting
Pit River Tribes	Morning Star Gali	(530) 233-6290	10/21/2014	Not in; Left message
Pit River Tribes	Morning Star Gali	(530) 233-6290	10/22/2014	Not in; Left message
Burns Paiute Tribe	Dianne Teeman	[redacted]	1/21/2015	Discussion held on Tribe's concerns with MOA
Klamath Tribes	Perry Chocktoot	(541) 783-2219	2/10/2015	Discussion held on Tribes' concerns with MOA
Klamath Tribes	Perry Chocktoot	(541) 783-2219	3/6/2015	Tribe left message regarding status of MOA
Klamath Tribes	Perry Chocktoot	(541) 783-2219	3/16/2015	Discussion held regarding Tribes' concerns with MOA
Pit River Tribes	Marissa Fierro	(530) 335-1118	2/11/2015	Discussion held on Tribes' concerns

Government to Government

MICKEY GEMMILL
Tribal Chairman

ISIDRO GALI
Vice-Chairman

IDA RIGGINS
Tribal Secretary

PIT RIVER TRIBE

Pit River Tribe
36970 Park Ave
Burney CA 96013

Phone: 1(530) 335-5421
Fax: 1(530) 335-3140

ELEVEN AUTONOMOUS BANDS

ATWAMSINI ASTARIWI ATSUGEWI APORIGE AJUMAWI

HEWISEDAWI ILLMAWI ITSATAWI KOSEALEKTE HAMMAWI

March 18, 2015

James A. Neely, Deputy Program Manager
Defense Production Act (DPA) Title III Office
Manufacturing and Industrial Technologies Division
Materials and Manufacturing Directorate
Air Force Research Laboratory

Re: Advanced Drop-in Biofuels Project

Dear Mr. Neely,

Thank you for your electronic mail communications regarding this project. As you are in the initial phases of planning and assessing this project it is appropriate to begin the formal consultation process now. We have found that meaningful input on such projects becomes more difficult after the NEPA document has been prepared. This project is a matter of interest to the Pit River Tribe and we hereby request that our trustee, the United States Air Force, meet with the Pit River Tribal Council and consult with us. Please arrange to meet with the Council at the earliest mutually acceptable time so we can consult.

If you have any questions regarding this matter please contact myself or Morning Star Gali, Tribal Historic Preservation Officer at (530) 335-5421 ext. 1205. We look forward to meeting with you.

Respectfully,

Mickey Gemmill

Mickey Gemmill, Chairman
Pit River Tribe

CC:

EA Permits

ANDERSON ENGINEERING AND SURVEYING, INC.
PROFESSIONAL ENGINEERS AND LAND SURVEYORS
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(541) 947-4407 Fax (541) 947-2321
www.andersonengineering.com

June 15, 2015

Mary Dinh
IR1 Group LLC
736 Whalers Way, Bldg G, Suite 100
Ft Collins, CO 80525

Re: Town of Lakeview Sewerage Treatment

Dear Mary:

The Town of Lakeview operates a sewerage treatment system under existing NPDES Permit No. 101594. The treatment system consists of 4 primary lagoons, a polishing wetland, and storage pond. Ponds total over 90 acres. Effluent is used during the summer months for land application irrigation of fodder crops. The current permit is being updated and a new permit will be issued. The application is under Environmental Protection Agency (EPA) Reference # OR-004138-6. Issuance of this permit will be under the Oregon Department of Environmental Quality (DEQ). The level of treatment of the facility is a class "D" effluent.

Currently the system has average daily flows of 0.85 million gallons per day. The dry weather design flow is 1.26 million gallons per day.

The treatment system was constructed in 1999 and Anderson Engineering and Surveying, Inc. was the design engineer for the project. Our firm also acts as the Town of Lakeview's Engineer of Record for review of treatment issues and permit renewals.

The system has adequate capacity to accept Red Rock Biofuel's proposed waste stream of 0.08 million gallons per day (54 gallons per minute). The proposed permit does not include influent levels from industrial levels of waste. However, the permit does allow for other wastes, such as septic and landfill leachate.

The Town of Lakeview will work with Red Rock Biofuels on the influent concentrations to determine if any pre-treatment is necessary. At this time it seems doubtful that pre-treatment will be necessary due to the large dilution rate that will be present.

The new permit will require the Town of Lakeview to complete an industrial user survey. This survey will help us quantify the composition of the Red Rock influent. Please let me know if you have any questions.

Sincerely,

Darryl Anderson, PE, PLS

cc: Ray Simms, Town of Lakeview

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request November 27, 2013	
Name of Project Red Rock Biofuel Facility		Federal Agency Involved Department of Defense	
Proposed Land Use Industrial		County and State Lake County, Oregon	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 6/29/15	Person Completing Form: ron raney
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated n/a	Average Farm Size 1661
Major Crop(s) pasture	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres: %	
Name of Land Evaluation System Used none	Name of State or Local Site Assessment System none	Date Land Evaluation Returned by NRCS 7-1-15	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	54	54		
B. Total Acres To Be Converted Indirectly	33.7	115.1		
C. Total Acres In Site	87.7	169.1		
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0	100		
B. Total Acres Statewide Important or Local Important Farmland	87.7	69.1		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.001	0.002		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	95	40		
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	8	55		

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	13	10		
2. Perimeter In Non-urban Use	(10)	9	8		
3. Percent Of Site Being Farmed	(20)	0	0		
4. Protection Provided By State and Local Government	(20)	0	0		
5. Distance From Urban Built-up Area	(15)	0	0		
6. Distance To Urban Support Services	(15)	0	0		
7. Size Of Present Farm Unit Compared To Average	(10)	0	0		
8. Creation Of Non-farmable Farmland	(10)	10	10		
9. Availability Of Farm Support Services	(5)	2	2		
10. On-Farm Investments	(20)	0	0		
11. Effects Of Conversion On Farm Support Services	(10)	0	0		
12. Compatibility With Existing Agricultural Use	(10)	5	5		
TOTAL SITE ASSESSMENT POINTS	160	39	35	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	8	55	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	39	35	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	47	90	0	0

Site Selected: Site A	Date Of Selection February 2014	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

This site provide adequate land to develop a biomass facility and are in close proximity to woody biomass feedstock. Wildfires are a major and growing concern in the project area and the project specifically seeks to use residues from these forests to reduce fuel loading to improve ecosystem health.

Name of Federal agency representative completing this form: Cheryl Davis	Date: 06/29/2015

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

merjent

p 612.746.3660 ▪ f 612.746.3679

800 Washington Avenue North ▪ Suite 315 ▪ Minneapolis, Minnesota ▪ 55401

April 16, 2014

Martin Nugent
Oregon Department of Fish and Wildlife
4034 Fairview Industrial Drive SE
Salem, Oregon 97302

Subject: Red Rock Biofuels
Project Notification and Request for Information

Dear Mr. Nugent:

Red Rock Biofuels LLC (Red Rock), a subsidiary of IR1 Group LLC, is proposing a project in Lake County, Oregon near the Town of Lakeview that will produce jet, diesel, and naptha fuels from a woody biomass feedstock. The plant will gasify approximately 400 short tons per day of feedstock on a dry basis using gasification technology. To meet the project goal, Red Rock is proposing to construct a new plant and associated infrastructure to implement a sustainable biomass harvesting program (see attached project location map).

The Department of Defense (DoD) U.S. Air Force Research Laboratory/Materials & Manufacturing Directorate, Manufacturing and Industrial Technologies Division (AFRL/RXM), in accordance with the National Environmental Policy Act (NEPA), is assessing the environmental impact of a proposed federal action to support the design, construction, validation, qualification and operation of the proposed Project at one or more locations.

This letter is to notify your office of the proposed project and to request assistance with our assessment of impacts on state-listed species. We also request any additional information or issues that may need to be addressed during project planning.

Red Rock has contracted with Merjent, Inc. (Merjent) to assist with the environmental review and permitting of the project, including protected species consultations. On November 27, 2013, Merjent consulted the Klamath Falls Field Office of the U.S. Fish and Wildlife Service and provided a preliminary review of sensitive species habitats in the Project area. On December 10, 2013, Merjent received concurrence that no federally listed species or critical habitat was identified within the Project area.

Red Rock is also considering an alternative site, illustrated on the enclosed project location map. No survey work has been completed at this location; however, the habitat appears similar and Red Rock believes the above determinations apply to this location as well.

Red Rock respectfully requests your assistance with its preliminary evaluation of state-listed sensitive species and habitats at the preferred and alternative project sites, and would appreciate any information or guidance regarding these species. To facilitate your review, a project location map is attached.

If you have any questions or would like additional information, please contact me at (612) 746-1616 or nchristenson@merjent.com, or contact Mary Dinh of Red Rock at (970) 223-6766 or maryd@ir1group.com. Thank you for your assistance.

Sincerely,

Naomi Christenson
Merjent, Inc.

cc: Mary Dinh, Red Rock Biofuels

Enclosures: Project Location Map

merjent

Telephone Log

Date:
March 18, 2014

To:
Martin Nugent, T&E Species Coordinator

Agency:
Oregon Department of Fish and Wildlife

Phone Number:
503-947-6309 (direct)

From:
Andrea Sampson

Company:
Merjent

Phone Number:
612-924-3977

Subject:
Consulting with the ODFW re: state-listed species

Andrea Sampson spoke with Martin Nugent regarding consulting with the ODFW directly on state-listed species issues as they relate to construction of energy-related projects.

Martin stated that generally speaking, as long as the project is on private land and provided there has been a consultation with the USFWS, it isn't necessary to consult with the ODFW. He confirmed that the ODFW has no legal authority over invertebrates or plants, unless the project is on state-owned or leased land. If the project is on private land, the ODFW essentially has no direct oversight, but that Take always remains an issue.

He recommended using the OR Biodiversity Information Center (ORBIC) website (http://orbic.pdx.edu/) for finding information regarding state-listed species; it's a "one-stop shop" and is the best database available for sensitive species information in the state. He confirmed that the ORBIC has excel files for public use that include county of occurrence information. The ORBIC can also do an ER review for a fee.

Martin also recommended looking into "Compass", a new interactive mapping tool for habitat conservation (http://www.dfw.state.or.us/maps/compass/index.asp). He stated that he didn't know anything about the site yet, as it had launched the day before, but that it was meant to be a tool for project planning.

Martin stated that he was always happy to help; he can be reached by phone or by e-mail (martin.nugent@state.or.us).

1

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Klamath Falls Fish and Wildlife Office
1936 California Avenue
Klamath Falls, Oregon 97601
(541) 885-8481 FAX (541)885-7837

In Reply Refer To:
08EKLA00-2014-CPA-0003

DEC 1 0 2013

Naomi Christenson
Merject, Inc.
800 Washington Avenue North, Suite 315
Minneapolis, MN 55401

Subject: Red Rock Biofuels Project

Dear Ms. Christenson:

The U.S. Fish and Wildlife Service (Service) appreciates the opportunity to comment on the potential effects of the subject project on federally-listed species. The Service has reviewed the information provided in your November 27, 2013, letter and information contained in our files and determined that no federally-listed species or critical habitat occurs within the project area. Should the proposed project plans change, if additional information becomes available on the distribution of listed or proposed species in the proposed project area, or a new species is listed or critical habitat designated that may be affected by the proposed project, then please contact Nolan Banish of my staff at (541) 885-2508.

Sincerely,

Laurie R. Sada
Field Supervisor

From: Raney, Ron - NRCS, Portland, OR
To: April Brehm
Subject: RE: Farmland Conversion Impact Rating Form 1006
Date: Thursday, December 12, 2013 5:06:44 PM
Attachments: Red Rock_Form 1006_return.pdf

April,

Here is the AD-1006 for the sites in Lakeview, OR.

Please return a copy of the AD-1006 when a site selection has been made. Complete section 7 of the form with date, site (A or B) and the reason for selection updated. One of the things I do with FPPA is provide Oregon input annually to a national report that compiles acres of potential farmland converted with federal funds.

Thanks

Ron Raney
Soil Quality Specialist
StateSoils/Technology Staff
1201 NE Lloyd Blvd, Suite 900
Portland, OR 97232
503-414-3263

Don't treat your soil like dirt.

From: April Brehm [mailto:abrehm@merjent.com]
Sent: Friday, December 06, 2013 12:39 PM
To: Raney, Ron - NRCS, Portland, OR
Cc: CRABILL, JOHN A DR-03 USAF AFMC AFRL/RXME; Mary Dinh
Subject: RE: Farmland Conversion Impact Rating Form 1006

Hi Ron,

As requested, please find attached the facility footprint drawings and the Form 1006. The footprint would be 40 acres on either site. Please let me know if you need anything further. I can be reached best on my cell at [redacted]

April

merjent

April Brehm

merjent

800 Washington Avenue North • Suite 315 • Minneapolis, Minnesota • 55401

p 612.746.3660 • f 612.746.3679

November 27, 2013

Laurie Sada, Field Supervisor
U.S. Fish and Wildlife Service
Klamath Falls Office
1936 California Avenue
Klamath Falls, Oregon 97601

Subject: Red Rock Biofuels
Project Notification and Request for Information

Dear Ms. Sada:

Red Rock Biofuels LLC (Red Rock), subsidiary of IR1 Group LLC, is proposing a project in Lake County, Oregon near the Town of Lakeview that will produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock. The plant will gasify approximately 400 short tons per day of feedstock on a dry basis. To meet the project goal, Red Rock is proposing to construct a new plant and associated infrastructure to implement a sustainable biomass harvesting program (see attached project location maps).

The Department of Defense (DoD) U.S. Air Force Research Laboratory/Materials & Manufacturing Directorate, Manufacturing and Industrial Technologies Division (AFRL/RXM) is assessing the environmental impact, in accordance with the National Environmental Policy Act (NEPA), of a proposed federal action to support the design, construction, validation, qualification and operation of the proposed Project at one or more locations.

This letter is to notify your office of the proposed project and provide preliminary review of sensitive species and habitats in the Project area, and to request concurrence with our initial assessment of impacts on federally listed species. We also request any additional information or issues that may need to be addressed during project planning.

Red Rock has contracted with Merjent, Inc. (Merjent) to assist with the environmental review and permitting of the project, including protected species consultations. Merjent identified the following federally listed species known to occur in Lake County[1]. No critical habitat was identified within the Project area.

[1] http://www.fws.gov/klamathfallsfwo/es/species_list/Lake%20County%20Species%20List%2011042013.pdf

Species	Status	Designated Critical Habitat	Habitat
Modoc sucker (*Catostomus microps*)	END	YES	Primarily found in mud and rock bottom pools in small streams. Cover consists of overhanging banks, larger rocks, woody debris, and aquatic rooted vegetation or filamentous algae. Larvae occupy shallow, vegetated margins and juveniles tend to remain free-swimming in the shallows of large pools, particularly near vegetated areas, while larger juveniles and adults remain mostly on, or close to, the bottom (Moyle and Marciochi 1975). Modoc suckers likely do not move large distances but do move upstream to spawn and move downstream when water levels drop in summer.
Warner sucker (*Catostomus warnerensis*)	THR	YES-	Larvae are found in shallow backwater pools or on stream margins where there is no current, often among or near macrophytes (aquatic plants). Young use deep still pools, but also move into faster flowing areas near the heads of pools. Adults use stretches of stream where the gradient is low enough to allow the formation of long pools. These pools tend to have undercut banks, large beds of aquatic macrophytes, root wads or boulders, a vertical temperature differential of at least 2º C, a maximum depth >1.5 meters, and over-hanging vegetation.
Shortnose sucker (*Chasmistes brevirostris*)	END	YES	Dwells in the deeper water of lakes and spawns in springs or tributary streams upstream from its home lake. Some stream dwelling populations also exist. Areas with gravel or close-set stone (cobble) bottoms are generally preferred for spawning habitat. In addition, spawning streams have a fairly shallow shoreline with an abundance of aquatic vegetation; these areas provide a safe haven for the young larvae during their journey back downstream to their home lakes or the deep, quiet waters of rivers. Shoreline vegetation in both lake and river habitats is important for the rearing of larval and juvenile suckers.
Hutton tui chub (*Gila bicolor ssp.*)	THR	NO	Occurs in Hutton Spring, Lake County, Oregon. The size of the spring hole of Hutton Spring varies with excavations made by the owner. The fish use the vegetation and whatever debris is present for cover. Some of the larger individuals use the deep spring hole as cover. The spring is in a grassy area bordered to the north and west by shrubby rangeland and to the east and south by the lake bed of pluvial (rain-influenced) Alkali Lake.
Foskett speckled dace (*Rhinichthys osculus ssp)*	THR	NO	Occurs within Foskett and Dace springs which are extremely small and shallow, with limited habitat for fish. Foskett Spring originates in a pool about five meters across, then flows toward Coleman Lake in a narrow, shallow channel. The source pool has a loose, sandy bottom and is thick with aquatic plants. The spring outflow channel eventually turns into a marsh and finally dries up before reaching the dry lake bed of Coleman Lake. Dace Spring is about one kilometer south of Foskett Spring and is smaller and more choked with plants. Fish at Foskett Spring live in the main spring pool, outflow channel, and tiny outflow rivulets that are at times only a few inches wide and deep.
Bull trout (*Salvelinus confluentus)*	THR	YES	Bull trout require stable stream channels, very cold water, clean spawning gravel, complex and diverse cover, and unblocked migration routes. They may be either resident or migratory. Migratory fish are usually spawned in small headwater streams, and then migrate to larger streams, rivers, lakes, reservoirs or salt water where they grow to maturity. Smaller resident fish remain near the areas where they were spawned while larger, migratory, fish will move considerable distances to spawn when habitat conditions allow.

Species	Status	Designated Critical Habitat	Habitat
Green's tuctoria (*Tuctoria greenei*)	END	YES	Grows in the bottom of dried vernal pools on the eastern side of the Sacramento and San Joaquin Valleys. Occurs in Northern Basalt Flow, Northern Claypan, and Northern Hardpan vernal pools (Sawyer and Keeler-Wolf 1995) on both low and high terraces within grassland communities, or, rarely, pine forest (one Shasta Co. occurrence). Plants have been documented on clay, loam, and stony clay loam soils, and pools are underlain by iron-silica cemented hardpan, tuffaceous alluvium, or claypan.
Slender Orcutt grass (*Orcuttia tenuis)*	THR	NO	Occurs within vernal pools with a very well-developed soil profile. Prefers clay soils which shrink and swell. As they dry, large cracks develop which allow seeds trapped deeply in the soil to float to the surface with the first inundation. Between 14 and 50 times as many seeds are in the soil as live plants, too deep to germinate. Habitat creation for this plant would probably not succeed because of its requirement for these well-developed soils. Conversely, any activity which disturbs the soil profile will negatively affect *O. tenuis*.
Oregon spotted frog (*Rana pretiosa*)	PROP	NO	Almost always found in or near a perennial body of water that includes zones of shallow water and abundant emergent or floating aquatic plants, which the frogs use for basking and escape cover (Leonard et al. 1993, Corkran and Thoms 1996, McAllister and Leonard 1997, Pearl 1997, Pearl 1999). Oregon spotted frogs seem to prefer fairly large, warm marshes that can support a large enough population to persist despite high predation rates (Hayes 1994) and sporadic reproductive failures. Large concentrations of Oregon spotted frogs have been found in areas with the following characteristics: (1) the presence of good breeding and overwintering sites connected by year-round water; (2) reliable water levels that maintain depth throughout the period between oviposition and metamorphosis; and (3) the absence of introduced predators, especially warm-water game fish and bullfrogs.

Vertebrate Species – Fish

As identified in the table above, six species of fish are known to occur within Lake County, four of which have critical habitat designated, although no critical habitat exists within the Project area. Based on a wetland delineation completed in April and June of 2012, no streams or other water features are within the proposed Project area.[2] Red Rock will implement best management practices during construction and will install appropriate erosion control devices to prevent sediment from entering nearby wetlands or other waters. Therefore, Red Rock believes this Project is *not likely to adversely* affect federally listed fish species.

Flowering Plants - Slender Orcutt Grass and Green's Tuctoria

Two federally listed plants are known to occur within Lake County are associated with vernal pools, which based on the aforementioned wetland delineation survey, do not occur within the Project area. Red Rock will implement best management practices during construction and will install appropriate erosion control devices to prevent sediment from entering nearby wetlands. Therefore, Red Rocks believes this Project will have *no effect* on federally listed plant species.

Oregon Spotted Frog

The habitat required by the Oregon spotted frog (perennial waterbodies, shallow water and abundant emergent or floating aquatic plants, and fairly large warm marshes) does not occur within the Project

[2] RABE Consulting. 2012. Lakeview Geothermal Project Wetland Delineation. Prepared for: Town of Lakeview, June 2012.

area. Red Rock will implement best management practices during construction and will install appropriate erosion control devices to prevent sediment from entering nearby wetlands. For these reasons, Red Rock believes this Project will not adversely impact the Oregon spotted frog.

Red Rock is also considering an alternative site, illustrated on the enclosed project location map. No survey work has been completed at this location; however, the habitat appears similar and Red Rock believes the above determinations apply to this location as well.

Red Rock respectfully requests your review of its preliminary evaluation of sensitive species and habitats at the preferred and alternative project sites, and would appreciate any additional information or guidance regarding these species. To facilitate your review, a project location map is attached.

If you have any questions or would like additional information, please contact me at (612) 746-1616 or nchristenson@merjent.com, or contact Mary Dinh of Red Rock at (970) 223-6766 or maryd@ir1group.com. Thank you for your assistance.

Sincerely,

Naomi Christenson
Merjent, Inc.

cc: Mary Dinh, Red Rock Biofuels

Enclosures: Project Location Maps

From: April Brehm
To: "ron.raney@or.usda.gov"
Cc: "CRABILL, JOHN A DR-03 USAF AFMC AFRL/RXME"; "Mary Dinh"
Subject: RE: Farmland Conversion Impact Rating Form 1006
Date: Friday, December 06, 2013 2:39:00 PM
Attachments: Red Rock_Form 1006.pdf
SiteA_Red_Rock_facility_footprint_12-06-2013.pdf
SiteB_Red_rock_facility_footprint_12-06-2013.pdf

Hi Ron,

As requested, please find attached the facility footprint drawings and the Form 1006. The footprint would be 40 acres on either site. Please let me know if you need anything further. I can be reached best on my cell at [redacted]

April

merjent

April Brehm

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401
www.merjent.com

612.746.3660 main
612.924.3960 direct
[redacted]
612.746.3679 fax
abrehm@merjent.com

From: April Brehm
Sent: Wednesday, November 27, 2013 3:29 PM
To: 'ron.raney@or.usda.gov'
Cc: 'CRABILL, JOHN A DR-03 USAF AFMC AFRL/RXME'; 'Mary Dinh'
Subject: Farmland Conversion Impact Rating Form 1006

Hi Ron,

Attached to this email is the Farmland Conversion Impact Rating Form 1006 for your review, as we discussed last week. Please let me know if you need any additional information.

Thank you and have a nice Thanksgiving weekend.

Kind Regards,
April

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request November 27, 2013	
Name of Project Red Rock Biofuel Facility		Federal Agency Involved Department of Defense	
Proposed Land Use industrial		County and State Lake County, Oregon	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS	Person Completing Form:
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☐ NO ☐	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres: %	
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	40	40		
B. Total Acres To Be Converted Indirectly	54.6	129.1		
C. Total Acres In Site	94.6	169.1		
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	13	10		
2. Perimeter In Non-urban Use	(10)	9	8		
3. Percent Of Site Being Farmed	(20)	0	0		
4. Protection Provided By State and Local Government	(20)	0	0		
5. Distance From Urban Built-up Area	(15)	0	0		
6. Distance To Urban Support Services	(15)	0	0		
7. Size Of Present Farm Unit Compared To Average	(10)	0	0		
8. Creation Of Non-farmable Farmland	(10)	10	10		
9. Availability Of Farm Support Services	(5)	2	2		
10. On-Farm Investments	(20)	0	0		
11. Effects Of Conversion On Farm Support Services	(10)	0	0		
12. Compatibility With Existing Agricultural Use	(10)	5	5		
TOTAL SITE ASSESSMENT POINTS	160	39	35	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	39	35	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	39	35	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

The sites provide adequate land to develop a biomass facility and are in close proximity to woody biomass feedstock. Wildfires are a major and growing concern in the project area and the project specifically seeks to use residues from these forests to reduce fuel loading to improve ecosystem health.

Name of Federal agency representative completing this form: April Brehm	Date: 11/27/2013

(See Instructions on reverse side) Form AD-1006 (03-02)

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request November 27, 2013	
Name of Project Red Rock Biofuel Facility		Federal Agency Involved Department of Defense	
Proposed Land Use industrial		County and State Lake County, Oregon	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS	Person Completing Form:
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☐ NO ☐	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres: %	
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	40	40		
B. Total Acres To Be Converted Indirectly	0	0		
C. Total Acres In Site	89.3	169.1		
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	13	10		
2. Perimeter In Non-urban Use	(10)	9	8		
3. Percent Of Site Being Farmed	(20)	0	0		
4. Protection Provided By State and Local Government	(20)	0	0		
5. Distance From Urban Built-up Area	(15)	0	0		
6. Distance To Urban Support Services	(15)	0	0		
7. Size Of Present Farm Unit Compared To Average	(10)	0	0		
8. Creation Of Non-farmable Farmland	(10)	10	10		
9. Availability Of Farm Support Services	(5)	2	2		
10. On-Farm Investments	(20)	0	0		
11. Effects Of Conversion On Farm Support Services	(10)	0	0		
12. Compatibility With Existing Agricultural Use	(10)	5	5		
TOTAL SITE ASSESSMENT POINTS	160	39	35	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	39	35	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	39	35	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used?
		YES ☐ NO ☑

Reason For Selection:

The sites provide adequate land to develop a biomass facility and are in close proximity to woody biomass feedstock. Wildfires are a major and growing concern in the project area and the project specifically seeks to use residues from these forests to reduce fuel loading to improve ecosystem health.

Name of Federal agency representative completing this form: April Brehm — Date: 11/27/2013

(See Instructions on reverse side) Form AD-1006 (03-02)

Merjent

November 21, 2013

Mr. Ron Raney *Via Email*
Soil Quality Specialist
State Soils/Technology Staff
Natural Resources Conservation Service
1201 NE Lloyd Blvd., Suite 900
Portland, OR 97232

Re: Farmland Conversion Impact Rating Form 1006

Dear Mr. Raney:

On behalf of the Department of Defense, U.S. Air Force Research Laboratory, I respectfully submit Farmland Conversion Impact Rating Form 1006 for your review and consideration.

Red Rock Biofuels LLC (Red Rock), subsidiary of IR1 Group LLC, is proposing a project in Lake County, Oregon near the Town of Lakeview that will produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock. The plant will gasify approximately 400 short tons per day of feedstock on a dry basis. To meet the project goal, Red Rock is proposing to construct a new plant and associated infrastructure to implement a sustainable biomass harvesting program.

The Department of Defense (DoD) U.S. Air Force Research Laboratory/Materials & Manufacturing Directorate, Manufacturing and Industrial Technologies Division (AFRL/RXM) is assessing the environmental impact, in accordance with the National Environmental Policy Act (NEPA), of a proposed federal action to support the design, construction, validation, qualification and operation of the proposed Project at one or more locations. As the applicant, Red Rock has contracted with Merjent, Inc. (Merjent) to assist with the environmental review and permitting of the project, including completion of Form 1006.

Two parcels of land in Lake County, Oregon are included for your review. Site A and Site B are located in the NW ¼ of Section 27, Township 39S, Range 20E. Site A is located between Highway 395 and the Lake County Railroad. Site B is located immediately east of the Lake County Railroad and south of Stock Dr Lane (Figure 1). Additional figures have been included to assist with your review: Soils and prime farmland maps using 2010 SSURGO data, and zoning maps.

The following table identifies the number of acres for each prime farmland soil classification based on U.S Geological Service SSURGO data (2010):

Farmland Soil Classification	Site A	Site B
Total Acres Prime and Unique Farmland	0	0
Total Acres Statewide Important or Local Important Farmland	94.55	66.61
Prime Farmland if Irrigated	0.03	92.51
Prime Farmland if Irrigated and Drained	0	9.97

Please contact April Brehm with Merjent at 612.924.3960 or abrehm@merjent.com with any questions.

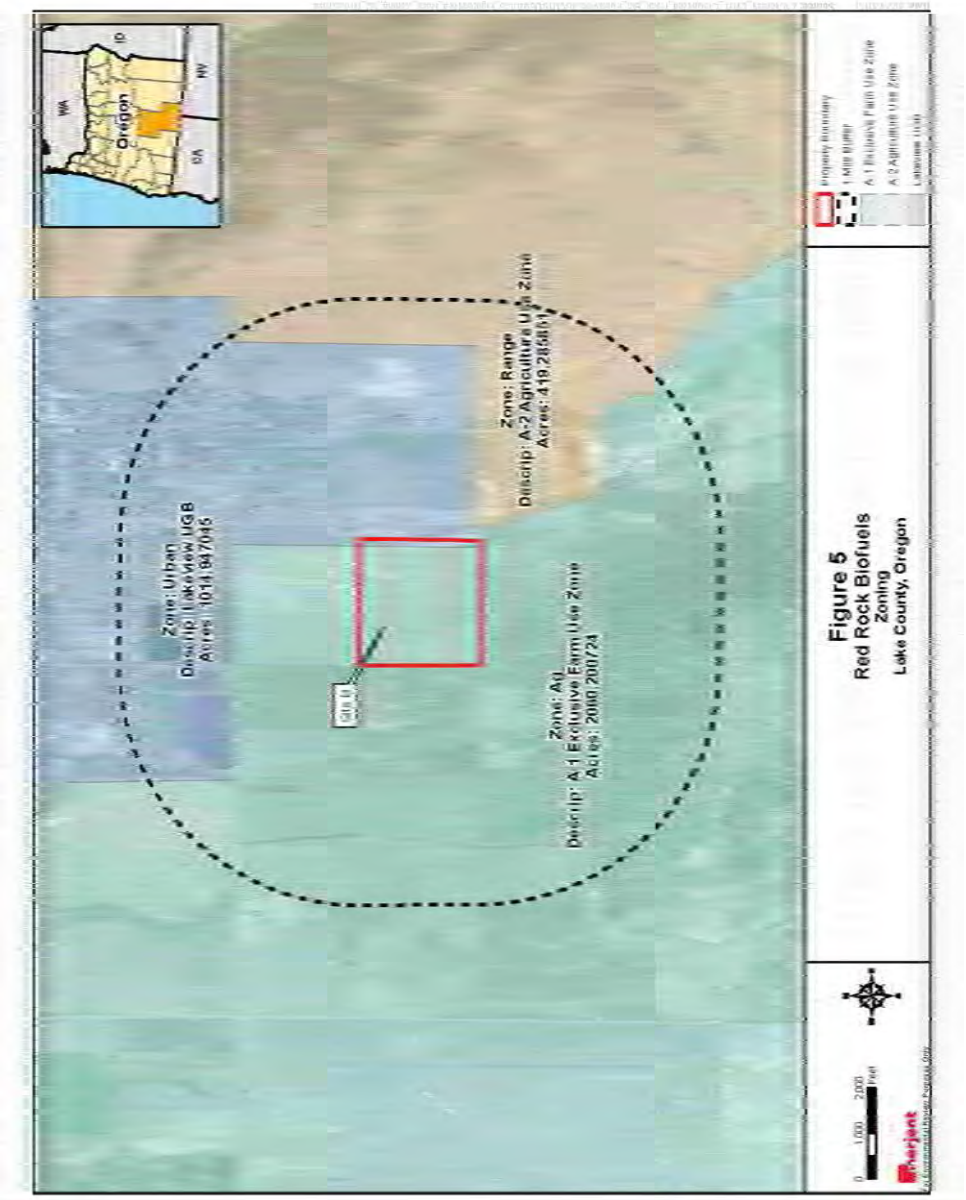
Sincerely,

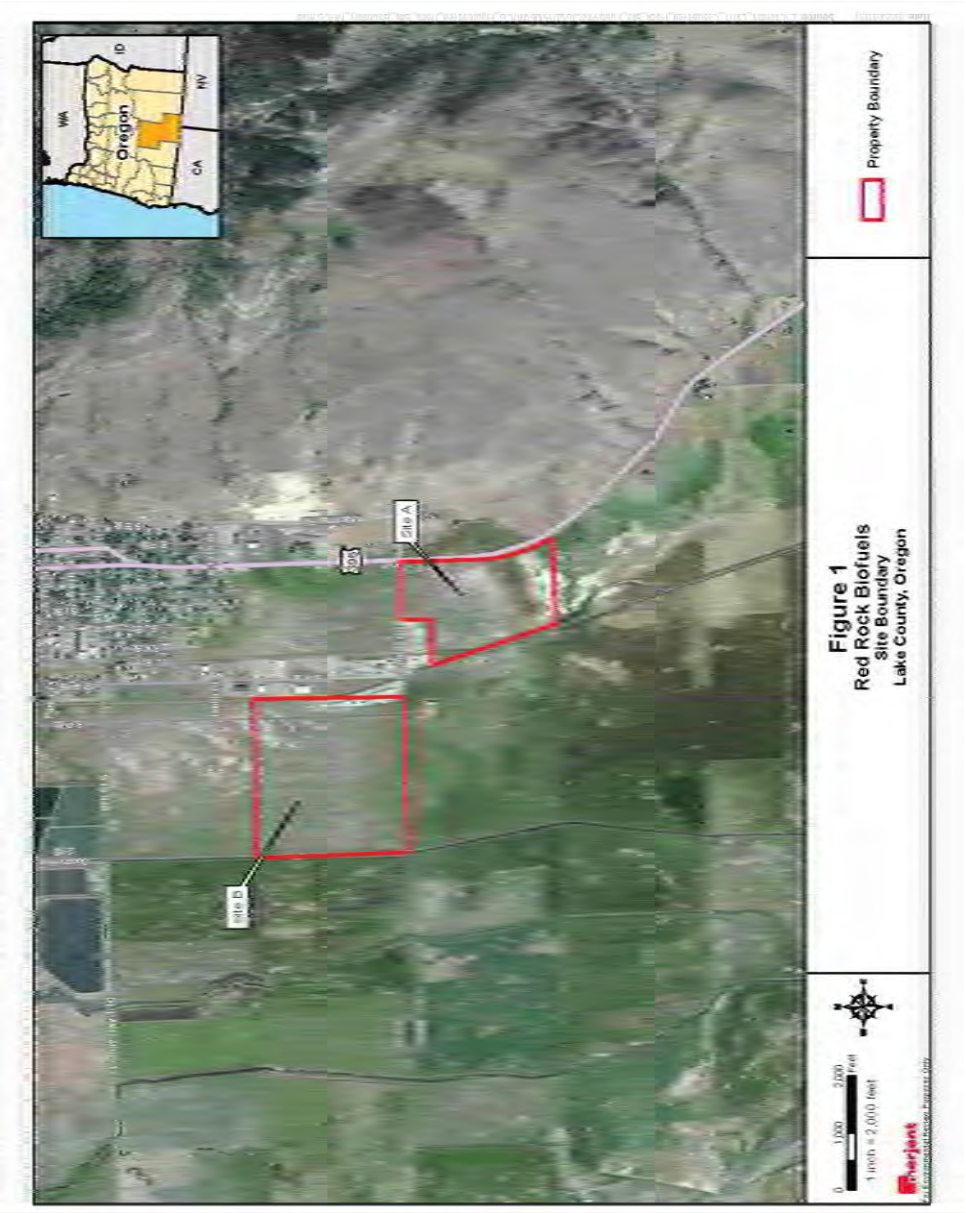
//s//

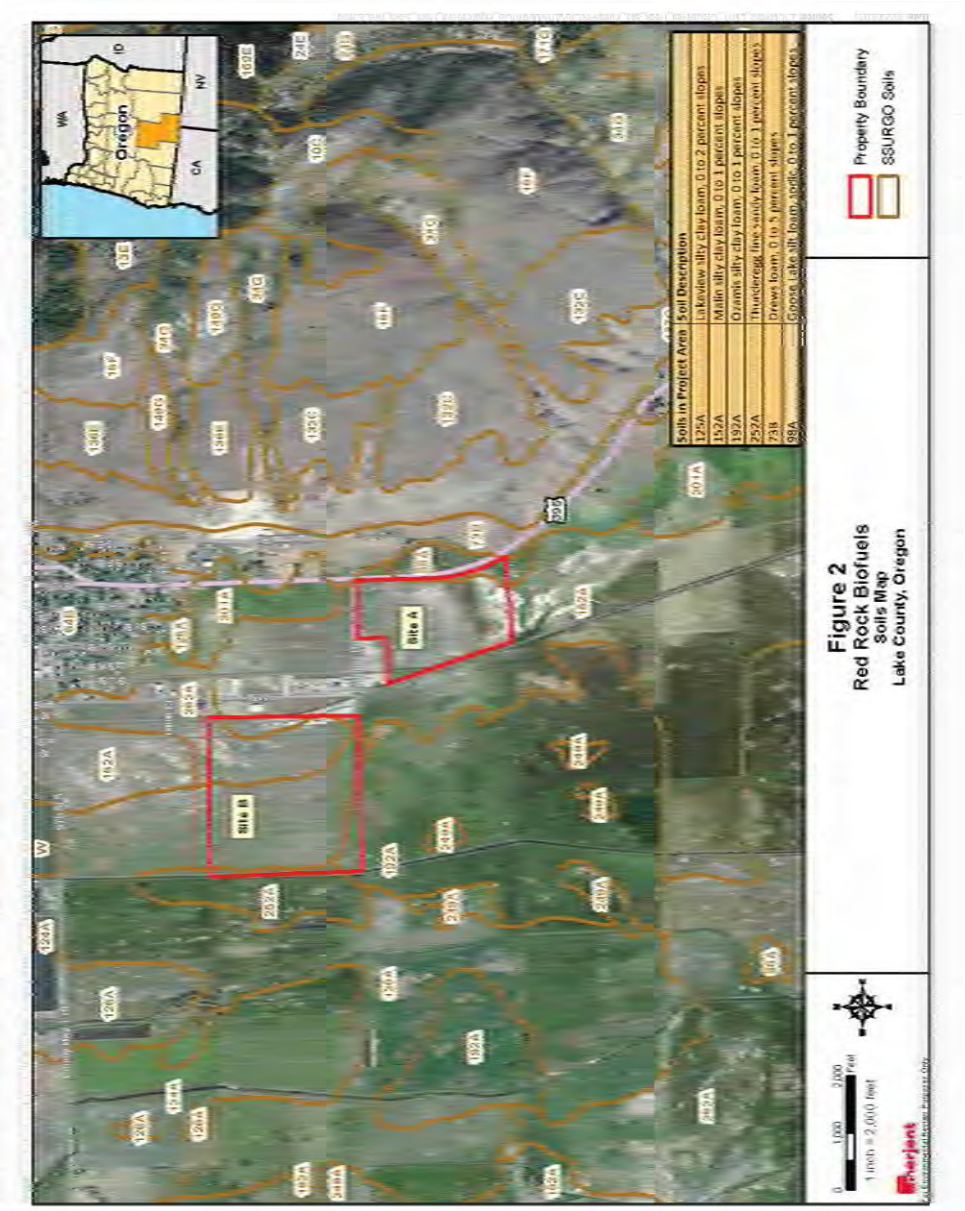
April Brehm
Senior Analyst
Merjent, Inc.

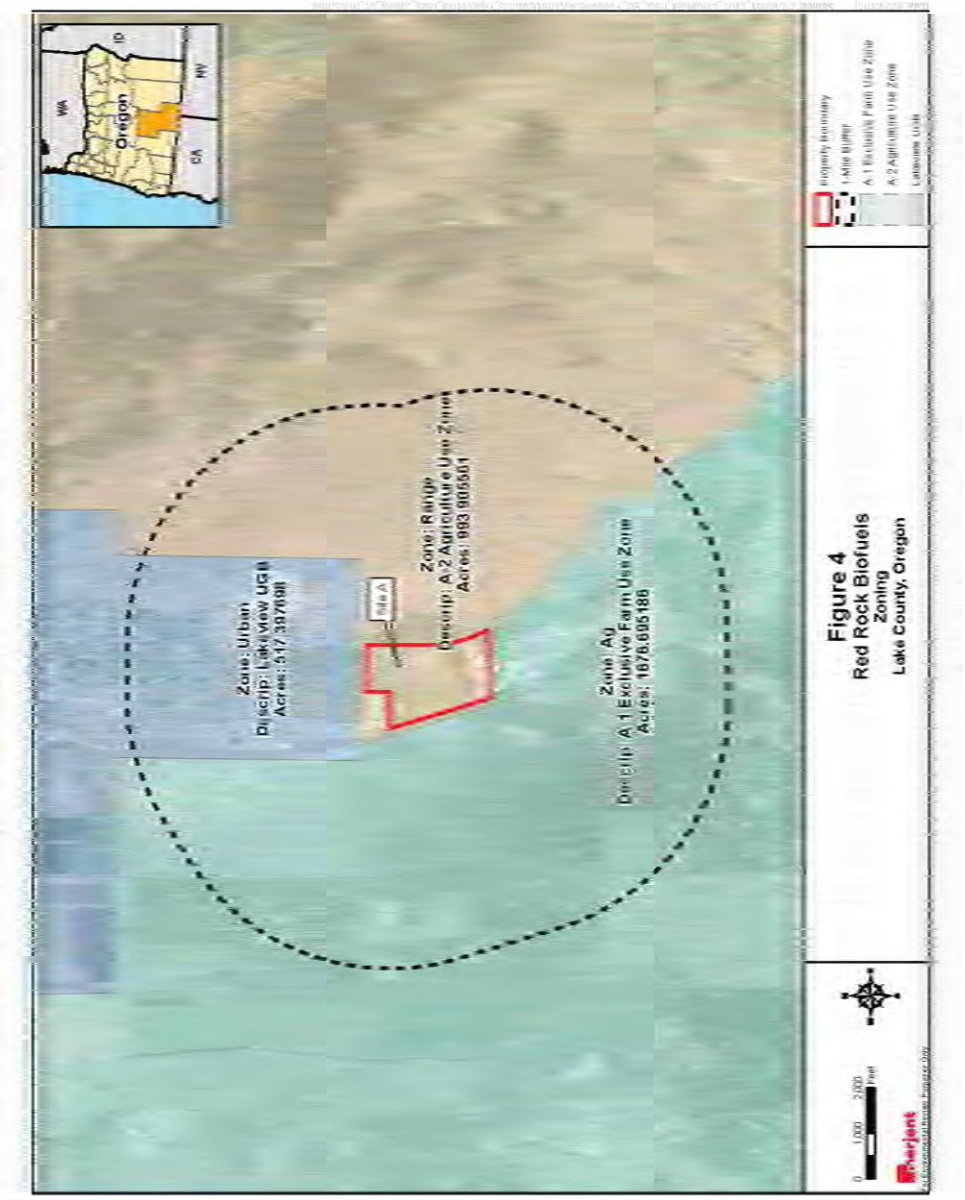
Attachments: Farmland Conversion Impact Rating Form 1006
Site Boundary Map
Soils Map
Prime Farmland Map
Zoning Maps

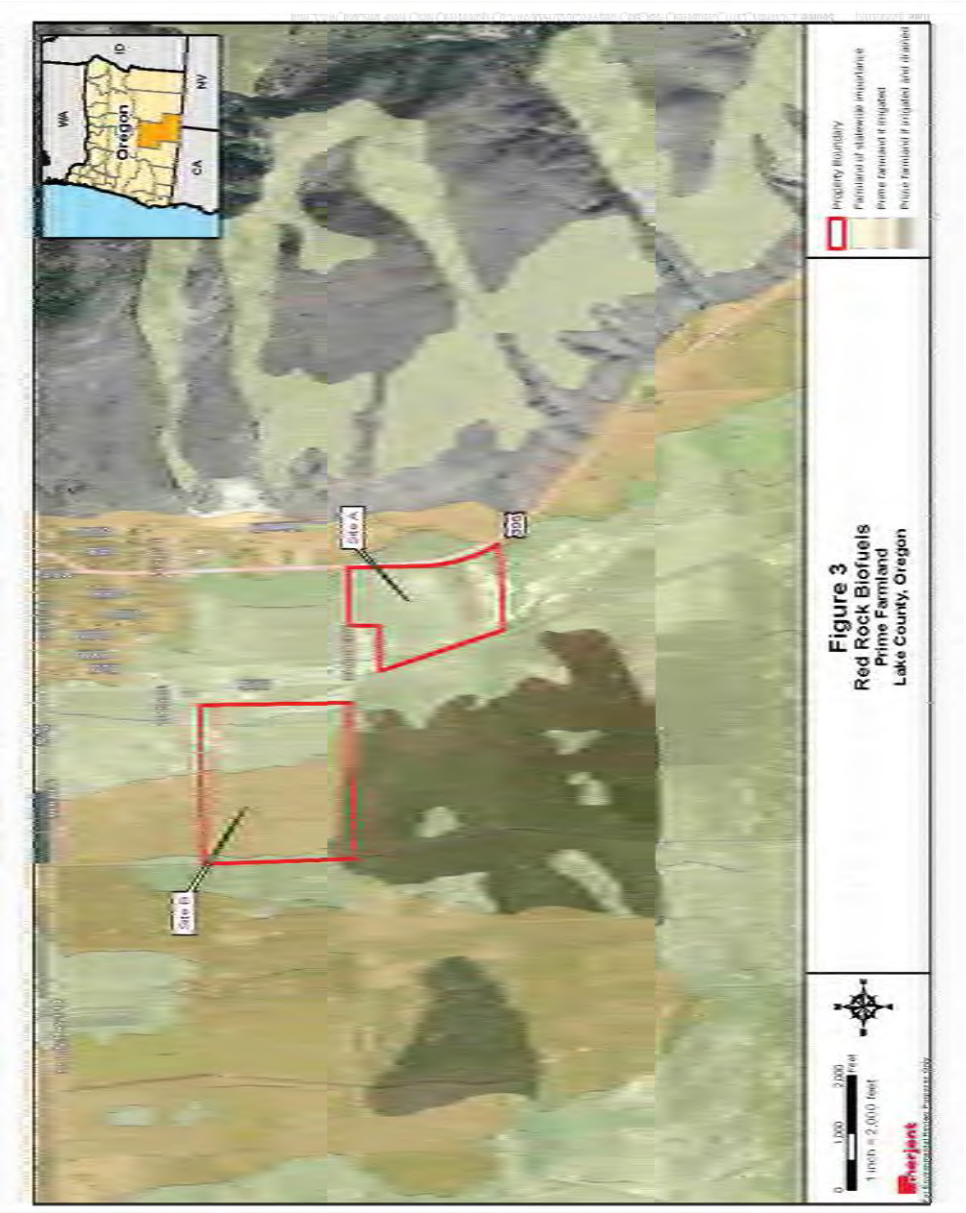
cc: John A. Crabill, U.S. Air Force Research Laboratory/Materials & Manufacturing Directorate, Manufacturing and Industrial Technologies Division
Mary Dihn, Red Rock Biofuels, LLC.


Figure 5
Red Rock Biofuels
Zoning
Lake County, Oregon
Zone: Range
Zone: Ag
Zone: Urban
Oregon
WA
ID
NV
CA

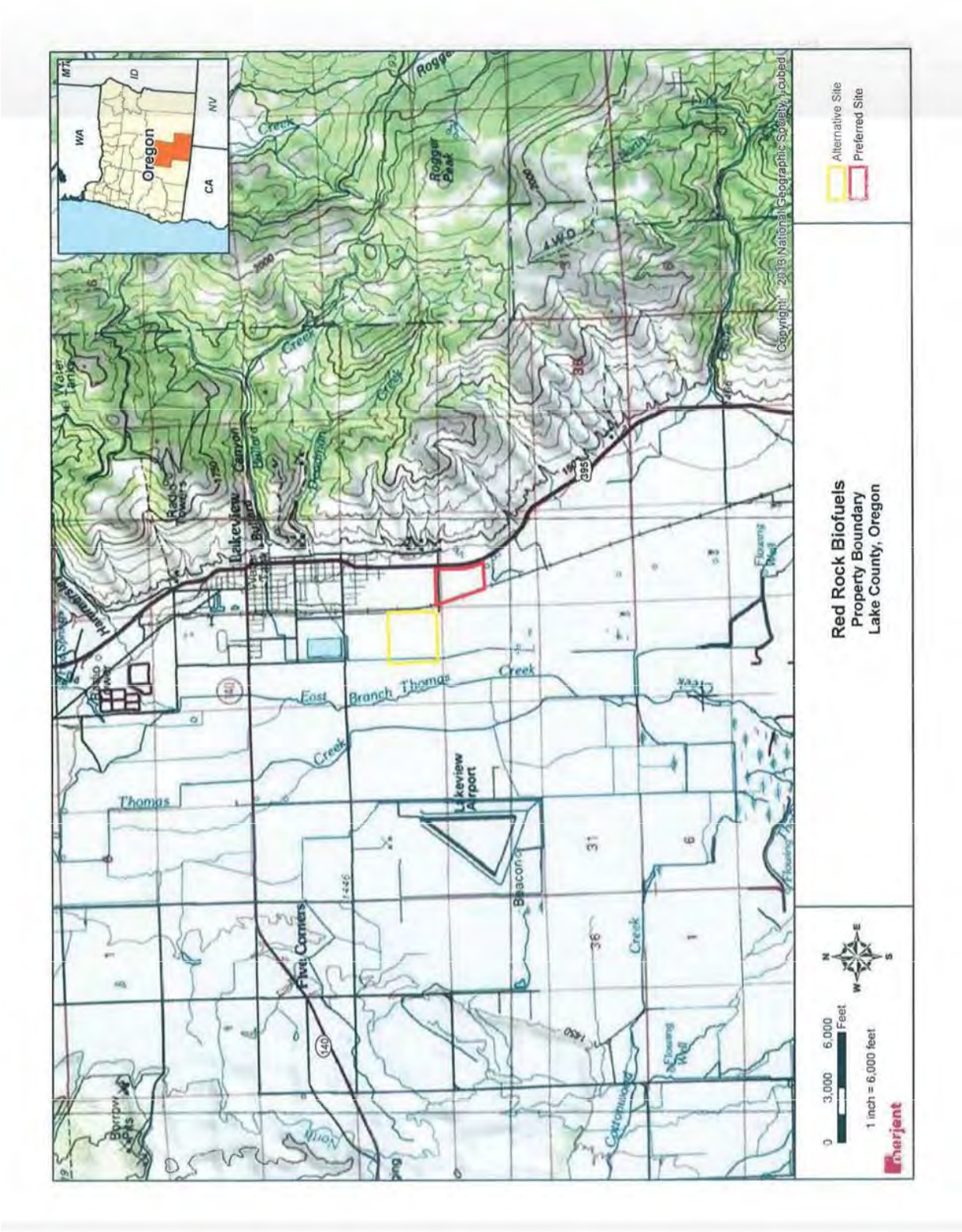

Figure 1
Red Rock Biofuels
Site Boundary
Lake County, Oregon
Property Boundary
Site A
Site B
Oregon
WA
ID
NV
CA
1 inch = 2,000 feet
Therjant

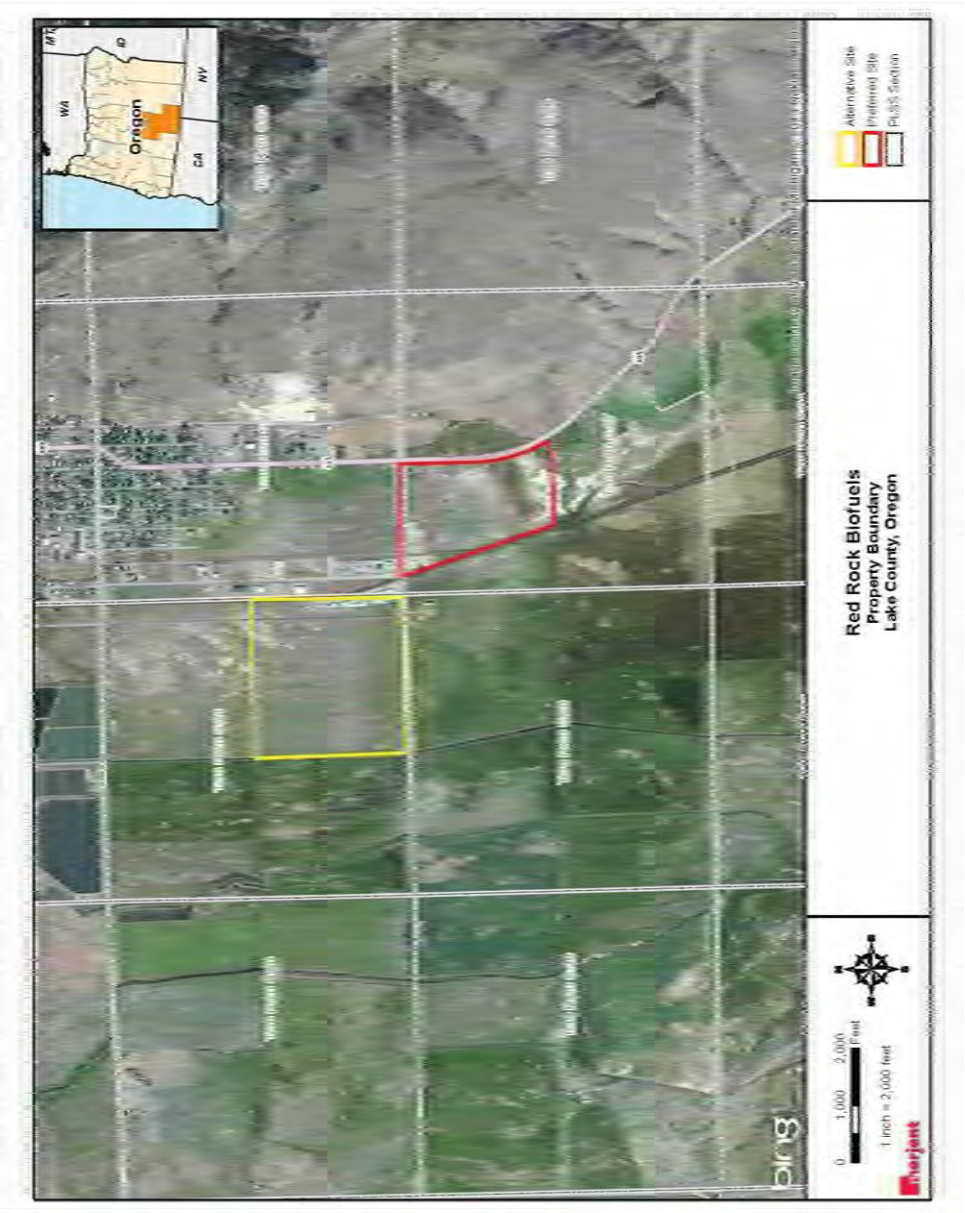

Figure 2
Red Rock Biofuels
Soils Map
Lake County, Oregon
Property Boundary
SSURGO Soils
Site A
Site B
Soils in Project Area
Soil Description
125A Lakeview silty clay loam, 0 to 2 percent slopes
152A Malin silty clay loam, 0 to 1 percent slopes
192A Oramis silty clay loam, 0 to 1 percent slopes
252A Thuncreek fine sandy loam, 0 to 1 percent slopes
738 Drews loam, 0 to 5 percent slopes
98A Goose Lake silt loam, ponded, 0 to 1 percent slopes
Oregon
WA
ID
NV
CA
1 inch = 2,000 feet

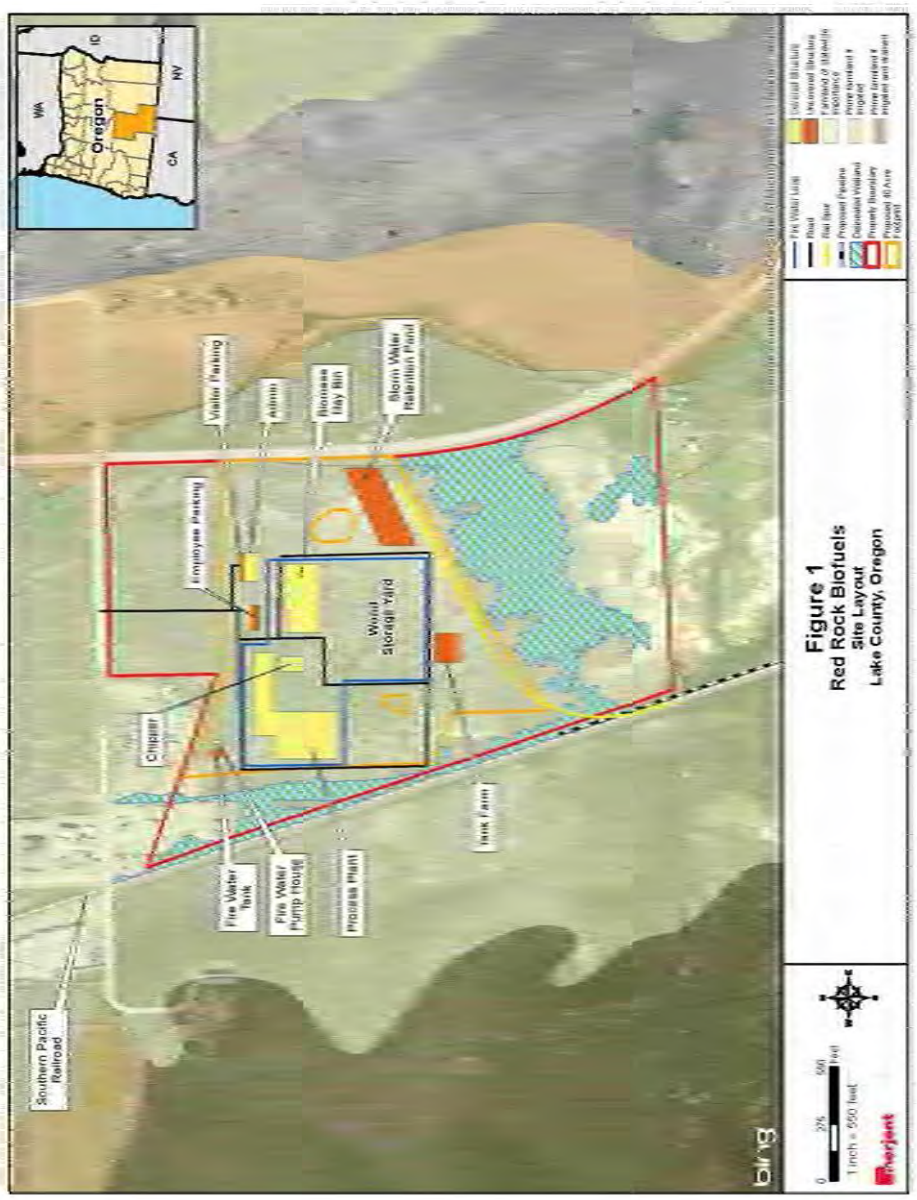

Figure 4
Red Rock Biofuels
Zoning
Lake County, Oregon
Zone: Urban
Descrip: Lakeview UGB
Acres: 517.397698
Zone: Range
Descrip: A-2 Agriculture Use Zone
Acres: 983.905561
Zone: Ag
Descrip: A-1 Exclusive Farm Use Zone
Acres: 1878.695188
Property Boundary
1-Mile Buffer
A-1 Exclusive Farm Use Zone
A-2 Agriculture Use Zone
Lakeview UGB
Oregon
WA
ID
NV
CA
0
1,000
2,000
Feet

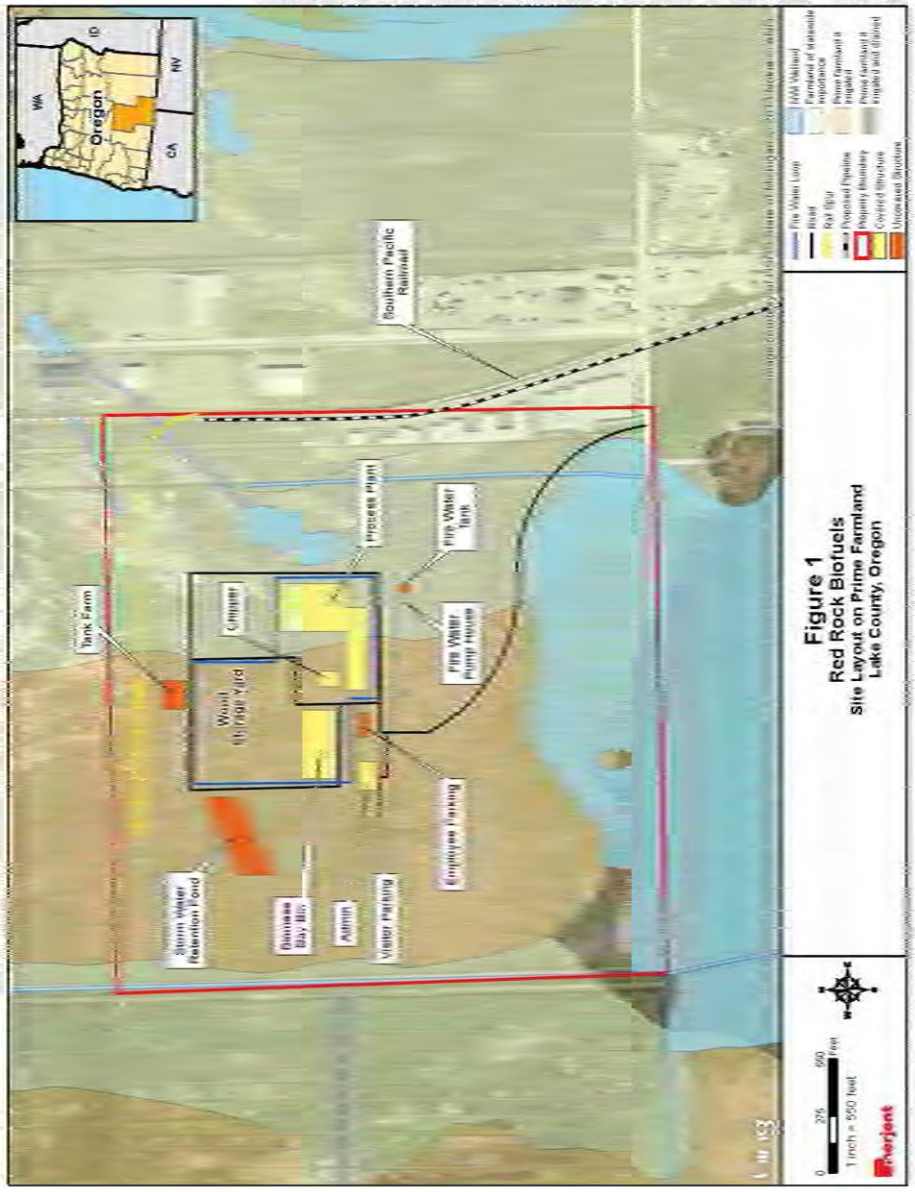

Figure 3
Red Rock Biofuels
Prime Farmland
Lake County, Oregon
Property Boundary
Farmland of statewide importance
Prime farmland if irrigated
Prime farmland if irrigated and drained
Site A
Site B
395
Oregon
WA
ID
NV
CA
0
1,000
2,000 Feet
1 inch = 2,000 feet
Herjant


Red Rock Biofuels
Property Boundary
Lake County, Oregon
Alternative Site
Preferred Site
PLSS Section
Oregon
MT
ID
NV
WA
CA
T39 R20 S26
T39 R20 S25
T39 R20 S24
T39 R20 S23
T39 R20 S22
T39 R20 S27
T39 R20 S28
T39 R20 S29
T39 R20 S30
T39 R20 S31
bing
0 1,000 2,000 Feet
1 inch = 2,000 feet


Red Rock Biofuels
Property Boundary
Lake County, Oregon
Alternative Site
Preferred Site
Oregon
WA
ID
NV
CA
Lakeview Airport
East Branch Thomas Creek
Thomas Creek
Five Corners
Beacon
Rogge Peak
Lakeview
Hartman Park
Flowing Well
Cottonwood Creek
Copyright © 2013 National Geographic Society, i-cubed
0 3,000 6,000 Feet
1 inch = 6,000 feet
Parsons


Red Rock Biofuels
Property Boundary
Lake County, Oregon
Alternative Site
Preferred Site
Public Section
Oregon
WA
NV
CA
0 1,000 2,000 Feet
1 inch = 2,000 feet
Therjent


Figure 1
Red Rock Biofuels
Site Layout
Lake County, Oregon
Southern Pacific Railroad
Fire Water Tank
Fire Water Pump House
Process Plant
Chipper
Employee Parking
Visitor Parking
Admin
Biomass Hay Bin
Storm Water Retention Pond
Wood Storage Yard
Tank Farm
Oregon
WA
ID
NV
CA
1 inch = 550 feet
Emerjent


Figure 1
Red Rock Biofuels
Site Layout on Prime Farmland
Lake County, Oregon
Southern Pacific Railroad
Process Plant
Fire Water Tank
Fire Water Pump House
Chipper
Wood Storage Yard
Tank Farm
Employee Parking
Storm Water Retention Pond
Biomass Bay Bin
Admin
Visitor Parking
Oregon
WA
ID
NV
CA
1 inch = 550 feet
0
275
550
Feet
Project

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

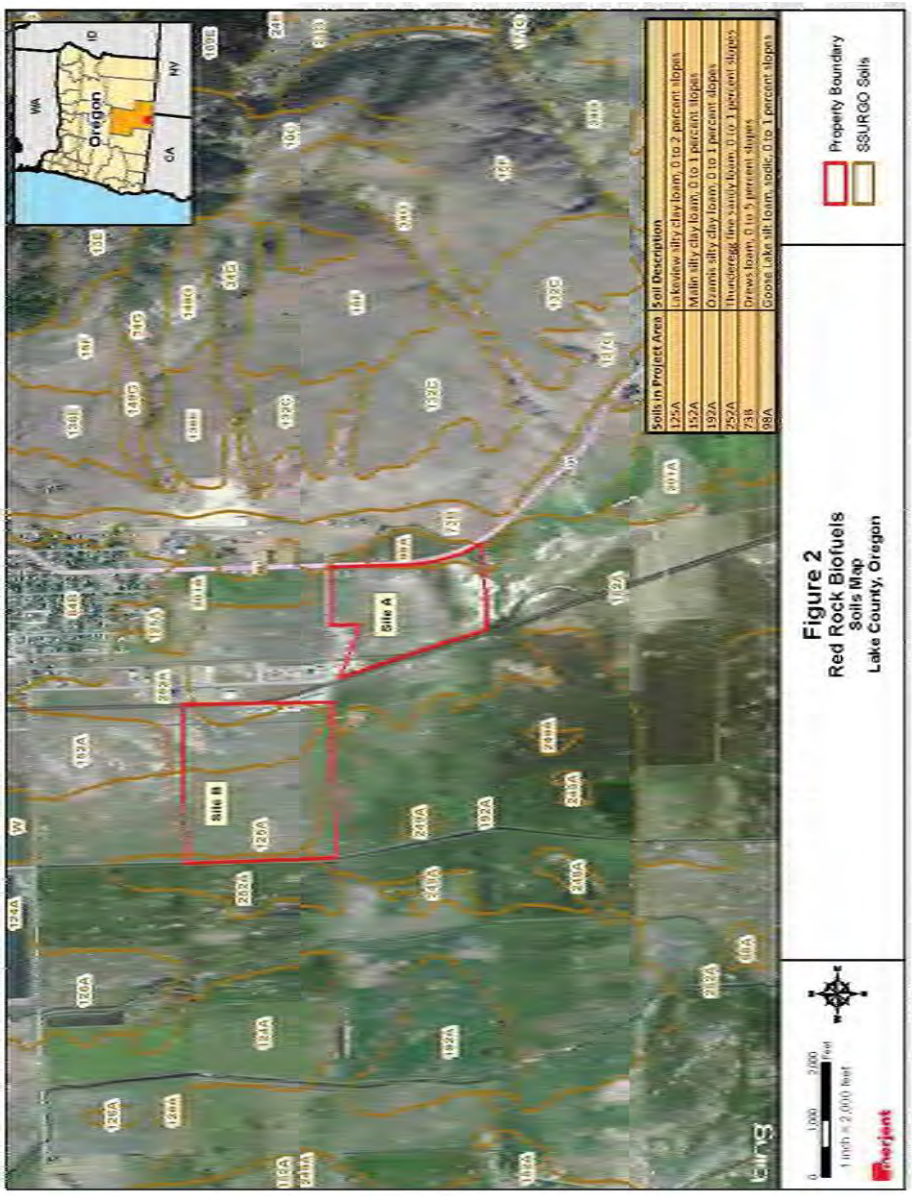
Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

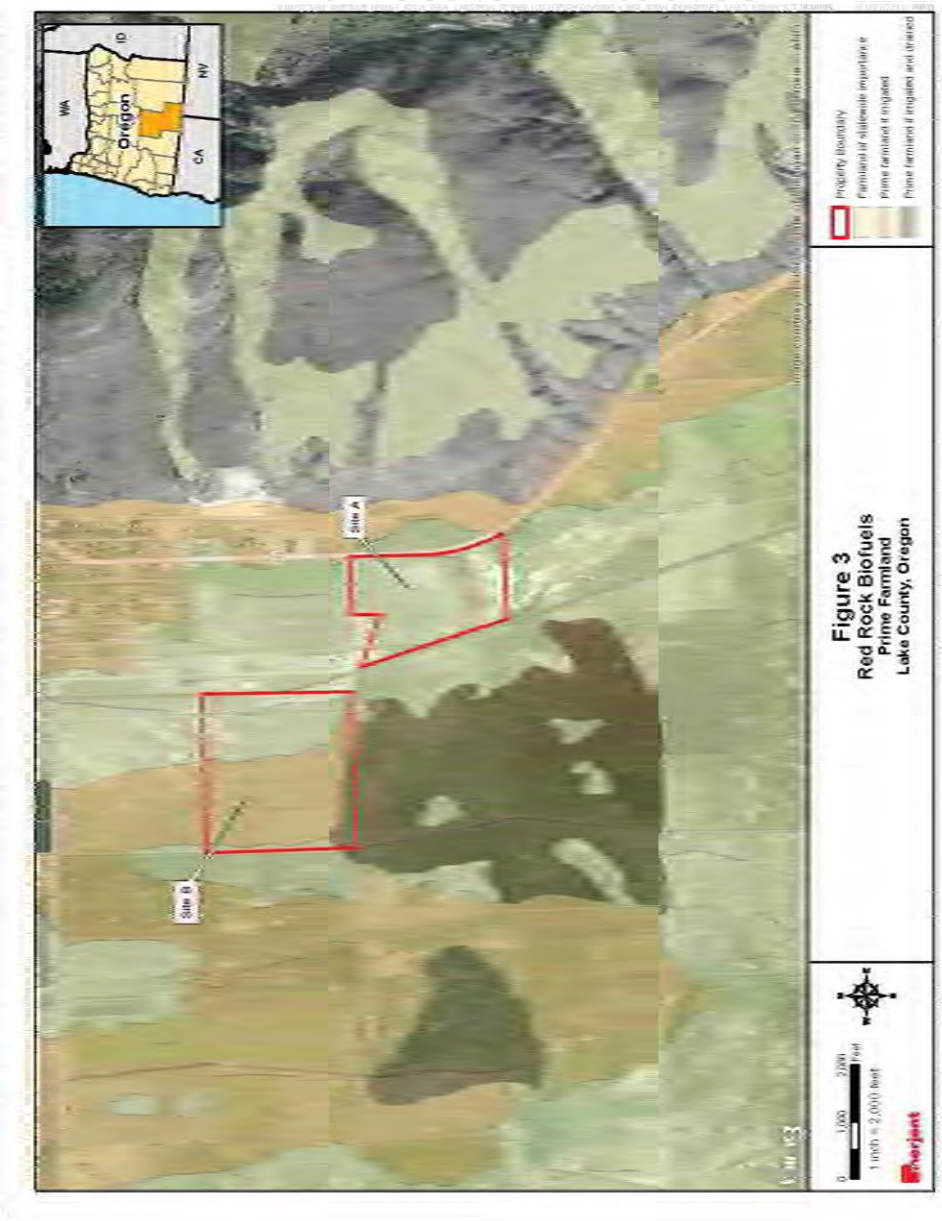
$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

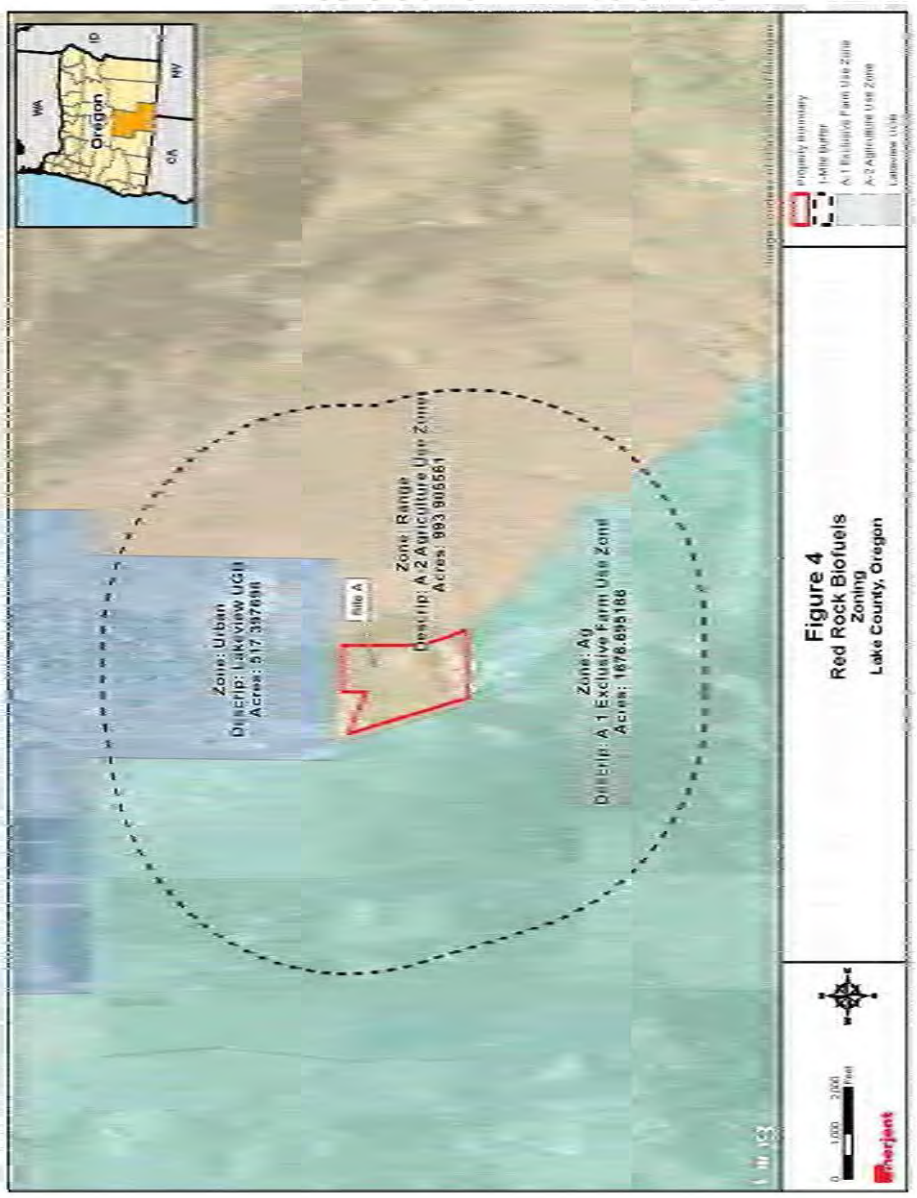
For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

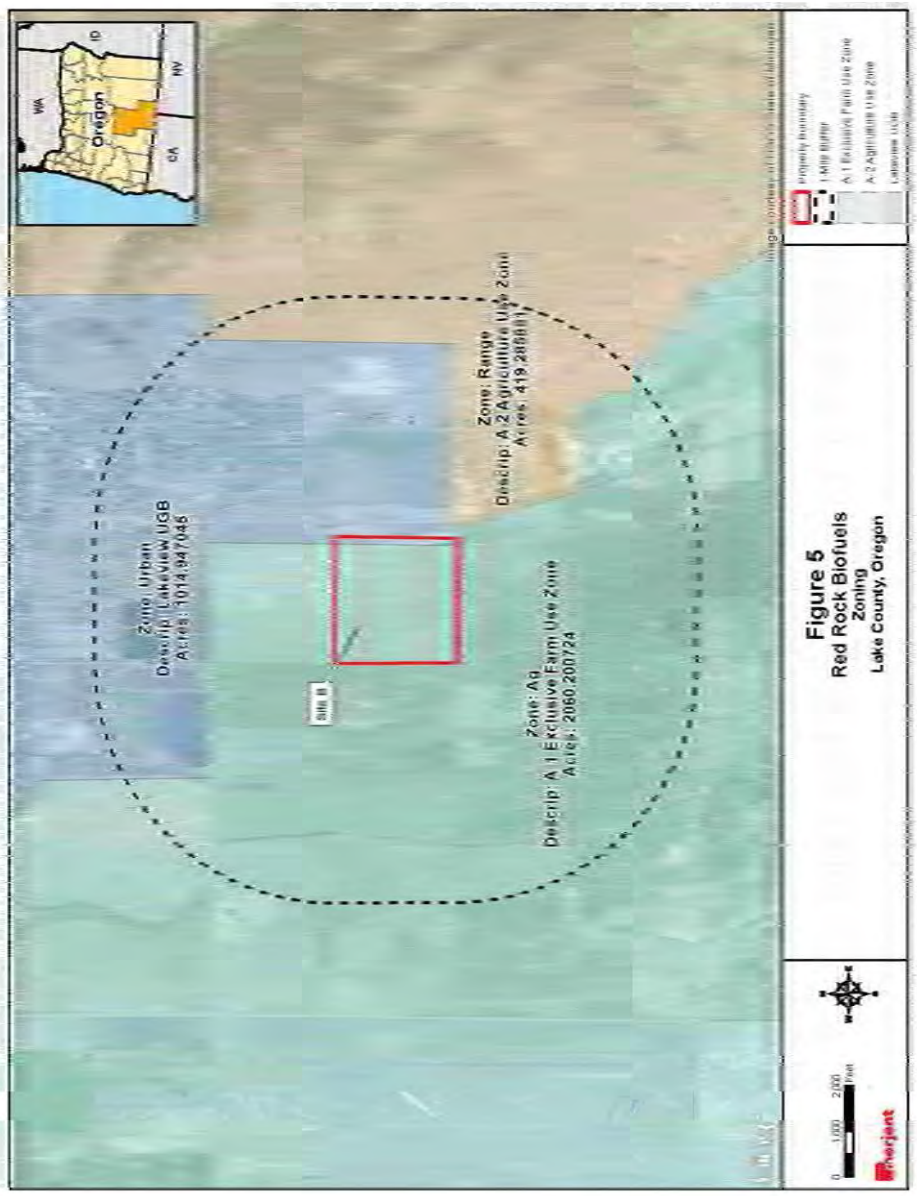
NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.


WA
ID
Oregon
NV
CA
Site A
Site B
Property Boundary
Figure 1
Red Rock Biofuels
Site Boundary
Lake County, Oregon
0
1,000
2,000 Feet
1 inch = 2,000 feet
Aerojet


Figure 2
Red Rock Biofuels
Soils Map
Lake County, Oregon
Property Boundary
SSURGO Soils
Soils in Project Area
Soil Description
125A
Lakeview silty clay loam, 0 to 2 percent slopes
152A
Malin silty clay loam, 0 to 1 percent slopes
192A
Ozamis silty clay loam, 0 to 1 percent slopes
252A
Thuncegreg fine sandy loam, 0 to 1 percent slopes
238
Drews loam, 0 to 5 percent slopes
98A
Goose Lake silt loam, sodic, 0 to 1 percent slopes
Site A
Site B
Oregon
WA
ID
NV
CA
1 inch = 2,000 feet
Merjent


Figure 3
Red Rock Biofuels
Prime Farmland
Lake County, Oregon
Property Boundary
Farmland of statewide importance
Prime farmland if irrigated
Prime farmland if irrigated and drained
Site A
Site B
Oregon
WA
ID
NV
CA
1 inch = 2,000 feet
Pinnacle


Figure 4
Red Rock Biofuels
Zoning
Lake County, Oregon
Property Boundary
1-Mile buffer
A-1 Exclusive Farm Use Zone
A-2 Agriculture Use Zone
Lakeview UGB
Zone: Urban
Descrip: Lakeview UGB
Acres: 517.397698
Site A
Zone: Range
Descrip: A-2 Agriculture Use Zone
Acres: 993.905561
Zone: Ag
Descrip: A-1 Exclusive Farm Use Zone
Acres: 1878.695188
Oregon
WA
ID
NV
CA
0
1,000
2,000
Feet
Merjent


Figure 5
Red Rock Biofuels
Zoning
Lake County, Oregon
Site B
Zone: Urban
Descrip: Lakeview UGB
Acres: 1014.947045
Zone: Range
Descrip: A-2 Agriculture Use Zone
Acres: 419.288811
Zone: Ag
Descrip: A-1 Exclusive Farm Use Zone
Acres: 2060.200724
Property Boundary
1 Mile Buffer
A-1 Exclusive Farm Use Zone
A-2 Agriculture Use Zone
Lakeview UGB
Oregon
WA
ID
NV
CA
Vicinity Map
Miles
Feet
Horizont

EA Letters / Correspondence

Federal Emergency Management Agency

Washington, D.C. 20472

August 1, 2016

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 15-10-1142P

The Honorable Dan Shoun
2015 Commissioner, Lake County
513 Center Street
Lakeview, OR 97630

Community Name: Lake County, OR
Community No.: 410115
FIRM Panel Affected: 4101152005B,
4101152010B,
4101152015B,
4101152020B

116

Dear Mr. Shoun:

In a Letter of Map Revision (LOMR) dated December 18, 2015, you were notified of proposed flood hazard determinations affecting the Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for the Unincorporated Areas of Lake County, Oregon. These determinations were for North Goose Lake Basin - from approximately 400 feet downstream of Stock Drive Road to approximately 11,000 feet downstream of Stock Drive Road. The 90-day appeal period that was initiated on January 6, 2016, when the Department of Homeland Security's Federal Emergency Management Agency (FEMA) published a notice of proposed Flood Hazard Determinations in *The Lake County Examiner* has elapsed.

FEMA received no valid requests for changes to the modified flood hazard information. Therefore, the modified flood hazard information for your community that became effective on May 5, 2016, remains valid and revises the FIRM and FIS report that were in effect prior to that date.

The modifications are pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. The community number(s) and suffix code(s) are unaffected by this revision. The community number and appropriate suffix code as shown above will be used by the National Flood Insurance Program (NFIP) for all flood insurance policies and renewals issued for your community.

FEMA has developed criteria for floodplain management as required under the above-mentioned Acts of 1968 and 1973. To continue participation in the NFIP, your community must use the modified flood hazard information to carry out the floodplain management regulations for the NFIP. The modified flood hazard information will also be used to calculate the appropriate flood insurance premium rates for all new buildings and their contents and for the second layer of insurance on existing buildings and their contents.

2

If you have any questions regarding the necessary floodplain management measures for your community or the NFIP in general, please contact the Mitigation Division Director, FEMA Region X, in Bothel, Washington, either by telephone at (425) 487-4600, or in writing at Federal Regional Center, 130 - 228th Street, Southwest, Bothell, WA 98021.

If you have any questions regarding the LOMR, the proposed flood hazard determinations, or mapping issues in general, please call the FEMA Map Information eXchange, toll free, at (877) 336-2627 (877-FEMA MAP).

Sincerely,

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

cc: Mr. Darwin Johnson
Planning Director, Lake County

Ms. Christine Shirley, CFM
Department of Land Conservation & Development

Mr. Steve Lucker
Floodplain and Natural Hazards Mapping Specialist
Department of Land Conservation & Development

Mr. Darryl Anderson, P.E., P.L.S.
Anderson Engineering and Surveying, Inc.

Mr. Jim Moore
Red Rock Biofuels, LLC

Subject: FW: Red rock
Date: Thursday, November 12, 2015 at 10:33:24 AM Pacific Standard Time
From: Darryl Anderson
To: Jim Moore, Mary Dinh

Last info on the floe elevation s for this round

Darryl Anderson PE PLS
Anderson Engineering
and Surveying Inc. 541-
947-4407 Of.

From: Keesling, Patrick [mailto:Patrick.Keesling@stantec.com]
Sent: Thursday, November 12, 2015 9:28 AM
To: Ryan Conn
Cc: Darryl Anderson; Greg Sharp
Subject: RE: Red rock

Ryan,

The file looks to good to me, I'll pass this on to mapping so that they can create the revised maps. I'll put a rush on this one, and I should have draft revised maps for your review in the near future. Once I get the ok from you on those, I will put the case in for final review. Let me know if you need anything in the meantime.

Thank you,

Patrick
Keesling,
EIT
Engineeri
ng Project
Specialist
STARR
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com

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Ü Please consider the environment before printing this email.

From: Ryan Conn [mailto:ryanc@andersonengineering.com]
Sent: Thursday, November 12, 2015 12:09 PM
To: Keesling, Patrick
Cc: Darryl Anderson; Greg Sharp
Subject: RE: Red rock

Patrick,

Attached is a CAD file showing the revised boundary for the flood area. The drawing is in 1983 State Plane Coordinates, Oregon South, in U.S. Survey Feet. If there is any problem opening the file, let me know.
Thanks.

Ryan Conn Technician
Anderson Engineering and Surveying, Inc.
P.O. Box 28 17681 Hwy. 395
Lakeview, Or. 97630

From: Darryl Anderson
Sent: Monday, November 09, 2015 4:02 PM
To: Ryan Conn <ryanc@andersonengineering.com>; Greg Sharp <gregs@andersonengineering.com>
Subject: Fwd: Red rock

Sent from my Verizon Wireless 4G LTE smartphone

-------- Original message --------
From: "Keesling, Patrick" <Patrick.Keesling@stantec.com> Date: 11/09/2015 1:37 PM (GMT-08:00)
To: Darryl Anderson <darryla@andersonengineering.com> Subject: RE: Red rock

Darryl,

We got some feedback from our FEMA folks regarding your case. They provided one comment that needs to be addressed before I can wrap this case up. The modelling is fine and I can accept the HEC- RAS models as final at this point. I'm ok with the BFE revisions and the shifting of Cross Section E on the map. The only thing I need to see is an actual floodplain width revision at your new Cross Section E. We are ok with keeping D and F mapped as they are on the effective maps and using them as your tie-in points. Cross Section E is now based on updated and more reliable data, because of this, FEMA would like to see some correlation between the map and model at that new Cross Section E despite the discrepancies at the other cross sections (FYI, the tolerance between map/model topwidth is 10%). As far as the width transitions between D/E and E/F, I will leave that up to your engineering judgement and I won't be too picky about it as long as it looks reasonable. You could potentially end up removing your client's property from the floodplain entirely.

Once this item is addressed, I can finalize this case. After I receive the revised maps, I will send them off to our mapping analyst to create the revised map attachments. If possible, I would prefer an electronic version (GIS or AutoCAD) of the maps as that makes the process considerably easier for him. I will get that process expedited when I pass the maps off to him. In the meantime, I am going to go ahead and create the final documents and revised profile so we can keep things moving and wrap things up quickly. Please let me

know if you have any questions or if you need anything additional from me.

Regards,

Patrick Keesling, EIT
Engineering Project
Specialist STARR
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com

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From: Keesling, Patrick
Sent: Friday, October 30, 2015 1:38 PM
To: 'Darryl Anderson'
Subject: RE: Red rock

Darryl,

I'm checking in for a quick status report. I ended up touching base with Ryan and obtaining the models and all of the maps, so we're squared away there. The models look ok to me and I think we can proceed with revising the effective BFE's as shown without changing the effective floodplain delineations.

I do not have any concerns on my end, but given the discrepancies between the map and model topwidths, I want to run this by our internal FEMA contacts to ensure that they concur these revisions can be made with the revised model. I will touch base with you as soon as we hear back from them. I do not anticipate any resistance from their end, and either way we are close to a final product at this point. You should hear from back from me early next week regarding where we stand. Please let me know if you have any questions or need anything else in the meantime.

Have a good weekend,

Patrick Keesling, EIT
Engineering Project Specialist STARR
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com

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From: Darryl Anderson [mailto:darryla@andersonengineering.com]
Sent: Tuesday, October 27, 2015 4:32 PM
To: Keesling, Patrick
Cc: Barb Thompson; Jim Moore (jmoore@redrockbio.com); Mary Dinh (maryd@redrockbio.com); Greg Sharp
Subject: Red rock

HI Patrick
Ryan forwarded you the revised maps and model information. Basically we saved two feet from the original. Let me know if you need anything else

Darryl Anderson PE PLS
Anderson Engineering
and Surveying Inc. 541-
947-4407 Of.

Friday, November 13, 2015 at 8:47:36 AM Pacific Standard Time

Subject: Fwd: LOMR Case No. 15-10-0366P Additional Data Follow Up
Date: Friday, July 31, 2015 at 4:51:30 PM Pacific Daylight Time
From: Jim Moore
To: Jeff Manternach, Terry Kulesa, Mary Dinh

It seems that we are close to getting the flood plain change approved. Jim

Jim Moore
Director of Engineering
IR1 Group LLC / Red Rock Biofuels

jmoore@ir1group.com

Begin forwarded message:

> **From:** Darryl Anderson <darryla@andersonengineering.com>
> **Date:** July 31, 2015 at 3:19:07 PM MDT
> **To:** "Jim Moore {jmoore@ir1group.com)" <jmoore@ir1group.com>
> **Cc:** Barb Thompson <barbt@andersonengineering.com>
> **Subject: FW: LOMR Case No. 15-10-0366P Additional Data Follow Up**
>
> The latest

Darryl Anderson PE PLS
Anderson Engineering and Surveying Inc.
541-947-4407 Of.

From: Greg Sharp
Sent: Friday, July 31, 2015 1:41 PM
To: Darryl Anderson
Cc: Barb Thompson; Carmen Tague
Subject: FW: LOMR Case No. 15-10-0366P Additional Data Follow Up

Redrock update:

I followed up this morning with Patrick Keesling, the Engineering Project Specialist with Stantec reviewing the Redrock Base Flood information. I provided him with Background information on the site, what is proposed, and our methodology for making the determination for the flood plain elevations. Mr. Keesling was in agreement with our final conclusions on the project. They are now in the process of finishing up the review and it appears that they have all the information they need and are ready to make a final determination on case No. 15-10-0366P soon.

Thank You, Greg Sharp

Anderson Engineering & Surveying, Inc.
P.O. Box 28 17681 HWY. 395
Voice {541) 947-4407

From: Greg Sharp
Sent: Wednesday, July 29, 2015 2:25 PM
To: 'Keesling, Patrick'
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

You should be able to catch me on my cell Thursday or Friday.

Thank You,

Greg Sharp
Anderson Engineering & Surveying, Inc.
P.O. Box 28 17681 HWY. 395
Voice {541) 947-4407

From: Keesling, Patrick [mailto:Patrick.Keesling@stantec.com]
Sent: Wednesday, July 29, 2015 12:33 PM
To: Greg Sharp
Cc: Barb Thompson; Darryl Anderson; Carmen Tague; Ryan Conn
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

Greg,

Thanks for checking in. I apologize for the delay, I was actually hoping to touch base with you briefly before I took this case further. Nothing pressing, I just wanted

to be sure that I'm understanding everything fully. Would you be available for a brief call sometime this week? I'm tied up for the remainder of today, but I am available all day Thursday and Friday from 9-5 Eastern Standard Time. Let me know if you have a preferred date and time and we can take it from there.

Regards,

Patrick Keesling,
EIT Engineering
Project Specialist
Stantec
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com

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From: Greg Sharp [mailto:gregs@andersonengineering.com]
Sent: Wednesday, July 29, 2015 3:01 PM
To: Keesling, Patrick
Cc: Barb Thompson; Darryl Anderson; Carmen Tague; Ryan Conn
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

Patrick,

The project's owner has asked us to check in and see how the process of modifying the base floods to the FEMA Flood maps is coming along. We understand that this process could take up to 90 days and we are currently at 60 days and just wanted to check and make sure things are moving forward. Please let us know if you need any additional information to wrap things up.

Thank You,

Greg Sharp
Anderson Engineering & Surveying, Inc.
P.O. Box 28 17681 HWY. 395
Voice (541) 947-4407

From: Greg Sharp
Sent: Monday, May 18, 2015 9:24 AM
To: 'Keesling, Patrick'
Cc: Darryl Anderson; Ryan Conn; Carmen Tague; Barb Thompson
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

Patrick,

We have conducted the analysis to modify the Base Flood Elevations (BFEs) in the vicinity of said project site and have accounted for the full width of the effective floodplain onto the adjacent panel, 4101152015B as was requested to make the changes to the FEMA Flood maps. All pertinent information has been attached to the submitted zip file. The project's owner has asked to expedite the process if at all possible. Please let me know if you need any additional information to wrap things up.

Thank You,

Greg Sharp
Anderson Engineering & Surveying, Inc.
P.O. Box 28 17681 HWY. 395
Voice (541) 947-4407

From: Keesling, Patrick [mailto:Patrick.Keesling@stantec.com]
Sent: Wednesday, April 15, 2015 8:36 AM
To: Greg Sharp
Cc: Barb Thompson; Darryl Anderson; Carmen Tague; Ryan Conn
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

Greg,

We have informed the Clearninghouse and they will be able to apply the fee when you resubmit. As I said, when you reapply, make sure to reference the current case number. They may end up assigning a new case number, but either way they will be able to apply the fees at that time. Please feel free to contact me in the meantime with any questions.

Thank you,

Patrick Keesling, EIT
Engineering Project
Specialist Stantec
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com

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From: Greg Sharp [mailto:gregs@andersonengineering.com]
Sent: Tuesday, April 14, 2015 4:42 PM
To: Keesling, Patrick
Cc: Barb Thompson; Darryl Anderson; Carmen Tague; Ryan Conn
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

Patrick,

We have discussed the requirements that you outlined in Your April 8, 2015 email for LOMR case no. 15-10-0366P with our client. Our client would like us to move forward and include the additional scope of work as you have outline in no. 3 which will modify the base flood elevation in the vicinity of the project and will account for the full width of the effective floodplain onto the adjacent panel 4101152015B. Please have the clearinghouse hold onto the check and apply it to the resubmittal that we plan on pursuing as indicated in item 3 of your email.

Thank You,

Greg Sharp
Anderson Engineering & Surveying, Inc.
P.O. Box 28 17681 HWY. 395
Voice (541) 947-4407

From: Keesling, Patrick [mailto:Patrick.Keesling@stantec.com]
Sent: Wednesday, April 08, 2015 11:27 AM
To: Ryan Conn; Darryl Anderson
Cc: Barb Thompson; Carmen Tague; Greg Sharp
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

All,
I received the data yesterday afternoon and got a chance to review it and go through it with my team lead. Our determination is that this case should be suspended. I know that sounds bad in writing, but let me clarify what that means, our reason for doing so, and what will be required for any follow up.

1. I'll address the big question first - fees. I understand that a check for this case was submitted to the Clearinghouse. This check was not processed since we were awaiting data, and in light of the suspension, we will not process it. We can do one of two things with the check - the Clearinghouse can hold onto it and apply the fees with a resubmittal, or the check can be returned to the sender. Please advise as to which option is more preferable.

2. You did submit the items we requested, however, we have some issues with the analysis, which I was not able to identify until we received this data. If you truly wish to modify the Base Flood Elevations (BFEs) in the vicinity of your project site, that is fine, but the analysis will need to account for the full width of the effective floodplain onto the adjacent panel, 4101152015B. I realize this is well beyond your area of revision, but FEMA's policy is that if effective data is being revised to change the mapping, the revised cross sections need to account for the full width of the floodplain while incorporating any new data. Any revisions

cannot just end at the panel boundary. In summary, we need revised cross sections which show a tie-in between the effective data and the corrected topography within your project site across the entire floodplain width. We are ok with the model used as I stated previously.

3. If you choose to resubmit after accounting for the items mentioned above, you can do that any time you wish. There is no deadline associated with resubmittal for a suspended case. You should reference this case number and the fact that it was suspended when you reapply. The Clearinghouse should be able to restart the case with the same case number. If you choose to keep the check in their hands, they can apply the fees at that time.

I apologize that this is the course of action we have to take, please let me know if there is any information I overlooked or misunderstood. Also, please contact me with any follow up questions or concerns, and I would be more than happy to address them. Again, please let me know what you would prefer we do with the check and I will confirm when we have followed through with either action.

Thank you,

Patrick Keesling, EIT
Engineering Project
Specialist Stantec
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com

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From: Ryan Conn [mailto:ryanc@andersonengineering.com]
Sent: Tuesday, April 07, 2015 2:59 PM
To: Darryl Anderson; Keesling, Patrick
Cc: Barb Thompson; Carmen Tague; Greg Sharp
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

Attached are the digital SWMM model files, an annotated FIRM map of the modeled site showing the revised flood elevations, and the topographic map of the area showing the effective FIRM elevations and the corresponding corrected elevations. Below is the reasoning I was given for the SWMM model verses the HEC-2 modeling of the North Goose Lake Basin.

1) I didn't copy the north goose lake basin because the location of the project was not affected by the entire North Goose Lake Basin. it was only with-in the flood area of Thomas creek and its tributaries on the east side of airport rd.

2) again I didn't duplicate the north goose lake basin with hec-2 because of the reason above.

I only analyzed Thomas creek so I delineated those results into each other past the point of original intersection. which is downstream from the project site. (past the airport)

If you have any more questions, let us know.

From: Darryl Anderson
Sent: Monday, April 06, 2015 3:03 PM
To: Keesling, Patrick
Cc: Ryan Conn; Barb Thompson; Carmen Tague; Greg Sharp
Subject: RE: LOMR Case No. 15-10-0366P Additional Data Follow Up

Thanks Patrick

Will get you some information

Darryl Anderson PE PLS
Anderson Engineering and Surveying Inc.

From: Keesling, Patrick [mailto:Patrick.Keesling@stantec.com]
Sent: Monday, April 06, 2015 2:30 PM
To: Darryl Anderson
Subject: FW: LOMR Case No. 15-10-0366P Additional Data Follow Up

Mr. Anderson:

I am forwarding this email to you again regarding the Additional Data I received a few weeks ago for your case, 15-10-0366P. Tomorrow, April 7th, will be the last day of the 90 day additional data period. If we do not receive the items outlined in this email, then the case will be suspended and a new submittal will be required if you choose to reapply. Again, the data can be sent directly to me via email and as long as I receive it by the end of day tomorrow, it should be ok and we can proceed from there. Please feel free to contact me if you have any questions or if you would like to discuss this case further.

Thank you,

Patrick Keesling, EIT
Engineering Project
Specialist Stantec
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com



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From: Keesling, Patrick
Sent: Wednesday, March 11, 2015 5:30 PM
To: 'darryla@andersonengineering.com'
Subject: LOMR Case No. 15-10-0366P Additional Data Follow Up

Mr. Anderson:

Hello, we received both the additional data and the fees requested for your case this week, and I have had the chance to review the additional data you submitted. I am requesting further data and clarification on some of what was submitted. I have lumped these items into a few broad categories based on the items requested in the Additional Data letter (attached for reference):

1. Hydrologic and hydraulic models – Since no formal hydrologic study was performed initially and the calculated flow is very general, we are ok with the submittal of a SWMM hydrologic model, however, we will require the digital files as well. If you like, you can send them directly to me via email, they do not have to go through the Clearinghouse. As far as the hydraulic models go, SWMM is an acceptable unsteady hydraulic model, we will require the digital files for this model also. However, the Flood Insurance Study indicates that a HEC-2 analysis was performed to create the effective data for North Goose Lake Basin. We will require justification as to why this methodology was not used.

2. Duplicate effective and corrected models – As stated above, there should be an effective HEC-2 model which was used for North Goose Lake Basin. If this model is not being utilized, we will require justification as to why. It looks like you did create a SWMM model which simulates effective conditions and a 100-year model which represents corrected conditions for the topography that you mapped, which is what we need. Once we have the digital data to perform a true review, it should be easier to make a comparison between duplicate effective and corrected conditions. Note that although you submitted a 500-year model, it is not actually required since only the 100-year flood was analyzed in the effective study.

3. Annotated FIRM - It is currently unclear how exactly you are trying to delineate the revised floodplain. We still require an Annotated FIRM which shows the revised floodplain boundaries on the effective FIRM. You submitted an 8.5x11 version of the FIRM identifying the project location in your original December submittal. This would be an ideal document to utilize, we basically just need a version of that with your proposed revisions.

4. Work Map - Since no actual work is being performed, I am treating the "Topographic Survey" you submitted as a Work Map. I need it to be modified to contain the items outlined in the Additional Data letter, particularly the effective and revised floodplain boundaries and how they tie in to one another.

As I mentioned with the Annotated FIRM, it is not clear how the floodplain is being revised. I think the required items outlined in the letter should be pretty straightforward.

Until we receive the data outlined in this email, the 90 day clock for additional data will continue on your end. Again, any and/or all of the data I am requesting can be sent directly to me. I am about to leave the office today, but I will be available tomorrow and at any point afterwards to discuss this further and answer any questions, please feel free to contact me at any time.

Thank you,

Patrick Keesling, EIT
Engineering Project
Specialist Stantec
6110 Frost Place Laurel MD 20707-2927
Phone: (301) 982-2852
patrick.keesling@stantec.com

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Subject: Wetland Mitigation Options call summary

Date: Wednesday, March 11, 2015 at 3:05:42 PM Pacific Daylight Time

From: Naomi Christenson

To: maryd@ir1group.com, jeffm@ir1group.com, tkulesa@ir1group.com

CC: Cheryl Davis, Billy VonSee, Andrea Rabe

Good afternoon,

A brief summary of the high points is provided below from our brief call this morning. The bottom line is that it went well and the agencies feel comfortable reviewing a plan that outlines the mitigation option RRB is proposing.

- Andrea described the mitigation plan RRB is proposing and explained it would be considered "on-site creation"
- Both the COE and DSL want to ensure the water quality of the stormwater is addressed in detail in the mitigation plan
- DSL has some concern about the hydrology being "self-sustaining" as described in the DSL Manual, and that the wetland must remain even after the facility is no longer in operation. Andrea explained that due to the topography and location of the mitigation site on the property this can be obtained. DSL seemed to come around to this idea as long as it is sufficiently described in the plan and that all items required by DSL Manual are addressed.
- We confirmed that the COE will issue 2 permits (NWP 12 and 14) and DSL will issue one.

Andrea is planning to begin preparing the mitigation plan since she received RRB approval and we now have agency buy-in as well. Please let me know if you have any questions!

Thank you, Naomi

merjent

Naomi Christenson

TractorWorks Building 612.746.3660 main
800 Washington Avenue N. 612.746.1616 direct
Suite 315
Minneapolis, MN 55401 612.746.3679 fax

www.merjent.com nchristenson@merjent.com

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Subject: 2/11/15 RRB Permitting Discussion Summary

Date: Wednesday, February 11, 2015 at 4:21:58 PM Pacific Standard Time

From: HARRINGTON Bethany
To: maryd@ir1group.com, Naomi Christenson

Hi Naomi and Mary,
In an effort to get up to speed with this project, I wrote up a brief summary of our discussion today based on the agenda items and wanted to make sure I captured the points correctly. Please feel free to add anything you think I may have missed.

1. *Permitting strategy/plan*
   - Corps will issue two permits and DSL will issue one.

2. *Combined application for facility and pipeline*
   - There will be one Joint Permit Application for the facility and pipeline.

3. *Project schedule update*
   - *RRB* construction on the main site will begin March 2015. Construction in areas with wetland impacts will begin March 2016

4. *Brieffteld review update - COEIDSL*
   - DSL asked the reason why the recent delineation concurrence did not match the RRB preferred site layout figure 1. Reason being there were several delineations beginning in 2012 that covered the entire property boundary. The recent concurrence was for the northernmost area of the site that had not been delineated previously.

5. *Compensatory Mitigation Plan strategy*
   - RRB would like to enhance the wetland on the southern portion of the property.

6. *Enhancement of the wetlands within the southern portion of the property*
   - DSL mentioned the specific criteria that would need to be met to accept an enhancement compensatory mitigation proposal (pages 8-14 and 8-15 of the DSL Removal Fill Guide). Grazing and compaction do not result in significant hydrologic degradation. DSL stressed that our preference is a net functional gain through restoration or creation and if CWM is not available on-site, opportunities off-site may need to be reviewed. The Corps stressed that any locations that are part of the CWM need to have Section 106 compliance.

7. *Field functional assessment - schedule*
   - Rabe Consulting has most of the information to complete the functional assessment. A rough draft of a CWM plan will be sent to the agencies when the functional assessment is completed.

8. *Conceptual plan acceptable for application completeness*

- DSL stressed the importance of having a solid plan for permit issuance. There is a modification process in place but it can be time consuming if the modification needs to go back out to public review.

Removal-Fill Guide: http://www.oregon.gov/dsl/PERMITS/docs/Removal_Fill_Guide_May_2013.pdf

Thank you for your time,
Bethany

Bethany Harrington
Aquatic Resource
Coordinator
Oregon
Department of
State Lands
1850 Miller Island Road I Klamath Falls, OR 97603

bethany.harrington@state.or.us
www.oregonstatelands.us

EA Notes

RED ROCK BIOFUELS

CALL NOTES

Date:

February 10, 2015

To:

Mary Dinh, Red Rock Biofuels

From:

Marissa Fierro, Pit River Tribe Environmental Coordinator, 530-335-1118

Subject:

Rail Safety Concerns and Request for Draft EA and project contacts

Ms. Marissa Fierro called Red Rock Biofuels ("RRB") to inform RRB of the Pit River Tribes' concerns regarding RRB's Lakeview project. Ms. Fierro's call was received by Mary Dinh.

- Ms. Fierro introduced herself as the Pit River Tribe Environmental Coordinator and provided her contact information:
  - Phone: 530-335-1118
  - Email: marissa.fierro@pitrivertribe.org
- Ms. Fierro said the Pit River Tribe is very concerned about fuel cars derailing. Lake Railway runs through their land.
- Ms. Fierro has not received any notice letters that were sent regarding RRB project. Ms. Dinh noted to Ms. Fierro that the Air Force (the lead agency for the project) had provided project notification and cultural resources assessment information to Pit River Tribe and addressed all correspondence to Morning Star Galee.
- Ms. Fierro requested the following information:
  - EA and upcoming public meetings
  - Contact info for the Air Force
  - Contact info for Red Rock environmental contractor
  - Copies of AF project notification letters
- Ms. Dinh indicated that Ms. Fierro's requests would be sent on to the Air Force for response.
- Ms. Dinh provided the Air Force with the call summary and Ms. Fierro's requests for information.

AINW Letters

Oregon
Kate Brown, Governor

Department of Transportation
Region 4 Headquarters
63055 N Hwy 97, Bldg K
Bend, OR 97701
Phone: (541) 388-6180
Fax: (541) 388-6231

June 12, 2015

Mary Dinh
Project Manager
Red Rock Biofuels
736 Whalers Way
Bldg. G, Suite 100
Fort Collins, CO 80525

Re: US 395 – Traffic Volume Information

Dear Mary,

This letter will summarize traffic volume information in the area where will Kadmas Road (access to the proposed Red Rock Biofuels project) connect with US 395 south of Lakeview.

In 2013 the Average Annual Daily Traffic (AADT) was 1,700 vehicles per day at milepoint 144.22, just south of 10th Street South. The AADT was 1,300 vehicles per day at milepoint 144.4, just south of 12 Street South. (Source: ODOT's 2013 Transportation Volume Tables)

Our Automatic Traffic Recorders (ATR) stations at milepoint 120.83 (south of Valley Falls) and milepoint 157.43 (north of New Pine Creek) indicate that traffic actually declined over the last ten years. (Source: ODOT's 2013 Summary of Trend at Automatic Traffic Recorder Stations)

ODOT's Future Volume Tables indicate that traffic volumes may grow approximately 200 vehicles per day in the next 20 years.

The data above can be accessed at the web pages below.

http://www.oregon.gov/ODOT/TD/TP/Pages/Data.aspx

http://www.oregon.gov/ODOT/TD/TDATA/pages/tsm/tvt.aspx

The capacity of a typical two lane rural highway in relatively flat terrain is approximately 1,500 to 1,700 passenger car equivalents (pce) per hour per lane so the highway is significantly under capacity. The trip generation data you supplied indicated that the approximately 40 trucks per day would enter and exit the site as well as approximately 25 employees. These volumes would be unlikely to have a significant effect on highway operations.

To fully understand the intersection operations at US 395 and Kadrmas Road a detailed count would be required and the site's trip generation would be applied to an evaluation of the intersection Level of Service, Volume to Capacity Ration, Queuing and any other additional performance measures for the intersection.

Please let me know if you have any additional questions. I can be reached at 541-388-6189 or joel.r.mccarroll@odot.state.or.us.

Sincerely,

Joel McCarroll, P.E., P.T.O.E
ODOT Region 4
Traffic Manager

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 0 9 2014

MEMORANDUM FOR: MS. DIANNE TEEMAN
BURNS-PAIUTE TRIBE
CULTURAL RESOURCES PROGRAM DIRECTOR
100 PASIGO ROAD
BURNS OR 97720

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: AINW Phase I Cultural Survey Report for Red Rock Biofuels Project in Lake County, OR

1. On or about 17 November 2014, Red Rock Biofuels LLC forwarded your office a copy of the Archaeological Investigations Northwest, Inc. (AINW) report entitled "ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS FOR THE RED ROCK BIOFUELS PROJECT, LAKE COUNTY, OREGON." dated 3 November 2014. The report detailed historical and archaeological findings related to a proposed site for a biorefinery facility planned for construction on approximately 95 acres adjacent to the town of Lakeview in Lake County, OR, and an approximately three-mile long corridor in the rail right-of-way for construction of the associated natural gas pipeline. The work for the report was performed under Archeological Permits 1868 and 1869.

2. The Defense Production Act (DPA) Title III and Air Force Research Laboratory (AFRL) personnel recently completed our review of the report. Regarding Historic Resources, we concur with the recommendation in the report that there will be "no adverse affect" to the 11 identified Historic Resources. Regarding Archeological Resources, we concur with the recommendation that all the archeological isolates and site 35LK4695 are "not eligible" for the National Register of Historic Places, but that the remainder of the archeological sites (35LK3991, 35LK3992, 35LK3994, 35LK4694, 35LK4696, and 35LK4697) is either "eligible" or "unevaluated." Red Rock is currently developing additional archaeological evaluation work and a mitigation plan for the sites that cannot be avoided or protected in place.

3. The DPA Title III Office, as the lead federal agency, has taken the lead in drafting a Memorandum of Agreement (MOA) that will define the plan for a determination of "no affect" or "no adverse effect" for these sites. In the coming weeks, we will be sending you a draft of the MOA, Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan for your review.

4. Please direct any questions or comments to myself, AFRL's Title III Project Manager, at (937) 904-4374, Eastern Time Zone, or james.neely@us.af.mil, and our contractor support, Dr. Joanne Morello, at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink, and he can be reached at (937) 255-3480, or at warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 0 9 2014

MEMORANDUM FOR: MS. SALLY BIRD
CONFEDERATED TRIBES OF WARM SPRINGS
CULTURAL RESOURCES PROGRAM MANAGER
1233 VETERANS STREET
WARM SPRINGS OR 97761

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: AINW Phase I Cultural Survey Report for Red Rock Biofuels Project in Lake County, OR

1. On or about 17 November 2014, Red Rock Biofuels LLC forwarded your office a copy of the Archaeological Investigations Northwest, Inc. (AINW) report entitled "ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS FOR THE RED ROCK BIOFUELS PROJECT, LAKE COUNTY, OREGON," dated 3 November 2014. The report detailed historical and archaeological findings related to a proposed site for a biorefinery facility planned for construction on approximately 95 acres adjacent to the town of Lakeview in Lake County, OR, and an approximately three-mile long corridor in the rail right-of-way for construction of the associated natural gas pipeline. The work for the report was performed under Archeological Permits 1868 and 1869.

2. The Defense Production Act (DPA) Title III and Air Force Research Laboratory (AFRL) personnel recently completed our review of the report. Regarding Historic Resources, we concur with the recommendation in the report that there will be "no adverse affect" to the 11 identified Historic Resources. Regarding Archeological Resources, we concur with the recommendation that all the archeological isolates and site 35LK4695 are "not eligible" for the National Register of Historic Places, but that the remainder of the archeological sites (35LK3991, 35LK3992, 35LK3994, 35LK4694, 35LK4696, and 35LK4697) is either "eligible" or "unevaluated." Red Rock is currently developing additional archaeological evaluation work and a mitigation plan for the sites that cannot be avoided or protected in place.

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4. Please direct any questions or comments to myself, AFRL's Title III Project Manager, at (937) 904-4374, Eastern Time Zone, or james.neely@us.af.mil, and our contractor support, Dr. Joanne Morello, at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink, and he can be reached at (937) 255-3480, or at warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 0 9 2014

MEMORANDUM FOR: MR. KENNETH SAM
FORT BIDWELL INDIAN COMMUNITY OF THE FORT
BIDWELL RESERVATION OF CALIFORNIA
PO BOX 129
FORT BIDWELL CA 96112

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: AINW Phase I Cultural Survey Report for Red Rock Biofuels Project in Lake County, OR

1. On or about 8 December 2014, Red Rock Biofuels LLC forwarded your office a copy of the Archaeological Investigations Northwest, Inc. (AINW) report entitled "ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS FOR THE RED ROCK BIOFUELS PROJECT, LAKE COUNTY, OREGON," dated 3 November 2014. The report detailed historical and archaeological findings related to a proposed site for a biorefinery facility planned for construction on approximately 95 acres adjacent to the town of Lakeview in Lake County, OR, and an approximately three-mile long corridor in the rail right-of-way for construction of the associated natural gas pipeline. The work for the report was performed under Archeological Permits 1868 and 1869.

2. The Defense Production Act (DPA) Title III and Air Force Research Laboratory (AFRL) personnel recently completed our review of the report. Regarding Historic Resources, we concur with the recommendation in the report that there will be "no adverse affect" to the 11 identified Historic Resources. Regarding Archeological Resources, we concur with the recommendation that all the archeological isolates and site 35LK4695 are "not eligible" for the National Register of Historic Places, but that the remainder of the archeological sites (35LK3991, 35LK3992, 35LK3994, 35LK4694, 35LK4696, and 35LK4697) is either "eligible" or "unevaluated." Red Rock is currently developing additional archaeological evaluation work and a mitigation plan for the sites that cannot be avoided or protected in place.

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4. Please direct any questions or comments to myself, AFRL's Title III Project Manager, at (937) 904-4374, Eastern Time Zone, or james.neely@us.af.mil, and our contractor support, Dr. Joanne Morello, at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink, and he can be reached at (937) 255-3480, or at warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 0 9 2014

MEMORANDUM FOR: MR. PERRY CHOCKTOOT, JR
DIRECTOR OF CULTURE AND HERITAGE DEPARTMENT
KLAMATH TRIBES
PO BOX 436
CHILOQUIN, OR 97624

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: AINW Phase I Cultural Survey Report for Red Rock Biofuels Project in Lake County, OR

1. On or about 17 November 2014, Red Rock Biofuels LLC forwarded your office a copy of the Archaeological Investigations Northwest, Inc. (AINW) report entitled "ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS FOR THE RED ROCK BIOFUELS PROJECT, LAKE COUNTY, OREGON," dated 3 November 2014. The report detailed historical and archaeological findings related to a proposed site for a biorefinery facility planned for construction on approximately 95 acres adjacent to the town of Lakeview in Lake County, OR, and an approximately three-mile long corridor in the rail right-of-way for construction of the associated natural gas pipeline. The work for the report was performed under Archeological Permits 1868 and 1869.

2. The Defense Production Act (DPA) Title III and Air Force Research Laboratory (AFRL) personnel recently completed our review of the report. Regarding Historic Resources, we concur with the recommendation in the report that there will be "no adverse affect" to the 11 identified Historic Resources. Regarding Archeological Resources, we concur with the recommendation that all the archeological isolates and site 35LK4695 are "not eligible" for the National Register of Historic Places, but that the remainder of the archeological sites (35LK3991, 35LK3992, 35LK3994, 35LK4694, 35LK4696, and 35LK4697) is either "eligible" or "unevaluated." Red Rock is currently developing additional archaeological evaluation work and a mitigation plan for the sites that cannot be avoided or protected in place.

3. The DPA Title III Office, as the lead federal agency, has taken the lead in drafting a Memorandum of Agreement (MOA) that will define the plan for a determination of "no affect" or "no adverse effect" for these sites. In the coming weeks, we will be sending you a draft of the MOA, Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan for your review.

4. Please direct any questions or comments to myself, AFRL's Title III Project Manager, at (937) 904-4374, Eastern Time Zone, or james.neely@us.af.mil, and our contractor support, Dr. Joanne Morello, at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink, and he can be reached at (937) 255-3480, or at warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

James A. Neely

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 0 8 2014

MEMORANDUM FOR: MR. DENNIS GRIFFIN
STATE ARCHAEOLOGIST
OREGON STATE HISTORIC PRESERVATION OFFICE
725 SUMMER STREET NE, SUITE C
SALEM OR 97301-1266

FROM: AFRL/RXME
2977 Hobson Way Rm 215
Wright-Patterson AFB OH 45433-7734

SUBJECT: SHPO Case No. 14-0042; AINW Phase I Cultural Survey Report for Red Rock Biofuels Project in Lake County, OR

1. On or about 17 November 2014, Red Rock Biofuels LLC forwarded your office a copy of the Archaeological Investigations Northwest, Inc. (AINW) report entitled "ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS FOR THE RED ROCK BIOFUELS PROJECT, LAKE COUNTY, OREGON," dated 3 November 2014. The report detailed historical and archaeological findings related to a proposed site for a biorefinery facility planned for construction on approximately 95 acres adjacent to the town of Lakeview in Lake County, OR and an approximately three-mile long corridor in the rail right-of-way for construction of the associated natural gas pipeline. The work for the report was performed under Archeological Permits 1868 and 1869.

2. The Defense Production Act (DPA) Title III and Air Force Research Laboratory (AFRL) personnel recently completed our review of the report. Regarding Historic Resources, we received a letter from your office dated 6 November 2014 stating that you concurred with the recommendation in the report that there will be 'no adverse affect' to the 11 identified Historic Resources. We also concur with this recommendation. Regarding Archeological Resources, Red Rock received a letter from your office dated 13 November 2014. We concur with the recommendation that all the archeological isolates and site 35LK4695 are not eligible for the National Register of Historic Places, but that the remainder of the archeological sites (35LK3991, 35LK3992, 35LK3994, 35LK4694, 35LK4696, and 35LK4697) are either "eligible" or "unevaluated". Red Rock is currently developing additional archeological evaluation work, per discussions with SHPO on 18 November 2014, and a mitigation plan for the sites that cannot be avoided or protected in place.

3. The DPA Title III Office, as the lead federal agency has taken the lead in drafting a Memorandum of Agreement (MOA) that will define the plan for a determination of 'no affect' or 'no adverse effect' for these sites. In the coming weeks, we will be sending you a draft of the MOA, Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan for your review.

4. Please direct any questions or comments to myself, AFRL's Title III Project Manager, at (937) 904-4374, Eastern Time Zone, or james.neely@us.af.mil, and our contractor support, Dr. Joanne Morello, at [redacted] joanne.morello@ngc.com. Our environmental affairs coordinator is Mr. Warren Assink, and he can be reached at (937) 255-3480, or at warren.assink@us.af.mil. Your continued support of this effort is greatly appreciated.

JAMES A. NEELY
Defense Production Act Title III Deputy Program Manager
Manufacturing & Industrial Technologies Division
Materials & Manufacturing Directorate

Oregon
John A. Kitzhaber, MD, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

November 13, 2014

Mr. Jeff Maternach
Red Rock Biofuels LLC
736 Whalers Way
Fort Collins, CO 80525

RE: SHPO Case No. 14-0042
Red Rock Biofuel Plant
CRS/Potentially unearthing significant cultural resources
Klamath Tribes/Red Rock Biofuels
40S 20E 3, 21, 22, 27, 34, Lakeview, Lake County

Dear Mr. Maternach:

Our office recently received your revised report for the project referenced above. We appreciate that the consultant has addressed many of the issues that were noted in my letter of 8-1-14, and this revised report is adequate for review. I have discussed the revised report with Dennis Griffin, and while our office is able to concur with the work completed to date, we feel there still remain some issues regarding site eligibility and effect to the archaeological sites that need to be clarified. It was good to see in the revised report the discussion of eligibility for all sites under criteria besides Criterion D. However, it should be noted that the results of on-going consultation with Native American groups may change the outcome of eligibility if there are associations with the sites in this project and historic events or persons associated with these groups that might qualify them for eligibility under Criterion A or B.

There appears to have been some misunderstanding regarding the eligibility of site 35LK4696. In my letter of 8-1-14 I noted that there were not shovel probes placed to the south and east to establish site boundaries and the site was currently still "unevaluated". In a subsequent phone conversation with the consultant on 8-6-14 our office was told that shovel probes had been placed to the east and south but that these had not been placed on the map sent with the original report. Based on this omission I agreed that we might agree the site was not eligible if the shovel probes had been placed to the south and east and we could see these shown on a revised map that would come with the new report. Upon receiving the revised report I see that shovel probes have been added to the map to the south and east, but that these probes are actually 40-60 meters away from the surface artifact scatter boundary (see attached copy of Figure 16). If these are considered the negative probes that define the site boundaries, than the site is now much larger than previously thought. Without additional subsurface testing we can not agree that this site would be "not eligible". Only one 50 by 50 cm quarter test unit was placed in the site to test for subsurface materials, and given that the full extent of the site is now approximately 100 meters long and 60 meters wide (approximately 6000 square meters), this is not an adequate sample to evaluate the site. The site remains "unevaluated" and should be avoided/protected in place or subjected to additional evaluative testing to determine if significant subsurface materials are present that would qualify the site for inclusion in the NRHP.

Regarding site 35LK3991, which has a prehistoric component not currently well documented (unevaluated), the consultant notes in the revised report that the original access corridor through the site was adequately tested to determine that no significant prehistoric archaeological materials were present in the area that would be adversely effected by the proposed project. In my letter of 8-1-14 I noted that only two quarter test units were placed in the corridor to test for subsurface archaeological materials. The corridor is approximately 25 meters wide and 170 meters long (4250 square meters), so only a very small part of the corridor has been sampled to date (see attached copy of Figure 3). Our office can not agree that sufficient

testing has been placed in this part of the site to determine that "no adverse effect" would occur to that part of the site within the corridor. The revised report noted that Red Rock Biofuels is now currently looking at utilizing the whole of site 35LK3991 for their plant and not just the corridor. The prehistoric component of this site should be considered as a whole "unevaluated" and avoided/protected in place or subjected to additional evaluative testing to determine if there are important subsurface materials present .

For the remaining sites that are recommended "eligible" or "unevaluated" (35LK3993, 35LK3994, 35LK4694, and 35LK4697) the boundaries are still somewhat arbitrary because testing to date has not been adequate to determine exact boundaries. Site boundaries currently don't reflect negative probes in all cases that are the actual boundaries as defined by Oregon SHPO guidelines. A 30 meter buffer has been placed around the sites by the consultant based on the current boundaries, but this still does not reflect the actual boundaries defined by negative probes in all cases (see attached copy of Figure 23). At present most of the project area is covered by the overlapping boundaries of the 30 meter buffer zone placed around the current site boundaries. Additional testing would be needed to refine the actual site boundaries, site eligibility, and effect.

This office can concur that all the isolated finds (14/2176-1 to 14/2176-18) and site 35LK3695 are "not eligible" to the National Register of Historic Places, and no further archaeological work is needed in these areas. For the rest of the archaeological sites found in the project area (35LK 3991, 35LK3993, 35LK4694, 35LK4696, 35LK4697), they all remain "eligible" or "unevaluated". Within the project area, we can concur with "no historic properties affected" if the "eligible" and "unevaluated" sites are all avoided or protected in place. If any of these sites can not be avoided/protected in place than additional archaeological research will be needed to determine the effect of the proposed biofuels plant. Additional testing should be conducted within the site boundaries of any part of these sites that might be impacted by the proposed plant. Testing should be adequate to determine the presence/absence of significant buried cultural materials based on Oregon SHPO guidelines, and in consultation with Oregon SHPO. This testing would be used as a basis for determining eligibility if the sites are currently "unevaluated", or as a basis for determining the significance of buried materials if the sites are considered "eligible". If additional testing does not show the presence of significant sub-surface materials than these areas could be considered as not significant parts of the site and therefore a finding of "no adverse effect" could be made to these areas only. If significant sub-surface remains were encountered in testing (e.g. artifacts or features that might contribute important information to our understanding of the prehistory of the area) than there will be an "adverse effect" and it will be necessary to mitigate this effect through additional excavation and analysis. Separate excavation permits would be necessary for the testing phase and any data recovery required as a result of the testing. A Memorandum of Agreement (MOA) would be needed to address the proposed data recovery prior to excavations.

Our office would be glad to meet with you and the consultant to discuss the MOA or any other aspects of this project. If you have any questions feel free to contact me at your convenience.

Sincerely,

Ross Curtis

Ross Curtis
SHPO Archaeologist
(503) 986-0676
ross.curtis@oregon.gov

Red Rock Biofuels

December 8, 2014

Mr. Bernold Pollard
Chairman
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California
PO Box 129
Fort Bidwelll, CA 96112

Re: Red Rock Biofuels LLC
Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Mr. Pollard:

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce renewable jet, diesel, and naphtha fuels from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project ("Project"). The plant will annually refine approximately 400 short tons per day of feedstock on a dry basis to produce approximately 6.1 million gallons (MMgal) of jet fuel, 6.1 MMgal of diesel fuel, and 3.4 MMgal of naphtha fuel. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program.

The Project is funded in part through the Defense Production Act (DPA) Title III Program, which is managed by the Office of the Secretary of Defense (OSD) and executed by the Department of Defense (DoD) Executive Agent Program Office, a component of the Manufacturing Technology Division (AFRL/RXM) of the Materials and Manufacturing Directorate, Air Force Research Laboratory. An Environmental Assessment under the National Environmental Policy Act (NEPA) is being prepared for the Project to determine and assess potential natural and human environment impacts associated with developing a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE).

Enclosed is the Phase I archaeological and historical inventory report for the Project, issued November 3, 2014. The fieldwork was conducted by Archaeological Investigations Northwest, Inc., under Archaeological Permit Numbers 1868 and 1869. We respectfully request you to review and provide written comments in response to our findings and recommendations. The DoD is reviewing the Project concurrent with this submittal. If you would like to correspond directly with the DoD, please contact:

Red Rock Biofuels LLC
730 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Mr. James Neely
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4374

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock looks forward to receiving your response to this request.

Sincerely,
Red Rock Biofuels LLC

Jeff Manternach

Enclosures: Summary of Conference Call – Red Rock Biofuels Project, August 6, 2014
AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. James Neely, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

Red Rock Biofuels

November 10, 2014

Ms. Diane Teeman
Cultural Resources Program Director & Archaeologist
Burns Paiute Tribe
100 Pasigo
Burns, OR 97720

Re: Red Rock Biofuels LLC
Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Ms. Teeman:

Red Rock Biofuels LLC ("Red Rock") and Archaeological Investigations Northwest, Inc., ("AINW") have revised the Phase 1 archaeological and historical inventory report for Red Rock Biofuels' project in Lakeview, OR per Oregon SHPO's request. Oregon SHPO's revision requests were discussed on a conference call with Red Rock and AINW on August 6, 2014 and documented in the attached summary of the call. Enclosed is the revised report. The fieldwork was conducted by AINW under Archaeological Permit Numbers 1868 and 1869.

We respectfully request you review and provide written comments to our findings and recommendations. Oregon SHPO is providing an expedited review of the revised report concurrent with this submittal. The Air Force Research Lab ("AFRL") is also reviewing the revised report concurrent with this submittal. If you would like to correspond directly with the AFRL, please contact:

Mr. James Neely
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4374

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock looks forward to receiving your response to this request.

Respectfully Yours,

Jeff Manternach
Red Rock Biofuels LLC

Red Rock Biofuels LLC
738 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Enclosures: Summary of Conference Call – Red Rock Biofuels Project, August 6, 2014
AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. James Neely, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

Red Rock Biofuels

November 10, 2014

Ms. Karen Quigley
Executive Director
Commission on Indian Services
900 Court St. NE, Room 167
Salem, Oregon 97301

Re: Red Rock Biofuels LLC
Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Ms. Quigley:

Red Rock Biofuels LLC ("Red Rock") and Archaeological Investigations Northwest, Inc., ("AINW") have revised the Phase 1 archaeological and historical inventory report for Red Rock Biofuels' project in Lakeview, OR per Oregon SHPO's request. Oregon SHPO's revision requests were discussed on a conference call with Red Rock and AINW on August 6, 2014 and documented in the attached summary of the call. Enclosed is the revised report. The fieldwork was conducted by AINW under Archaeological Permit Numbers 1868 and 1869.

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Mr. James Neely
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4374

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock looks forward to receiving your response to this request.

Respectfully Yours,

Jeff Manternach
Red Rock Biofuels LLC

Red Rock Biofuels LLC
738 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Enclosures: Summary of Conference Call – Red Rock Biofuels Project, August 6, 2014
AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. James Neely, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

Red Rock Biofuels

November 10, 2014

Ms. Sally Bird
Confederated Tribes of Warm Springs
1233 Veterans St.
Warm Springs, OR 97761

Re: Red Rock Biofuels LLC
Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Ms. Bird:

Red Rock Biofuels LLC ("Red Rock") and Archaeological Investigations Northwest, Inc., ("AINW") have revised the Phase 1 archaeological and historical inventory report for Red Rock Biofuels' project in Lakeview, OR per Oregon SHPO's request. Oregon SHPO's revision requests were discussed on a conference call with Red Rock and AINW on August 6, 2014 and documented in the attached summary of the call. Enclosed is the revised report. The fieldwork was conducted by AINW under Archaeological Permit Numbers 1868 and 1869.

We respectfully request you review and provide written comments to our findings and recommendations. Oregon SHPO is providing an expedited review of the revised report concurrent with this submittal. The Air Force Research Lab ("AFRL") is also reviewing the revised report concurrent with this submittal. If you would like to correspond directly with the AFRL, please contact:

Mr. James Neely
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4374

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock looks forward to receiving your response to this request.

Respectfully Yours,

Jeff Manternach
Red Rock Biofuels LLC

Red Rock Biofuels LLC
738 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Enclosures: Summary of Conference Call – Red Rock Biofuels Project, August 6, 2014
AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. James Neely, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

Red Rock Biofuels

November 10, 2014

Mr. Perry Chocktoot, Jr.
Director of Culture and Heritage Committee
Klamath Tribes
501 Chiloquin Blvd
Chiloquin, OR 97624

Re: Red Rock Biofuels LLC
Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Mr. Chocktoot:

Red Rock Biofuels LLC ("Red Rock") and Archaeological Investigations Northwest, Inc., ("AINW") have revised the Phase 1 archaeological and historical inventory report for Red Rock Biofuels' project in Lakeview, OR per Oregon SHPO's request. Oregon SHPO's revision requests were discussed on a conference call with Red Rock and AINW on August 6, 2014 and documented in the attached summary of the call. Enclosed is the revised report. The fieldwork was conducted by AINW under Archaeological Permit Numbers 1868 and 1869.

We respectfully request you review and provide written comments to our findings and recommendations. Oregon SHPO is providing an expedited review of the revised report concurrent with this submittal. The Air Force Research Lab ("AFRL") is also reviewing the revised report concurrent with this submittal. If you would like to correspond directly with the AFRL, please contact:

Mr. James Neely
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4374

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock looks forward to receiving your response to this request.

Respectfully Yours,

Jeff Manternach
Red Rock Biofuels LLC

Red Rock Biofuels LLC
738 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Enclosures: Summary of Conference Call – Red Rock Biofuels Project, August 6, 2014
AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. James Neely, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

Red Rock Biofuels

November 4, 2014

Mr. Ross Curtis
SHPO Archaeologist
Oregon State Historic Preservation Office
725 Summer St. NE, Ste C
Salem, OR 97301-1266

Re: Red Rock Biofuels LLC
Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for SHPO Comment
SHPO Case No. 13-1886

Dear Mr. Curtis:

In response to your revision requests discussed during the conference call on August 6, 2014 and documented in the attached summary of the conference call, Red Rock Biofuels LLC ("Red Rock") is submitting the Revised Phase I archaeological and historical inventory report (assigned SHPO # 26543) for our biofuels project in Lakeview, OR. Enclosed is a hard copy of the report with an electronic copy on CD. The fieldwork was conducted by Archaeological Investigations Northwest, Inc., ("AINW") under Archaeological Permit Numbers 1868 and 1869.

We respectfully request Oregon SHPO to review and provide written concurrence with AINW's findings and recommendations. Additionally, we respectfully request an expedited review of the revised report, as you offered on the conference call.

The Air Fore Research Lab ("AFRL") is reviewing the revised report concurrent with this submittal. If you would like to correspond directly with the AFRL, please contact:

Mr. James Neely
Government Project Manager
AFRL/RXME
james.neely@us.af.mil
(937) 904-4390

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

Red Rock Biofuels LLC
750 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock appreciates your continued efforts to support energy projects in Oregon and looks forward to receiving your response to this request.

Respectfully Yours,

Jeff Manternach
CFO
Red Rock Biofuels LLC

Enclosures: Summary of Conference Call – Red Rock Biofuels Project, August 6, 2014
State of Oregon Cultural Resources Survey Cover Sheet
AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. James Neely, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE



August 26, 14

Mr. Ross Curtis
SHPO Archaeologist
State Historic Preservation Office
725 Summer St. NE, Ste C
Salem, OR 97301-1266

RE: SHPO Case No. 14-0042
Red Rock Biofuels Plant

Dear Mr. Curtis:

Thank you for providing a list of topics and action items that were discussed during our conference call on August 6, 2014. We have reviewed the minutes from that call and wanted to clarify a few points. Please see the attached document that includes tracked changes.

For the most part, we would like to clarify the prescribed course of action for each site mentioned in the OR SHPO comment letter dated August 1, 2014, including sites 35LK3991, 35LK3992, 35LK3994, 35LK4694 (14/2176-5), 35LK4676 (14/2176-11), 35LK4697 (14/2176-16), and Isolate 14/2176-14. The following sites or ISOs were not addressed during the meeting: 14/2176-1, 14/2176-3, 14/2176-8, 14/2176-10, 14/2176-17, 14/2176-18, and ISO-01; however, Red Rock Biofuels LLC ("RRB") assumes SHPO agrees with AINW's recommendations for these resources.

We would also like to take this opportunity to begin preliminary discussions on proposed treatments for the eligible archaeological sites, as well as those "unevaluated" sites that would be treated as eligible for the purposes of this Project and the development of a MOA. RRB would like some assurances that all parties agree on the level of effort involved in complying with Section 106 and mitigating any potential adverse effects to the resources prior to moving forward with the revised report and development of the treatment plans. In addition, RRB would like to discuss the inclusion of the entirety of 35LK3991, not just the proposed access road, into the Project. Since the site has been determined eligible, RRB would assess the Project's adverse effect to the entire site under an approved MOA.

We would like to meet with you in the coming weeks to discuss each site, and the preliminary work plans for the data recoveries. We will be in touch once the revised report is submitted to schedule this meeting.

Sincerely,

Jeff Manternach
CFO
Red Rock Biofuels

Red Rock Biofuels LLC
730 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Oregon
John A. Kitzhaber, MD, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

August 1, 2014

Mr. John Crabill
Department of the Air Force
Air Force Research Laboratory
, OH 454333

RE: SHPO Case No. 14-0042
Red Rock Biofuel Plant
CRS/Potentially unearthing significant cultural resources
Klamath Tribes/Red Rock Biofuels
40S 20E 3, 21, 22, 27, 34, Lakeview, Lake County

Dear Mr. Crabill:

We have reviewed the materials submitted on the project referenced above, and we concur with the determination that the following properties are eligible for listing in the National Register of Historic Places, and that these will not be adversely affected by the proposed project:

1. Lake Railway (HR-1), Lakeview Vcty, Lake County
2. Deadman Creek (HR-2), Lakeview Vcty, Lake County
3. East Branch Thomas Creek (HR-3), Lakeview Vcty, Lake County
4. Duke-Green House (HR-5), 17070 Hwy 395, Lakeview, Lake County
5. Farmstead (HR-6), 15682 Hwy 395, Lakeview, Lake County
6. Crane Creek (HR-7), Lakeview Vcty, Lake County
7. House (HR-8), 1125 S. G Street, Lakeview, Lake County
8. House (HR-9), 943 S. F Street, Lakeview, Lake County
9. Commercial Building (HR-10), 930 S. F Street, Lakeview, Lake County
10. Outbuilding (HR-11), 1138 S. E Street, Lakeview, Lake County

One remaining resource, the ca. 1920 Craftsman farmstead at 17082 Hwy 395, Lakeview, Lake County (HR-4) is identified as eligible under Criterion C, with which our office (based on the submitted information) concurs. While the report does indicate that the setting has changed to some degree, a review of viewsheds near the resource indicates that previous developments have been low-rise, and at least 750 meters away, with minimal impact to the historic setting of the resource. The proposed facility is proposed to be approximately 250 meters away, and will be the dominant element in the viewshed, once built. Due to the proximity of the proposed development and the resulting heightened possibility of an adverse, indirect effect, we believe that the eligibility analysis for this resource should be expanded to include considerations of Criteria A (significant historical association) and B (significant person). Both of these criteria place more emphasis on integrity of setting than does Criterion C (architecture), which relies heavily on integrity associated with the physical characteristic of the resource, and less so on integrity of setting. Because the overriding aspect of integrity that reflects the greatest possibility of an adverse effect is setting, those criteria that rely most heavily on that aspect should be addressed.

We look forward to receiving the requested additional analysis regarding this resource. If you have any questions regarding the contents of this letter, please feel free to contact me.

Sincerely,

Jason Allen, M.A., Historic Preservation Specialist
(503) 986-0579; jason.allen@oregon.gov

Oregon
John A. Kitzhaber, MD, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

August 1, 2014

Mr. Jeff Manternach
Red Rock Biofuels
Portland, OR

RE: SHPO Case No. 14-0042
Red Rock Biofuel Plant
CRS/Potentially unearthing significant cultural resources
Klamath Tribes/Red Rock Biofuels
40S 20E 3, 21, 22, 27, 34, Lakeview, Lake County

Dear Mr. Manternach:

Our office recently received a report about the project referenced above. We have reviewed the report (assigned SHPO # 26543) based on the research of your consultant AINW, and find that we are not able to concur on the report findings that the project will have no effect on any known archaeological sites. There are a number of issues with the methodology used to test/evaluate sites and the approach utilized to assess effect. Additional archaeological research is needed with this project in order to substantiate the consultants findings.

In general, there was not sufficient testing conducted at the seven sites found in the project APE to assess eligibility and to determine effect. Only very limited testing, consisting of 1-3, 50 x 50 cm test units was placed in each of the identified sites. This testing was sufficient in some cases for showing the presence/absence of sub-surface materials in parts of each site, but not sufficient to characterize the site as a whole. Large expanses of site areas remain uninvestigated, and there may be significant sub-surface deposits or features in these areas. Testing according to Oregon SHPO guidelines should occur every 20 meters within a site area as a basis for characterizing the archaeological deposits.

The consultant chose to use the very limited information gathered in their testing to evaluate site eligibility, and then assess effect based on their eligibility recommendations and limited data. Further, the consultant split the sites into areas that "contribute to the eligibility" (or not) of the sites based on the very limited information. The absence of significant materials on the surface of a site is not a sufficient basis to determine that this part of the site "does not contribute to the eligibility of the site". This approach towards site eligibility is not supported by Oregon SHPO, the Department of the Interior (NPS Criteria), or Advisory Council on Historic Preservation. This consultant has been informed by Oregon SHPO on numerous occassions that it is not a legitmate way of viewing site eligibility. The whole site is eligible or not, and then effects to the site can be assessed once the specific impacts of a project are known, and the sub-surface content of the site is generally understood in those areas being impacted. It is only possible to determine what areas of a site with a buried component contain important remains after placing enough test units.

Oregon
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Specifically, the following problems were noted. At site 35LK3991, the prehistoric component of this site is currently "unevaluated", but the consultant is recommending that the portion of the site they tested is "not eligible". The 160 x 20 meter area proposed for parcel access that crosses the site area was sampled with three 50 by 50 cm units. This is not sufficient to test the area. NRHP eligibility is based on sites and not parts of sites.

At site 35LK3992 (eligible), shovel probes expanded the boundaries of the precontact lithic scatter, so the horizontal extent of the site is now known. Three, 50 x 50 cm test units placed in the site help characterize the content of a very small part of the 49,105 square meter site area, but are not sufficient to say that only the " northestern part of the site (with a surface concentration of artifacts) contributes to the eligibility of the site".

At site 35LK3994 (eligible) the precontact lithic scatter boundaries were expanded through shovel probes and found to join with another similar site to the south (35LK3995-eligible). Sub-surface content was sampled with two, 50 x 50 cm units. This testing was sufficient for only characterizing the archaeological deposits in a small part of the 37,200 square meter site area. This limited testing is not sufficient to support the consultants conclusion that "only the surface artifacts concentrations found in northest part of the site and southwest corner (Site 35LK3995 area) contribute to the eligibility of the site".

At site 14/2176-5 (35LK4694) testing consisting of one 50 x 50 cm test unit placed in the eastern side of the precontact lithic scatter was used as a basis for recommending the site eligible. The consultant then recommends that "only the eastern half of the site contributes to the eligibility of the site". The limited testing is insufficient to conclude this, since the western half has not been adequately tested.

At site 14/2176-11 (35LK4696) the site boundaries of this precontact lithic scatter were established through shovel probes placed to the north and west, but no shovel probes were placed to the south and east. Based on low artifact counts (35 surface artifacts, and 18 artifacts found in one 50 x 50 cm test unit) the site was recommended as not eligible. It is not possible to establish the full extent of the site and assess eligibility without the site boundaries being established to the south and east. The site remains unevaluated.

At site 14/2176-16 (35LK4697) the site boundaries of this precontact lithic scatter were established through shovel tests, and then the site recommended as not eligible based on one 50 x 50 cm test unit and the presence of only about 30 artifacts total. One 50 x 50 cm unit placed within a site of 14798 square meters is not sufficient to characterize the sub-surface content. The site remains unevaluated.

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At isolate 14/2176-14, four precontact lithic artifacts were found on the surface so shovel test were placed around the isolate to determine if additional buried materials were present. Two more buried lithic artifacts were found in a probe to the north, but no additional probes were placed farther to the north of this to establish the isolates northern boundary (as required in Oregon SHPO guidelines). Because the northern boundary is currently not known, there remains a possibility that more artifacts are buried in this area, and the isolate could then meet the criteria for site designation. The isolate remains unevaluated.

Archaeological sites found in this project area were assessed for National Register eligibility based only on Criterion D, and their potential that they could provide additional important information on the prehistory of the area. While this is one criterion that can be used for assessing eligibility, evluations must consider and justify eligibility under all four criteria. For example, the sites may be able to provide information to address broad historic patterns under Criterion A. There has been a large amount of archaeological survey and some testing/data recovery done in Lake County with many lithic scatters and habitation sites identified. Perhaps, it might be possible to look at broad patterns of exchange, lithic technology, or resource use through time in the region. The Klamath people aknowledge that the area in which these sites are found is known to be a very significant area they have lived in for thousands of years. Attempting to relate archaeological sites to existing Native American groups like the Klamath, could make the investigation of these sites even more meaningful.

To summarize, significantly more archaeological testing is needed in six of the seven sites and one of the isolated finds in the project area before eligibility and project effect can be determined. The only way this project could have the proposed "no effect" is if all sites (and isolated find 14/2176-14) were avoided and protected. This seems unlikely, since most of the current biofuels plant site surface is covered by archaeological sites.

Under state law (ORS 358.905-955 & ORS 97.740) archaeological sites, objects and human remains are protected on both public and private land in Oregon. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. This letter covers archaeological resources only, and above-ground resources will be addressed in a separate leter from compliance specialist Jason Allen. If you have any questions regarding the information required to complete our review of this project, how to address any future discovery, or thus letter, feel free to contact our office.

Sincerely,

Ross Curtis

Ross Curtis
SHPO Archaeologist
(503) 986-0671
ross.curtis@oregon.gov

Kari Krause

From: Mary Dinh <maryd@ir1group.com>
Sent: Thursday, July 10, 2014 1:39 PM
To: CRABILL, JOHN A DR 03 USAF AFMC AFRL/RXME; Neely, James A Civ USAF AFMC AFRL/RXME; Warren Assink; Kari Krause; Cheryl Davis; Jeff Mantemach
Subject: New points of contact for Burns Paiute Tribe
Attachments: image001.jpg; image002.jpg

All,

Please note Karen Quigley's email below regarding new points of contact for the Burns Paiute Tribe.

Thanks,
Mary

Mary Dinh

Project Manager

(O) 970-223-6766

[redacted]

maryd@ir1group.com

IR1 Group LLC · www.ir1group.com

Red Rock Biofuels LLC: redrockbio.com

716 Whalers Way

Bldg G, Suite 100

Ft Collins, CO 80525

From: Quigley Karen M <karen.m.quigley@state.or.us>
Date: Thursday, July 10, 2014 at 12:02 PM
To: Mary Dinh <maryd@ir1group.com>
Subject: RE: Red Rock Biofuels project, Lake county

Mary,

Thank you for your reply.
You may have heard that Agnes Castronuevo's last day with the Burns Paiute Tribes is this Friday.
She is going to Seattle to work with a private consulting firm.

1

Agnes indicates that there are no plans at this time to fill her position and advises that the Tribal Chair, Charlotte Roderique, rod049@yahoo.com
and General Manager, Michelle Bradach, bradachms@burnspaiute-nsn.gov
should be your contacts for now.
Thanks very much.
Karen

Karen Quigley, Executive Director
karen.m.quigley@state.or.us
Legislative Commission on Indian Services

From: Mary Dinh [mailto:maryd@ir1group.com]
Sent: Tuesday, July 08, 2014 4:14 PM
To: Quigley Karen M
Cc: Jeff Manternach; agnes.castronuevo@burnspaiute-nsn.gov; sbird@wstribes.org; perry.chocktoot@klamathtribes.com; Terry Ozbun; Kari Krause; April Holdren Brehm
Subject: Re: Red Rock Biofuels project, Lake county

Dear Ms. Quigley,

Copies of the Phase I archaeological and historical inventory report for the project associated with AP 1868 and 1869 were sent to the following tribes: Burns Paiute, Warm Springs, and Klamath Tribes. The cover letters accompanying the report transmission are attached.

During the Phase 1 archaeological survey, Mr. Casey Miller of the Klamath Tribes and Ms. Stephanie O'Brien, Burns Paiute Archaeologist, were members of the survey crew. We will maintain communication with the appropriate tribes as our project progresses and will continue to accommodate tribal on-site monitors during ground disturbing activities as appropriate.

Thank you for your review of our project report. Please let me know if you have any further questions or comments.

Thank you,
Mary

Mary Dinh

Project Manager

(O) 970-225-6756

[redacted]

maryd@ir1group.com

IRL Group LLC: www.ir1group.com

Red Rock Biofuels LLC: redrockbio.com

756 Whalers Way

Bldg G, Suite 100

Ft Collins, CO 80525

From: Jeff Manternach <jeffm@ir1group.com>
Date: Monday, July 7, 2014 at 6:27 PM
To: Mary Dinh <maryd@ir1group.com>
Subject: Fwd: Red Rock Biofuels project, Lake county

Hi Mary - please respond for RRB. Thanks-
Jeff

****
Jeff Manternach
IR1 Group LLC
jeffm@ir1group.com
www.ir1group.com
O: 503-636-1130
[redacted]
****

Begin forwarded message:

> **From:** Quigley Karen M <karen.m.quigley@state.or.us>
> **Date:** July 7, 2014 at 4:07:12 PM PDT
> **To:** Jeff Manternach <jeffm@ir1group.com>
> **Cc:** "Agnes (agnes.castronuevo@burnspaiute-nsn.gov)" <agnes.castronuevo@burnspaiute-nsn.gov>, "Sally Bird (sbird@wstribes.org)" <sbird@wstribes.org>, Perry Chocktoot <perry.chocktoot@klamathtribes.com>
> **Subject: Red Rock Biofuels project, Lake county**
>
> Dear Jeff Manternach, Red Rock Biofuels LLC,
>
> Thank you for your letter dated June 25, 2014 requesting review and comment regarding the Phase I archaeological and historical inventory report for the project associated with AP 1868 and 1869 (permit applications from February 2014)—construction of a biofuels plant and associated natural gas pipeline in Lake County.
> I do note that the report of findings identified four new archaeological sites and that the boundaries of 3 previous recorded sites were expanded with a recommendation of avoidance and protection to 3 sites to achieve a "no historic properties affected" designation or if that is not feasible, a call for mitigation as a way to request a recommendation of "No historic properties adversely affected".
>
> Could you please confirm that the appropriate Indian Tribes: Burns Paiute, Warm Springs and Klamath have also received a copy of this letter and report & request for review and comment. I do note that as part of both the AP 1868 and 1869 permit, one Tribe indicated they would like to have on-site monitors during any ground disturbing activity including archaeological investigation. I am hopeful this has occurred and will occur throughout the project.
>
> Thanks very much,

3

Karen Quigley
Karen Quigley, Executive Director
karen.m.quigley@state.or.us
Legislative Commission on Indian Services



June 25, 2014

Mr. Roger Roper
Deputy State Historic Preservation Officer
Oregon SHPO, Review and Compliance
725 Summer St NE, Suite C
Salem, OR 97301

Re: Red Rock Biofuels LLC
Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for SHPO Comment
SHPO Case No. 13-1886

Dear Mr. Roper:

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce jet, diesel, and naphtha fuels from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project ("Project"). The plant will annually refine approximately 400 short tons per day of feedstock on a dry basis to produce approximately 6.1 million gallons (MMgal) of jet fuel, 6.1 MMgal of diesel fuel, and 3.4 MMgal of naphtha fuel. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program.

The Project is funded in part through the Defense Production Act (DPA) Title III Program, which is managed by the Office of the Secretary of Defense (OSD) and executed by the Department of Defense (DoD) Executive Agent Program Office, a component of the Manufacturing Technology Division (AFRL/RXM) of the Materials and Manufacturing Directorate, Air Force Research Laboratory. An Environmental Assessment under the National Environmental Policy Act (NEPA) is being prepared for the Project to determine and assess potential natural and human environment impacts associated with developing a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE).

Enclosed is the Phase I archaeological and historical inventory report for the Project. The fieldwork was conducted by Archaeological Investigations Northwest, Inc., under Archaeological Permit Numbers 1868 and 1869. We respectfully request Oregon SHPO to review and provide written concurrence with our findings and recommendations. The DoD is reviewing the Project concurrent with this submittal. If you would like to correspond directly with the DoD, please contact:

Red Rock Biofuels LLC
720 Whalers Way, Building O, Suite 100
Fort Collins, CO 80525

Mr. John Crabill
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4390

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock appreciates your continued efforts to support energy projects in Oregon and looks forward to receiving your response to this request.

Sincerely,
Red Rock Biofuels LLC

Jeff Manternach

Enclosures: State of Oregon Cultural Resources Survey Cover Sheet
AINW's Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. John Crabill, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

References:

Connolly, Thomas.
1998 *Archeological Survey of the Lakeside SCL (MP 144.05) – Cogswell Creek (MP152.00) Sections, US Highway 395, Lake County.* Oregon State Historic Preservation Office, Salem.

Dobschuetz, Kris, Rachelle Robinson, Rebecca Halbmaier, and Sandy McDaniel II
2010 *A Cultural Resource Survey for the Ruby Pipeline Project: Oregon Segment- Lake and Klamath Counties, Oregon. Addendum I Klamath, Lakeview, Langell, and Merrill Yards; Marlin Lateral.* Prepared by Environmental Planning Group (EPG) for for Ruby Pipeline, LLC.

Werner, Roger H.
2011 *Cultural Resource Survey of A Proposed Direct Use Geothermal Project and a Geothermal Power Generation Project Within and Adjacent to Lakeview, Lake County, Oregon.* Prepared for RMT, Inc., San Mateo, California

Young, D. Craig
2012 *Revised Boundary Testing Plan, Research Design, and Inadvertent Discovery Plan for Archaeological Sites 35LK3156, 35LK3991 and 35LK3995 in Support of the Town of Lakeview's Proposed Geothermal Heating System South Project Area, Lakeview, Oregon.* Prepared for Far Western Anthropological Research Group, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE



June 25, 2014

Ms. Agnes F. Castronuevo, M.A., RPA
Cultural Resources Program Director & Archaeologist
Burns Paiute Tribe
100 Pasigo
Burns, OR 97720

Re: Red Rock Biofuels LLC
Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Ms. Castronuevo:

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce jet, diesel, and naphtha fuels from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project ("Project"). The plant will annually refine approximately 400 short tons per day of feedstock on a dry basis to produce approximately 6.1 million gallons (MMgal) of jet fuel, 6.1 MMgal of diesel fuel, and 3.4 MMgal of naphtha fuel. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program.

The Project is funded in part through the Defense Production Act (DPA) Title III Program, which is managed by the Office of the Secretary of Defense (OSD) and executed by the Department of Defense (DoD) Executive Agent Program Office, a component of the Manufacturing Technology Division (AFRL/RXM) of the Materials and Manufacturing Directorate, Air Force Research Laboratory. An Environmental Assessment under the National Environmental Policy Act (NEPA) is being prepared for the Project to determine and assess potential natural and human environment impacts associated with developing a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE).

Enclosed is the Phase I archaeological and historical inventory report for the Project. The fieldwork was conducted by Archaeological Investigations Northwest, Inc., under Archaeological Permit Numbers 1868 and 1869. We respectfully request Burns Paiute Tribe to review and provide written comments in response to our findings and recommendations. The DoD is reviewing the Project concurrent with this submittal. If you would like to correspond directly with the DoD, please contact:

Red Rock Biofuels LLC
735 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Mr. John Crabill
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4390

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock appreciates your continued efforts to support energy projects in Oregon and looks forward to receiving your response to this request.

Sincerely,
Red Rock Biofuels LLC

Jeff Manternach

Enclosures: AINW's Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. John Crabill, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

References:

Connolly, Thomas.
1998 *Archeological Survey of the Lakeside SCL (MP 144.05) – Cogswell Creek (MP152.00) Sections, US Highway 395, Lake County.* Oregon State Historic Preservation Office, Salem.

Dobschuetz, Kris, Rachelle Robinson, Rebecca Halbmaier, and Sandy McDaniel II
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CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE



June 25, 2014

Ms. Karen Quigley
Executive Director
Commission on Indian Services
900 Court St. NE, Room 167
Salem, Oregon 97301

Re: Red Rock Biofuels LLC
Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Ms. Quigley:

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce jet, diesel, and naphtha fuels from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project ("Project"). The plant will annually refine approximately 400 short tons per day of feedstock on a dry basis to produce approximately 6.1 million gallons (MMgal) of jet fuel, 6.1 MMgal of diesel fuel, and 3.4 MMgal of naphtha fuel. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program.

The Project is funded in part through the Defense Production Act (DPA) Title III Program, which is managed by the Office of the Secretary of Defense (OSD) and executed by the Department of Defense (DoD) Executive Agent Program Office, a component of the Manufacturing Technology Division (AFRL/RXM) of the Materials and Manufacturing Directorate, Air Force Research Laboratory. An Environmental Assessment under the National Environmental Policy Act (NEPA) is being prepared for the Project to determine and assess potential natural and human environment impacts associated with developing a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE).

Enclosed is the Phase I archaeological and historical inventory report for the Project. The fieldwork was conducted by Archaeological Investigations Northwest, Inc., under Archaeological Permit Numbers 1868 and 1869. We respectfully request the Commission on Indian Services to review and provide written comments in response to our findings and recommendations. The DoD is reviewing the Project concurrent with this submittal. If you would like to correspond directly with the DoD, please contact:

Red Rock Biofuels LLC
735 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Mr. John Crabill
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4390

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
AFRL/RXSC
warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock appreciates your continued efforts to support energy projects in Oregon and looks forward to receiving your response to this request.

Sincerely,
Red Rock Biofuels LLC

Jeff Manternach

Enclosures: AINW's Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. John Crabill, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

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June 25, 2014

Ms. Sally Bird
Confederated Tribes of Warm Springs
1233 Veterans St.
Warm Springs, OR 97761

Re: Red Rock Biofuels LLC
Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Ms. Bird,

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce jet, diesel, and naphtha fuels from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project ("Project"). The plant will annually refine approximately 400 short tons per day of feedstock on a dry basis to produce approximately 6.1 million gallons (MMgal) of jet fuel, 6.1 MMgal of diesel fuel, and 3.4 MMgal of naphtha fuel. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program.

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Enclosed is the Phase I archaeological and historical inventory report for the Project. The fieldwork was conducted by Archaeological Investigations Northwest, Inc., under Archaeological Permit Numbers 1868 and 1869. We respectfully request Confederated Tribes of Warm Springs to review and provide written comments in response to our findings and recommendations. The DoD is reviewing the Project concurrent with this submittal. If you would like to correspond directly with the DoD, please contact:

Red Rock Biofuels LLC
730 Whalers Way, Building C, Suite 100
Fort Collins, CO 80525

Mr. John Crabill
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4390

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
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warren.assink@us.af.mil
(937) 255-3480

If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email. jeffm@ir1group.com). Red Rock appreciates your continued efforts to support energy projects in Oregon and looks forward to receiving your response to this request.

Sincerely,
Red Rock Biofuels LLC

Jeff Manternach

Enclosures: AINW's Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. John Crabill, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

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June 25, 2014

Mr. Perry Chocktoot, Jr.
Director of Culture and Heritage Department
Klamath Tribe
501 Chiloquin Blvd
Chiloquin, OR 97624

Re: Red Rock Biofuels LLC
Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon – Request for Review and Comment
Archaeological Permit Numbers 1868 and 1869

Dear Mr. Chocktoot:

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce jet, diesel, and naphtha fuels from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project ("Project"). The plant will annually refine approximately 400 short tons per day of feedstock on a dry basis to produce approximately 6.1 million gallons (MMgal) of jet fuel, 6.1 MMgal of diesel fuel, and 3.4 MMgal of naphtha fuel. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program.

The Project is funded in part through the Defense Production Act (DPA) Title III Program, which is managed by the Office of the Secretary of Defense (OSD) and executed by the Department of Defense (DoD) Executive Agent Program Office, a component of the Manufacturing Technology Division (AFRL/RXM) of the Materials and Manufacturing Directorate, Air Force Research Laboratory. An Environmental Assessment under the National Environmental Policy Act (NEPA) is being prepared for the Project to determine and assess potential natural and human environment impacts associated with developing a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE).

Enclosed is the Phase I archaeological and historical inventory report for the Project. The fieldwork was conducted by Archaeological Investigations Northwest, Inc., under Archaeological Permit Numbers 1868 and 1869. We respectfully request Klamath Tribe to review and provide written comments in response to our findings and recommendations. The DoD is reviewing the Project concurrent with this submittal. If you would like to correspond directly with the DoD, please contact:

Red Rock Biofuels LLC
720 Wheelers Way, Building C, Suite 100
Fort Collins, CO 80525

Mr. John Crabill
Government Project Manager
AFRL/RXME
john.crabill@us.af.mil
(937) 904-4390

Mr. Warren Assink
Coordinator for AFRL Environmental Assessment
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If you have questions regarding this project or require additional information, please contact me at 503-636-1130 (email: jeffm@ir1group.com). Red Rock appreciates your continued efforts to support energy projects in Oregon and looks forward to receiving your response to this request.

Sincerely,
Red Rock Biofuels LLC

Jeff Manternach

Enclosures: AINW's Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

cc: Mr. John Crabill, Government Program Manager
AFRL/RXME

Mr. Warren Assink, Coordinator for AFRL Environmental Assessment
AFRL/RXSC

Mr. Terry Ozbun, Senior Archaeologist and Lithic Technology Specialist
Archaeological Investigations Northwest, Inc.

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Archaeological Investigations Northwest, Inc.

3510 N.E. 122nd Ave. • Portland, Oregon 97230
Phone (503) 761-6605 • Fax (503) 761-6620

Vancouver Phone (360) 696-7473
E-mail: ainw@ainw.com
Web: www.ainw.com

MEMO

Date: May 23, 2014

To: Mary Dinh, Red Rock Biofuels LLC

From: Terry Ozbun

Re: Red Rock Biofuels Project, Lake County, Oregon
AINW Tribal Coordination

I made a series of phone calls during the first full week of March, 2014, to notify affected Tribes of our plans to conduct archaeological fieldwork for the Red Rock Biofuels project under Oregon State Historic Preservation Office Archaeological Permits (AP-1868 and AP-1869). My intent was to inform the cultural resource representatives of the Tribes of our fieldwork schedule and to invite representatives to visit during the period of fieldwork.

I left a voice message for Perry Chocktoot, Culture & Heritage Director, of the Klamath Tribes and followed-up in-person when I saw him at the Northwest Anthropological Conference later that month. He was satisfied with the archaeological work, as reported to him by Klamath Tribal member, Casey Miller, who worked on the AINW field crew for the project.

I talked with Steve Jenevein of the Confederated Tribes of the Warm Springs Reservation of Oregon Cultural Resources Department. He did not have additional comments beyond his previous approval of our permit applications.

I also talked with Stephanie O'Brien, archaeologist for the Burns Paiute Tribe, who said she would pass the information to the Tribe's Cultural Resources Program Director, Agnes Castronuevo. Stephanie O'Brien also worked on the AINW field crew during the project and in a later phone call told me that she was satisfied with the archaeological work done for the project.

merjent

Telephone Log

Date:
January 24, 2014

To:
Perry Chocktoot

Company:
Klamath Tribe

Phone Number:
541 783 2219 x 178

From:
Kari Krause

Company:
Merjent, Inc.

Phone Number:
612-643-5248

Subject:
Red Rock Biofuels – Tribal concerns and recommendations within proposed project area

Ms. Krause returned a voice message received from Mr. Chocktoot concerning the Red Rock Biofuels Project. Mr. Chocktoot first requested confirmation of the correct email address for Jeff Mantemach as he had sent an email in response to Red Rock's letter of December 2, 2013 and the email was returned. The corrected email address was provided.

Mr. Chocktoot stated that the project area was located between two rock outcroppings that are considered the Klamath tribal homelands for the last 15,000 years. Big game used the natural pass between the outcrops and villages or hamlets were established here and on ledges along creeks to take advantage of local resources. As such, Red Rock should expect to identify significant cultural sites and the area has a high potential for burials as evidenced by several nearby sites; indeed the oldest human remains were discovered just north of the Project in Paisley, OR.

He recommended that Phase I archeological survey be conducted, and if required, Phase II testing and data recovery, by qualified archaeologists. When he heard that AINW had been hired to conduct the Phase I survey, Mr. Chocktoot stated that John Fagan of AINW was well respected by the tribe.

Mr. Chocktoot stated that they would request tribal monitors be present during ground disturbing activities associated with facility construction (this would apply to both Alternative 1 and 2, depending on which was chosen). He indicated that the monitors could ensure minimal delays should unanticipated discoveries occur during construction, because the monitors would be able to decide how best to treat the resource without prolonged stoppage of construction while multiple state/federal agencies were contacted. He stated that the tribe has several trained monitors that could be hired to do this work.

and Red Rock might consider hiring them directly as a sub-contractor. Typical fees include the insurance and 1099 requirements. They run $27-32 per hour and $45-50 per day perdiem (this did not include the Davis-Bacon scale).

I informed Mr. Chocktoot that Red Rock and AINW are anticipated to submit the archeological survey permit next week for review.

Oregon
John A. Kitzhaber, MD, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
(503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

December 24, 2013

Mr. James Neely
Dept of the Air Force/Wright-Patterson Air Base
2977 Hobson Wy Rm 215
Wright-Patterson AFB, OH 45433-7734

RE: SHPO Case No. 13-1886
AFRL Advance Drop-in Biofuel Production Facility Proj
CR Assessment/APE/construction of biofuel facility
Dept of Defense/Red Rock Biofuels
39S 20E 21, 22, 27, 34/40S 20E 3, Lakeview vicinity, Lake County

Dear Mr. Neely:

Our office recently received your letter seeking comments from our office regarding the above project and its potential to effect known archaeological sites in Oregon. Our office has earlier met with staff from Red Rocks Biofuels to discuss the potential for the project to impact known sites. As I informed their archaeologists, there are numerous known sites within Alternative 1 for your project. Alternative 2 has no known sites but this is probably due to the area not having any previous surveys conducted on its lands. Portions of Alternative 1 have been surveyed for other projects recently and that is why there are many (n=8) site within or directly adjacent to this parcel.

As I discussed with the Red Rocks Biofuel archaeologists this project area is located on a landform generally perceived to have a high probability for possessing archaeological sites and buried human remains. While not having sufficient knowledge to pinpoint the exact location of cultural resources within either of the proposed project parcels, due to the very high likelihood of significant sites being present, our office recommends that the applicant contact a qualified archaeologist to conduct a cultural resource survey of each of the parcels. On after knowing what sites exist with each of your two alternatives will you have sufficient information to assist you in your final selection process. A list of possible archaeological consultants can be found on our web site (www.oregonheritage.org) by clicking on the Archaeological Services web page and highlighting the section marked Archaeological Consultants List.

If you have any questions about the above comments or would like additional information, please feel to contact me at your convenience. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.

Sincerely,

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us

merjent

Telephone Log

Date:
December 17, 2013

To:
Stephanie O'Brian

Company:
Burns Paiute Tribe

Phone Number:
541-573-8091

From:
Kari Krause

Company:
Merjent, Inc.

Phone Number:
612-643-5248

Subject:
Red Rock Biofuels – Cultural Resources Identified within Project

Ms. Krause returned a voice message received from Ms. O'Brian concerning the Red Rock Biofuels Project. Ms. O'Brian was seeking clarification on what the proponent or lead agency was proposing for the known cultural sites within Alternate 1 location, specifically if there was an avoidance or mitigation plan. Ms. Krause indicated that the Department of Defense would be initiating their consultation with the Oregon State Historic Preservation Office and the tribes this month to discuss the project, but that one possible outcome would be the need for subsurface testing at the sites to allow for the development of future avoidance or mitigation plans.

Ms. Krause did provide contact information for Mr. Neely at the Department of Defense.

AINW Notes

Merjent

MEETING NOTES

Date:

11/18/2014

To:

Red Rock Biofuels LLC, Project File

From:

Kari Krause

Subject:

RRB Status of Section 106, Proposed Evaluation and Mitigation Efforts for Six Sites

Meeting Date & Location:

November 18, 2014; Oregon State Historic Preservation Office, Salem, OR

Meeting Attendees:

Ross Curtis, Dennis Griffin, John Pouley – OR SHPO; and Terry Ozbun – AINW (meeting in person)

Jeff Manternach, Mary Dirh – RRB; and Kari Krause – Merjent (attending via conference call)

Meeting Notes:

RRB – Provided project update and aware of grant from DOD, announced partnership with Southwest Airlines for half of jet fuel. Business is to capture the energy value in woody biomass vs crude oil.

AINW – Expressed appreciation on quick review of revised Phase I report.

Update on recent tribal meeting (Nov. 5-6, 2014) with Klamath and Burns Paiute tribes with the DOD and representatives from City of Lakeview and State of Oregon. Ft. Bidwell Tribe could not make the meeting. Tribes appreciated the low emissions and reducing the fuel load. Main concern was about potential burials. Perry talked about the regression of Goose Lake, and the sparse surface sites with projectile points could reflect water fowl hunting – isolated hunting locations. Paiute conflicted with Klamath insistence that this is only their homeland. Paiute wants to be involved with monitoring. Both seemed ready to move to MOA stage as long as monitoring was included. All tribes have received the revised the Phase I report.

Sites are generally sparse surface lithic scatters dominated by obsidian debitage, except for sites 3992 and 3994 which had larger quantities of materials. Subsurface material was generally shallow, except at 4694. Bioturbation from livestock seems most current disturbance to surface and shallow subsurface artifacts indicating lack of depositional integrity to most archaeological deposits.

SHPO – Recommending 20 m grid of excavations within the site area to aid on representing the site to focus the mitigating the significant features (not the entire site area). Also, not enough data on subsurface. Example – one site has concentration location that differs from original survey to AINW survey (AINW response - likely due to effort and duration of surveys, not really windblown sediments). Looters are prevalent in area as well. No matter how thorough the surveys, there is always the potential to miss a significant feature or burial, which is the reason to have monitors during construction. If water fowl hunting then a village site is unlikely but sparseness of subsurface testing makes it difficult to know for sure.

There are still some sites that should remain unevaluated and need more testing to determine eligibility. For the eligible sites, testing would be to focus on what portions of the site are significant. Griffin restated that testing was very minimal.

35LK3991 - AINW indicated RRB would like to use the entire site area. Prehistoric artifacts from FarWestern recovered along eastern edge, the subsurface material recovered from 0-40 cm with surface includes road base material – could be from road fill. There were also two groundstone fragments from the NW corner. Feature 4 consists of "dumped" brick and building material, but EPG referred to it as a cistern, etc. However, FarWestern says oral history indicates this was a dump, mixed artifact dates throughout, and no maps show a homestead. Ross confirms that currently the historic component is still listed as eligible but prehistoric is unevaluated. SHPO concerned the historic features are limited the prehistoric examination. SHPO wants more subsurface survey across the entire site area – as long as the STP is square can dig within site area. Also, reassess the historic component, but need to evaluate the prehistoric. **SHPO recommend adding two more QTUs after traditional survey – 6 QTU minimal dependent on what found after pedestrian survey.** (Griffin stated this is bare bones, so money should not be issue as he would prefer STP every 20 m.)

Mitigation effort – SHPO agreed tentatively that 1x1m units in concentrations with material analysis (Perry didn't want to see hydration analysis) would be sufficient for data recovery. Unless feature was found.

35LK3992 – Site is recommended eligible (Ross says determine eligible). Surface scatter with debitage and tools, most subsurface from 0-30 cm, no deeper than 50 cm. Four concentrations identified, so suggesting 3 new STPs and 2 QTUs for evaluation. Proposing mitigation limited to northern concentrations. **SHPO – proposal seems reasonable.** Can you show sites linked to the receding lake levels through time? ANIW says the soil carbonate tests noted there was variation at different depths from unit.

35LK3994/3995 – Site is recommended eligible (Ross says determined eligible). One QTU (QTU-9) had over 900 artifacts from 0-20 cm, no deeper than 50 cm. Material shows broad range of lithic reduction. Mitigation at QTU-9 would be appropriate. Proposed QTUs in the two EPG-recorded concentrations. **Agreed that 3 QTUs (total) for evaluation, and then mitigation of northern concentration.**

35LK4696 - Site is recommended as unevaluated because distance between negative shovel tests. Because auger test went to depth of 1 m, it seems to support sites are surface expressions. **Recommending 2 STPs for boundary definition. If negative then site is not eligible.**

35LK4697 – Very sparse but large site area that recommended unevaluated. SHPO would like to see QTUs in the center of site area. **Recommending 3 STPs for boundary definition. Add 1 QTU for evaluation in center of site. If negative or sparse then site is not eligible.**

35LK4694 – Site is recommended as eligible and is located on the railroad. Material was recovered to depth of 70 cm. East-west boundary is based on APE, no N-S boundary determined on west side. SHPO wondering if the workspace is sufficient for construction? This will be a 6-inch steel pipe. Recommending only mitigation, no evaluation testing. **Single 1x1 m for entire affected area. – SHPO agree.**

SHPO – asked AINW's thoughts on mitigation efforts for each site. ***AINW suggested 1 TU at prehistoric concentration of 3991, at 3992 and 3994 wants 2 TUs each, and 1 TU at 4694, based off of what known now for each site.*** **SHPO tentatively agreed but pending results of evaluation testing.** Monitoring also needs to be included. However, can't require tribal monitors to have archaeological training. *Are there areas of greater potential for archaeologist to be present, or areas not present in addition to tribe? Or need an archaeologist present 100% of the time.* AINW's recommendations on this would be valuable based off of survey results. Might be limited to the concentration areas, but Ross said having an archeologist present at large sites with minimal STP might be good. Get through the cultural bearing deposits then leave rest to the tribes. Possible pre-work meeting with construction crew, especially backhoe operators to alert them to the sensivity of the area and potential for finding bones.

Treatment plans will be attached to the MOA that will outline the specific fieldwork, as discussed here. Have treatment plan, monitoring plan, and unanticipated plan attached to the MOA. SHPO agreed to review a draft of the plans prior to finalizing.

Permits are still open, with number of units available for evaluation testing. If need, amend the Steward property permit for additional testing (15 QTUs allowed on permit, 9 done, planning for 12 more). Since this is more than 25% of total it does not qualify for a 10-day review period amendment to the permit (Tribe and SHPO) and must undergo a 30-day review. Complete now prior to finalizing the treatment plan to incorporate new data in mitigation. This would result in a summary letter report to make a decision, or an addendum report. SHPO indicated an expedited review would be completed. New permits need 30 day review for the mitigation.

Red Rock Biofuels

November 11, 2014

Mr. James Neely
AFRL/RXME
Area B, Building 653, Room 215
2977 Hobson Way
Wright-Patterson Air Force Base, OH 45433

Re: Red Rock Biofuels LLC
Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report

Dear Mr. Neely:

Red Rock Biofuels LLC ("Red Rock") and Archaeological Investigations Northwest, Inc., ("AINW") has revised the Phase 1 archaeological and historical inventory report for Red Rock Biofuels' project in Lakeview, OR per Oregon SHPO's requests. Oregon SHPO's revision requests were discussed on a conference call with Red Rock and AINW on August 6, 2014 and documented in the attached summary of the call. The fieldwork was conducted by AINW under Archaeological Permit Numbers 1868 and 1869.

Please find enclosed five (5) copies of AINW's Revised ***Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report.*** Also enclosed are five (5) CDs with PDF and Word versions of the revised report.

We respectfully request the Air Force Research Lab to review and provide written comments to our findings and recommendations. Prior to providing concurrence with our findings and recommendations, Oregon SHPO may await your letter of concurrence with our findings and recommendations presented in the revised report. Please let us know if we can answer any questions or be of assistance.

The revised report has been submitted to Oregon SHPO, Klamath Tribes, Confederated Tribes of Warm Springs, Burns Paiute Tribe, and the Commission for Indian Services for concurrent review. Electronic copies of these submittals are provided on the CDs.

Please note that the information in these documents is Proprietary. We respectfully request these documents be treated following the same guidelines as the Phase 2 Proposal.

Respectfully Yours,

Jeff Manternach
Red Rock Biofuels LLC

Red Rock Biofuels LLC
720 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Enclosures: Summary of Conference Call – Red Rock Biofuels Project, August 6, 2014
Five (5) copies of AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report
Five (5) CDs with PDF and Word versions of AINW's Revised Archaeological and Historical Resource Survey and Evaluation for the Red Rock Biofuels Project, Lake County, Oregon Report, and PDF of documents submitted to Oregon SHPO and relevant tribes for concurrent review.

Summary of Conference Call
Red Rock Biofuels Plant
8-6-14

On August 6, 2014 Dennis Griffin, John Pauley, Jason Allen, and Ross Curtis of Oregon SHPO participated in a conference call with Terry Ozbun and John Fagan of ~~AINM~~ AINW to discuss a letter from SHPO regarding the Red Rock Biofuels LLC ("RRB") Plant Project near Lakeview, Oregon. Also participating on the conference call was Mary Dinh of ~~Red Rock Biofuels~~RRB, and ~~one of~~ their consultants~~.~~ Kari Krause, Merjent, Inc. After discussing concerns in the letter, the Oregon SHPO made several recommendations regarding report revisions and a path forward for the project ~~participants came to the following agreements regarding report revisions:~~

1-The report ~~will~~ would be revised to address eligibility for all sites. Based on previous work or testing, the site will be "eligible" or "unevaluated" and treated as eligible. The whole site will be eligible or treated as eligible. Specifically, the following sites and recommendations were discussed:

- 35LK3991 - see point 5 (below), the language should be changed to indicate that the Project has the potential of no adverse effect to only the portion affected by the access road. SHPO agrees that the site is eligible but recommends conducting additional testing under a staged approach during the data recovery; the site would be included in the MOA.
- 35LK3992 - SHPO agrees that the site is eligible but recommends conducting additional testing under a staged approach during the data recovery; the site would be included in the MOA.
- 35LK3994 - SHPO agrees that the site is eligible but recommends conducting additional testing under a staged approach during the data recovery; the site would be included in the MOA.
- 35LK4694 (14/2176-5) – see point 5 (below), if the language is changed to indicate that the Project has the potential of an adverse effect to only the ~~western~~eastern half, as this is where the proposed pipeline is most likely to be installed.
- 35LK4696 (14/2176-11) - shovel tests excavated on the southeast side of the site were not included on the site map. If this is added to the map, than the SHPO agrees there is enough information to assess the site as not eligible.
- 35LK4697 (14/2176-16) – AINW recommended the site not eligible; however the SHPO feels additional Phase II evaluation is needed and would assess the site as unevaluated. If RRB agreed to treat the site as eligible and conduct additional testing under a staged approach during the data recovery, then the site could be included in the MOA.
- Isolate 14/2176-14 – see point 4 (below), a shovel test excavated on the north side of the ISO was not included on the site map. If this is added to the map, than the SHPO agrees there is enough information to assess the site as not eligible.

2-Eligibility discussions for each site will include all four National Register criteria.

3-Revision of all site plan maps to show the first negative probe as the actual site boundary.

4-The map for 14/2176-14 will be revised to show the shovel probe placed north of site boundary.

5-Change discussion of "effect" for sites. If site is not avoided then a "no adverse" or an "adverse effect" may occur. It will be necessary to do additional testing in those parts of the site

that will be impacted to determine if important buried features are present and if there will be an "adverse effect" to the site under Criterion D. A two phased data recovery could be designed that implemented initial testing as a basis to determine if important buried features//materials are present that would be "adversely affected", and then further excavation if the results of that testing showed significant features/artifact deposits.

6-An MOA will be used to capture all agreed upon mitigation.

7-Address above-ground review concerns for ca. 1920 Craftsman farmstead at 17082 Highway 395. Conduct additional research to determine if property could be eligible for the National Register under other criteria besides Criterion C. This information can be included in a revised Phase I report.

8-~~Oregon~~ Oregon SHPO will expedite review of the revised report upon notification by the consultant that revisions are complete, and receiving the report with an electronic copy on CD.

merjent

MEETING NOTES

Date:
December 5, 2013

To:
Red Rock Biofuels project files

From:
Kari Krause, Merjent, Inc

Subject:
Meeting with Oregon State Historic Preservation Office to Discuss Red Rock Biofuels Project and Section 106 Compliance Process

Meeting Date & Location: December 5, 2013

Meeting Attendees: Dennis Griffin, State Archaeologist, SHPO; John Pouley, Assistant State Archaeologist, SHPO; Jason Allen, Historic Preservation Specialist, SHPO; Jeff Manternach, IR1 Group; Kari Krause, Merjent, Inc.

Meeting Notes:
Mr. Manternach provided a brief history of the IR1 Group and its subsidiary, Red Rock Biofuels (RRB), and project overview that included a discussion on the a goal of the project to reduce the fuel source in the national forests that make the fire season so extreme. He also explained that the gasification of carbon containing material was developed by the Germans during WWII and how some versions of the process are being used by other countries, i.e., South Africa and Qatar. He explained how siting the proposed facility south of Lakeview, OR was based on its proximity to feed stock, rail access, and the Ruby Pipeline for natural gas that will be used for burning the biomass. Mr. Manternach also discussed how the funding is being provided by the Department of Defense (DoD) and that project is being reviewed under NEPA.

Mr. Griffin provided a brief history of the Lakeview area and its significance to prehistoric peoples, how they used the hot springs, and settled or utilized the resources of Goose Lake and the marshy shoreline 10,000 years ago up to contact period. He summarized the known resources within the Project, i.e., 2 eligible archaeological sites and 5 others that are not evaluated, how Alternative 2 and the majority of the pipeline route has not been surveyed, and that Alternative 1 has been surveyed but it is up to RRB to justify the adequacy of those surveys for consideration for Section 106 compliance. Mr. Griffen stated that many of the previous surveys were inadequate and may not be appropriate because their survey methods may not match the needs of the RRB project, i.e., most surveys only had pedestrian survey completed, no subsurface testing conducted especially at site locations. Mr. Griffin suggested that with the poor quality of work previously conducted at Alternative 1, the likelihood that the SHPO

would concur that no additional surveys are warranted would be fairly low. He recommended that surveys be completed, as well as site delineation at the known sites to determine their eligibility. He also strongly recommended meeting with the Native American tribes interested in the area, particularly Perry Chocktoot of the Klamath Tribe. Mr. Griffin mentioned that the Warm Springs tribe will probably defer to the Klamath Tribe.

Mr. Pouley confirmed that sites 35LK3156 and 35LK3991 both recently were determined eligible. When asked if 35LK3991's eligibility considered both the historic and the prehistoric components as contributing, he stated there were special considerations because the federal agency determined it was eligible and the consultant recommended it as not eligible after the fact. Mr. Manternach and Ms. Krause both ask if there were options available to use portions of the site area for an access road. Mr. Griffin stated that additional work would need to be completed to make the determination.

Mr. Griffin recommended reading an online bulletin that defines the state laws and how they apply to landowners, and the landowner's rights. Mr. Manternach indicated he has a copy of this bulletin.

Mr. Griffin mentioned that the University of Oregon (U of O), Archaeology Investigations Northwest (AINW), and Heritage Research Associates (HRA) -Eugene have good reputations with the tribes. Any work plan, survey, or report should focus on the process for clearly identifying 1) boundaries, 2) composition, and 3) integrity of all cultural resources recorded within the APE. Previous companies (i.e., EPG and Far Western) that completed work within Alternative 1 did not demonstrate that all three conditions were met, therefore their work may not be adequate for this Project.

Mr. Griffin brief summarized the review process as a three-step process: 1) the field archaeologist will make recommendations to client (RRB and DoD), 2) the lead federal agency (DoD) will make a determination on eligibility of any identified resources and a recommendation for the Project, and 3) SHPO would review and concur with the recommendations. In some cases, an applicant of a large project may provide funds to the SHPO to hire an outside contractor to aid in review of projects in a more timely manner (e.g., El Paso (builder of Ruby Pipeline, now owned by Kinder Morgan) provided funds to SHPO to hire Tom Churchill to expedite review of their project.

When asked about the acceptance of a Programmatic Agreement (PA) to aid in completing the Section 106 process and meet the schedule defined by the Department of Defense. Mr. Griffin agreed that a PA would be an option to meet the obligations for NEPA and suggested that the conditions include a timeline to make sure the project moves swiftly to completion.

Mr. Pouley and Ms. Krause had a brief side-discussion concerning the archaeological permit process. The permit must go through a 30-day review period at which time, the

SHPO, the tribes, and the landowner review and approve/deny the permit. A permit is required if you are on non-federal public lands, or if you are excavating within sites on either private or public lands. A separate permit is needed for each property owner. If the permit doesn't cover all contingencies then the permit has to be revised and may take another 14-30 days. Some of the things that the tribes will look at are: the research design, survey methods, screen size, excavation levels, unit size, and when to terminate excavations, etc. He also indicated that while the tribe reviews the permits they do not have the authority to deny a permit, however, they will take the full 30 days to review the permit especially if they have concerns.

Ms. Krause and Mr. Allen met separately to discuss the review for historic above-ground structures. Mr. Allen stated that because this is a Section 106 project, an inventory should be completed. First thing would be to determine the direct and indirect area of potential effect (APE). It is the responsibility of the DoD to define the APE; the SHPO is willing to work with the DoD or RRB to define the APE. The indirect APE would consider the height of the facility buildings/stack and the flat landscape to determine the distance required for the survey. A recon level survey would first isolate the above-ground structures that would meet the eligibility criteria for the National Register of Historic Places. The second phase would involve a deeper evaluation of these structures and potential effects of the Project to their view shed. RRB must have a qualified architectural historian conduct the inventory.

Action Item:

1. Recommend the DoD begin government-to-government consultation with the tribes. Suggest to DoD that RRB continue the informal consultation with the tribes by scheduling meetings to discuss tribal concerns and options available to complete the Section 106 process.
2. Recommend DoD begin formal Section 106 consultation with the SHPO and determine APE for cultural resources surveys.
3. Contact regional archaeological companies, starting with U of O, AINW and HRA, to develop a work plan and begin the permit process for starting archeological surveys. Whichever company is chosen, they must meet the OR SHPO standard for a qualified archaeologist and architectural historian.

Project Information

Defense Production Act Title III Office
Advanced Drop-in Biofuels Production Program (ADBPP)

Technical Exchange Meeting
Indian Tribe Stakeholders

Red Rock Biofuels Project

Date: **Tuesday, 5 November 2014**
Time: **8:00 a.m. - 4:00 p.m.**
Location: **Lakeview's Townhall**
525 N. 1st Street
Lakeview, OR 97630

8:00 am: Welcome & Introductions James Neely (AF)

8:10 am: Overview of Defense Production Act Title III Program Office Jeff Smith (AF)

8:40 am: Overview of Advanced Drop-in Biofuels Production Program James Neely (AF)

9:00 am: Red Rock Biofuels Project in Lake County, OR Jeff Manternach (RR)

9:30 am: Summary of Archeological Surveys of Red Rock Biofuels Project Site AINW

10:30 am: Break

10:45 am: Discussion of Memorandum of Agreement (MOA) AF/Red Rock
and Three (3) Plans (Treatment/Construction Monitoring/Unanticipated Discoveries)

12:00 pm: Lunch
All

1:00 pm: Question and Answer / Individual Meetings as requested

3:00 pm: Walk Project Site
All

Air Force Defense Production Act Title III Office
Advanced Drop-in Biofuels Production Program
Red Rock Biofuels Project
Technical Exchange Meeting
Indian Tribe Stakeholders

11/5/16 Attendees

Klamath Tribes:
- Perry Chocktoot, Tribal Historic Preservation Officer
- Coleen Crume, Cultural Committee
- Betty BlackWolf, Cultural Committee
- Janis Miller, Cultural Committee

Red Rock Biofuels:
- Jeff Manternach, Chief Financial Officer
- Mary Dinh, Project Manager

AINW:
- Terry Ozbun, Archaeologist

Town of Lakeview:
- Ray Simms, Town Manager

Business Oregon
- Larry Holzgang, Business Development Officer

Air Force:
- Jeff Smith, Executive Agent
- James Neely, Program Manager
- John Crabill, Program Engineer

Northrop Grumman:
- Joanne Morello, Bioenergy Scientist

11/6/14 Attendees

Burn-Paiute Tribe:
- Diane Teeman, Tribal Historic Preservation Officer

Oregon Office of the Governor:
- Susanna Julber, South Central Oregon Regional Solutions Coordinator

Red Rock Biofuels:
- Jeff Manternach, Chief Financial Officer
- Mary Dinh, Project Manager

AINW:
- Terry Ozbun, Archaeologist

Air Force:
- Jeff Smith, Executive Agent
- James Neely, Program Manager
- John Crabill, Program Engineer

Northrop Grumman:
- Joanne Morello, Bioenergy Scientist

Memo for Record

Subject: Telecon with Perry Chocktoot, Jr on 19 Feb 2014

At 1600 hours EST on 19 Feb 2014, Warren Assink and John Crabill spoke with Perry Chocktoot, Jr. Mr Chocktoot is the Tribal Historical Preservation Officer (THPO) for the Klamath Tribes. The purpose of the call was to inform Mr Chocktoot that a NHPA Section 106 Consultation letter was sent to him, concerning the proposed Red Rock Biofuels (RRB) bio-refinery site south of Lakeview, OR and to notify him about the planned Red Rock archeological site survey permit at the Oregon SHPO later this month or early next month to be conducted by AINW.

We provided a brief description of the ADBPP project to Mr Chocktoot. He mentioned that there had been a massive wildfire in the area several years ago which left much charred, dead timber. He said there is little to no underbrush due to the wildfire. He also said that there is a large swath of beetle-infestation dead timber in the area. He wondered if either would make good feedstock for RRB's IBPE.

When told of the location, Mr Chocktoot stated that the proposed sites are on Klamath tribal lands; that the no other tribes had recognized claim to that area. He cited a circa 1860s treaty between the US Government and the Klamath Tribes as proof. Mr Chocktoot stated that phase 1 and phase 2 archaeological surveys will probably be required. He stated with confidence that human remains will probably be found on the site. He said that Lakeview is built on an old Klamath village, and that US-395 follows a historic Klamath path into that village.

Mr Chocktoot asked if public meetings were scheduled to discuss this project. He also asked if the project it's proposed to be an Environmental Assessment (EA) or Environmental Impact Statement (EIS) IAW NEPA. We told him the current action is an EA. He was told that RRB provided an update to the Lakeview Board of Commissioners in a public meeting on or about 10 Feb 2014. He also mentioned that there has been much interest in past biomass projects in the Lakeview area, because of potential impacts to residential use of wood burning for heat. He also stated that the air quality in the area can be poor due to seasonal weather inversion caused by the nearby mountains and wondered how this potential refinery could exacerbate the existing air quality maintenance zone. We tried to explain that the IBPE should not have an adverse effect on air quality, but that it needs to be clearly explained in any proposed EA.

Mr Chocktoot talked about the advantages of hiring a tribal monitor for the duration of the project. The main advantage is that the tribal monitor can immediately make a decision on disposition of any cultural artifacts or human remains that are unearthed during construction, which avoids shutting down construction for days or even weeks at a time. When informed that RRB will be responsible for construction, Mr Chocktoot asked for the name and contact information of a decision maker at the company. He was given Jeff Manternach's name, office phone number and e-mail address.

Mr Chocktoot provided the mailing address for the Klamath Tribes office: 501 Chiloquin Blvd, Chiloquin, OR 97624. He gave us his e-mail address: perry.chocktoot@klamathtribes.com

DoD Memo for Record

Phone Log – Tribal Contacts – RRB

12 Feb 2014 – Called to inform the Tribal Historic Preservation Officers (THPOs) that the NHPA Section 106 Consultation letters are on the way.

- Klamath Tribes – Perry Chocktoot, Jr, he was out sick, left message with Lillian

- Burns Paiute Tribes – Agnes Castronuevo, left a voice mail

- Confederated Tribes of Warm Springs – Robert Brunoe

- Fort Bidwell Indian Community – Loyette Meza

13 Feb 2014 - Called to inform the Tribal Historic Preservation Officers (THPOs) that the NHPA Section 106 Consultation letters are on the way.

- Pit River Tribe – Morningstar Gali

19 Feb 2014 – Perry Chocktoot called to discuss. He does not have the consultation letter yet.

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

DEC 2 0 2013

MEMORANDUM FOR MR. ROGER ROPER
OREGON PARKS AND RECREATION DEPARTMENT (OPRD)
ASSISTANT DIRECTOR, HERITAGE PROGRAMS/DEPUTY SHPO
725 SUMMER ST NE, SUITE C
SALEM, OR 97301

FROM: AFRL/RXME (J. NEELY)
2977 HOBSON WAY, RM 215
WRIGHT-PATTERSON AFB, OH 45433-7734

SUBJECT: National Historical Preservation Act (NHPA) Section 106 Consultation

1. The Air Force Research Laboratory (AFRL) may be partnering with a commercial company, Red Rock Biofuels, to develop an Advanced Drop-in Biofuel Production (ADBP) facility in Lake County, Oregon near the town of Lakeview, Oregon. In anticipation of that potential partnering, AFRL is initiating contact with your office following provisions of 36CFR§800.3, and we particularly are soliciting your information and advice regarding our proposed project Area of Potential Effect (APE). We are concurrently seeking information from 4 federally-recognized tribes listed in Attachment 1, Program Introduction.

2. The potential ADBP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial-based maps depicting the Project location are attached for your reference. AFRL has attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts.

3. The AFRL and Red Rock Biofuel team looks forward to your comments about the potential location. AFRL's Title III action officer on this effort is Mr. Warren Assink, (937) 255-3480, warren.assink@us.af.mil. You can also reach me on (937) 904-4374, james.neely@us.af.mil.

James A. Neely

JAMES A. NEELY
DPA Title III Project Manager
Materials and Manufacturing Directorate

Attachments:
1. Program Introduction
2. Maps identifying proposed utilities
3. Cultural Resources Assessment and Review for the proposed Red Rock Biofuel facility, including proposed site maps

Burns Paiute Tribe
Cultural & Heritage Department
100 Pasigo St
Burns, OR 97720
Phone (541) 573-8090

December 18, 2013

James Neely
Wright Patterson AFB
james.neely@us.af.mil
Via email

Re: Red Rock Biofuels LLC Red Rock Project, Lake County
T. 39S, R20E, S. 21, 22, 27, & 34; T40S, R20E, S. 3

Dear Mr. Neely:

After reviewing the notification letter from Red Rock Biofuels LLC submitted to my office, the Burns Paiute Tribe has no objections to the proposed work. Please be aware that the proposed work area is in a larger high potential area for cultural resource sites and is part of a traditional use area important to the tribe so may contain as yet undiscovered cultural resources. **As such, the Tribe requests that a Burns Paiute monitoring crew, supervised by a Tribal Archaeologist, will be on-site during all ground disturbing activity associated with this project, including archaeological testing or excavation, at the expense of the project proponent.** In accordance with ORS 390.910 and federal law 36 CFR 800.13 (as applicable), we request that the Cultural Resources Office be contacted immediately if any known or suspected cultural resources are encountered during any phase of the work. **We further request that we be given at least 72 hours' notice prior to the implementation of this project to enable the Tribal archaeologist and field monitoring crew to be present during ground disturbing activities.**

Please also be aware that state laws ORS 358.920 and ORS 390.235(1) (a) and federal law 43 CFR 7.4(a), as applicable, prohibit intentional excavation of known or suspected cultural resources without an archaeological permit and require that we be notified immediately if resources are discovered, uncovered, or disturbed. Federal law 43 CFR 10.3 and ORS 97.745, as applicable, prohibits the willful removal, mutilation, defacing, injury, or destruction of any cairn, burial, human remains, funerary objects, or objects of cultural patrimony of any native Indian. ORS 358.920 (as applicable) prohibits excavation, injury, destruction, or alteration of an archaeological site or object, or removal of an archaeological object from public or private lands.

Please feel free to contact me if I may be of any further assistance.

Sincerely,

Stephanie O'Brien, M.A., RFA
Archaeologist

Reviewed by _____ Date: 12-18-13
Agnes F. Castronuevo
Cultural & Heritage Director / Archaeologist



December 2, 2013

To: Mr. Bernold Pollard, Chairman
Fort Bidwell Indian Community of the Fort Bidwell Reservation of California
PO Box 129
Fort Bidwell, CA 96112

From: Jeff Mandernach
Chief Financial Officer
Red Rock Biofuels

Re: Red Rock Biofuels LLC Project, Lake County, Oregon
Consultation for Traditional Cultural Properties

Dear Mr. Pollard,

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of iR1 Group LLC, is proposing a project in Lake County, Oregon near the Town of Lakeview that will produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock. The plant will gasify approximately 400 short dry tons per day of feedstock. To meet the project goal, Red Rock is proposing to construct a new plant and associated infrastructure and implement a sustainable biomass harvesting program (the "Project").

The U.S. Department of Defense ("DoD") Air Force Research Laboratory/Materials and Manufacturing Directorate, Manufacturing and Industrial Technologies Division (AFRL/RXM) is preparing an environmental assessment, in accordance with the National Environmental Policy Act (NEPA), to identify the potential environmental and human impacts of a proposed federal action to support the design, construction, validation, qualification and operation of the proposed Project at one or more locations.

The Red Rock Project would be located on private land directly south of the Town of Lakeview, Oregon in the Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility, however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial-based maps depicting the Project location are enclosed for your reference.

The Red Rock Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the biomass facility and associated pipeline, and pursue site permits and environmental compliance, to include NEPA. Phase 2 will include the detailed engineering, construction and operation of the facility and associated pipeline. Red Rock is proceeding with Phase 1 and is designing the biomass facility footprint within an approximately 95-acre parcel. The area of potential effect would include an approximate 20-acre biomass storage area, 1.5 acres devoted to the processing plant and an administration/maintenance building, 0.32 acre tank farm with up to 9 tanks, a rail spur, a parking lot, and a 3- to 3.5-mile-long natural gas pipeline extending from the facility southward to connect with the existing Ruby Pipeline. It is anticipated that permanent and temporary workspace associated with pipeline construction will measure approximately 100-feet-wide and will parallel the east side of the Lake County Railroad.

NEPA requires complying with the National Historic Preservation Act (NHPA) of 1966 (36 CFR 400.4, as amended through 2006). Red Rock has contracted with Merjent, Inc. (Merjent) to assist with the environmental review and permitting of the project. Merjent completed a background records review for the Project on November 22, 2013 at the State Historic Preservation Office in Salem, Oregon. This review consulted the records of previously identified archaeological sites, historic structures, cemeteries, and previously conducted cultural resources surveys

Red Rock Biofuels LLC
720 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525



within the project location. Fifteen cultural resources surveys have been recorded within 1-mile of the Project (Table 1). Of these, one work plan and five cultural resources investigations have been completed within and directly adjacent to Alternate Site 1 in support of utility and infrastructure expansion projects. No surveys have been conducted along the proposed pipeline corridor or within Alternate Site 2. Three prehistoric lithic scatters, sites 35LK4234, 35LK4235, and 35LK4236 have been recorded immediately north of Alternate Site 2. None of these sites has been evaluated for listing on the National Register of Historic Places (NRHP). This study was conducted in order to meet the requirements of Section 106 of the NHPA as well as other Federal and state regulations.

About 95 percent, or 90 acres, of the Alternate Site 1 has been previously surveyed for cultural resources; the remaining area has been heavily disturbed by a concrete mixing plant. A total of six previously known archeological sites have been identified within Alternate Site 1 (Table 2); one additional site, 35LK4178, has been recorded south of the alternate location and within the proposed pipeline corridor. Sites 39LK3156, 39LK3992, 39LK3993, 39LK3994, 39LK3995, and 35LK4178 represent prehistoric lithic scatters while 39LK3991 consists of both historic and prehistoric components. None of these sites have been evaluated for listing on the NRHP. One historic above-ground structure has been previously recorded in close proximity to Alternate Site 1. Historic structure 43208, also known as the Mark and Rose Musgrave House, is recommended eligible to the NRHP.

While the regulations for implementing Section 106 of the NHPA (at 36 CFR 800) allow companies or consultants to gather information, the DoD is responsible for government-to-government consultations with Indian tribes. If you would like to communicate directly with the DOD to discuss its cultural resource review and consultation processes, please feel free to contact John A. Crabill, DPA Title III Portfolio Manager, AFRL/RXME, at 937-904-4390.

Red Rock respectfully requests that the Fort Bidwell Indian Community of the Fort Bidwell Reservation of California review the proposed project area and seeks your comments in regard to potential effects to significant historic or cultural properties. Red Rock anticipates receiving your response within 30 days so that any potential concerns may be addressed in the Environmental Assessment.

Red Rock is committed to preserving Native American cultural heritage and looks forward to receiving your response. If you have questions regarding this project or require additional information, please contact Jeff Manternach of Red Rock Biofuels LLC at 503-636-1130 (email: jeffm@rrgroup.com) or Karl Krause, Merlent's cultural resources consultant at (612) 643-5248 or by email at kkrause@merlent.com.

Sincerely,

Jeff Manternach
Red Rock Biofuels LLC

Enclosures: USGS topographic map and aerial-based photograph

cc: Ms. April Brehm, Merlent
Ms. Karl Krause, Merlent

Red Rock Biofuels LLC
720 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525



December 2, 2013

To: Ms. Agnes F. Castronuevo, M.A., RPA
Cultural Resources Program Director & Archaeologist
Burns Paiute Tribe
100 Pasigo St.
Burns, OR 97720

From: Jeff Mantemach
Chief Financial Officer
Red Rock Biofuels

Re: Red Rock Biofuels LLC Project, Lake County, Oregon
Consultation for Traditional Cultural Properties

Dear Ms. Castronuevo,

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Red Rock Biofuels LLC
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identified archaeological sites, historic structures, cemeteries, and previously conducted cultural resources surveys within the project location. Fifteen cultural resources surveys have been recorded within 1-mile of the Project (Table 1). Of these, one work plan and five cultural resources investigations have been completed within and directly adjacent to Alternate Site 1 in support of utility and infrastructure expansion projects. No surveys have been conducted along the proposed pipeline corridor or within Alternate Site 2. Three prehistoric lithic scatters, sites 35LK4234, 35LK4235, and 35LK4236 have been recorded immediately north of Alternate Site 2. None of these sites has been evaluated for listing on the National Register of Historic Places (NRHP). This study was conducted in order to meet the requirements of Section 106 of the NHPA as well as other Federal and state regulations.

About 95 percent, or 90 acres, of the Alternate Site 1 has been previously surveyed for cultural resources; the remaining area has been heavily disturbed by a concrete mixing plant. A total of six previously known archeological sites have been identified within Alternate Site 1 (Table 2); one additional site, 35LK4178, has been recorded south of the alternate location and within the proposed pipeline corridor. Sites 35LK3156, 35LK3992, 35LK3993, 35LK3994, 35LK3995, and 35LK4178 represent prehistoric lithic scatters while 35LK3991 consists of both historic and prehistoric components. None of these sites have been evaluated for listing on the NRHP. One historic above-ground structure has been previously recorded in close proximity to Alternate Site 1. Historic structure 43208, also known as the Mark and Rose Musgrave House, is recommended eligible to the NRHP.

While the regulations for implementing Section 106 of the NHPA (at 36 CFR 800) allow companies or consultants to gather information, the DoD is responsible for government-to-government consultations with Indian tribes. If you would like to communicate directly with the DOD to discuss its cultural resource review and consultation processes, please feel free to contact John A. Crabill, DPA Title III Portfolio Manager, AFRL/RXME, at 937-904-4390.

ited Rock respectfully requests that the Burns Paiute Tribe review the proposed project area and seeks your comments in regard to potential effects to significant historic or cultural properties. Red Rock anticipates receiving your response within 30 days so that any potential concerns may be addressed in the Environmental Assessment.

Red Rock is committed to preserving Native American cultural heritage and looks forward to receiving your response. If you have questions regarding this project or require additional information, please contact Jeff Manternach of Red Rock Biofuels LLC at 503-636-1130 (email: jeffm@rrgroup.com) or Karl Krause, Merjent's cultural resources consultant at (612) 643-5248 or by email at kkrause@merjent.com.

Sincerely,

Jeff Manternach
Red Rock Biofuels LLC

Enclosures: USGS topographic map and aerial-based photograph

cc: Ms. April Brehm, Merjent
Ms. Karl Krause, Merjent



December 2, 2013

To: Mr. Perry Chocktoot
Klamath Tribes
Director of Culture and Heritage Department
PO Box 436
Chiloquin, OR 97624

From: Jeff Mantemach
Chief Financial Officer
Red Rock Biofuels

Re: Red Rock Biofuels LLC Project, Lake County, Oregon
Consultation for Traditional Cultural Properties

Dear Mr. Chocktoot,

Red Rock Biofuels LLC ("Red Rock"), a subsidiary of IR1 Group LLC, is proposing a project in Lake County, Oregon near the Town of Lakeview that will produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock. The plant will gasify approximately 400 short dry tons per day of feedstock. To meet the project goal, Red Rock is proposing to construct a new plant and associated infrastructure and implement a sustainable biomass harvesting program (the "Project").

The U.S. Department of Defense ("DoD") Air Force Research Laboratory/Materials and Manufacturing Directorate, Manufacturing and Industrial Technologies Division (AFRL/RXMI) is preparing an environmental assessment, in accordance with the National Environmental Policy Act (NEPA), to identify the potential environmental and human impacts of a proposed federal action to support the design, construction, validation, qualification and operation of the proposed Project at one or more locations.

The Red Rock Project would be located on private land directly south of the Town of Lakeview, Oregon in the Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial based maps depicting the Project location are enclosed for your reference.

The Red Rock Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the biomass facility and associated pipeline, and pursue site permits and environmental compliance, to include NEPA. Phase 2 will include the detailed engineering, construction and operation of the facility and associated pipeline. Red Rock is proceeding with Phase 1 and is designing the biomass facility footprint within an approximately 95-acre parcel. The area of potential effect would include an approximate 20-acre biomass storage area, 1.5 acres devoted to the processing plant and an administration/maintenance building, 0.32 acre tank farm with up to 9 tanks, a rail spur, a parking lot, and a 3- to 3.5-mile-long natural gas pipeline extending from the facility southward to connect with the existing Ruby Pipeline. It is anticipated that permanent and temporary workspace associated with pipeline construction will measure approximately 100-feet-wide and will parallel the east side of the Lake County Railroad.

NEPA requires complying with the National Historic Preservation Act (NHPA) of 1966 (36 CFR 400.4, as amended through 2006). Red Rock has contracted with Merjent, Inc. (Merjent) to assist with the environmental review and permitting of the project. Merjent completed a background records review for the Project on November 22, 2013 at the State Historic Preservation Office in Salem, Oregon. This review consulted the records of previously

Red Rock Biofuels LLC
730 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525



identified archaeological sites, historic structures, cemeteries, and previously conducted cultural resources surveys within the project location. Fifteen cultural resources surveys have been recorded within 1-mile of the Project (Table 1). Of these, one work plan and five cultural resources investigations have been completed within and directly adjacent to Alternate Site 1 in support of utility and infrastructure expansion projects. No surveys have been conducted along the proposed pipeline corridor or within Alternate Site 2. Three prehistoric lithic scatters, sites 35LK4234, 35LK4235, and 35LK4236 have been recorded immediately north of Alternate Site 2. None of these sites has been evaluated for listing on the National Register of Historic Places (NRHP). This study was conducted in order to meet the requirements of Section 106 of the NHPA as well as other Federal and state regulations.

About 95 percent, or 90 acres, of the Alternate Site 1 has been previously surveyed for cultural resources; the remaining area has been heavily disturbed by a concrete mixing plant. A total of six previously known archeological sites have been identified within Alternate Site 1 (Table 2); one additional site, 35LK4178, has been recorded south of the alternate location and within the proposed pipeline corridor. Sites 35LK3156, 35LK3992, 35LK3993, 35LK3994, 35LK3995, and 35LK4178 represent prehistoric lithic scatters while 35LK3991 consists of both historic and prehistoric components. None of these sites have been evaluated for listing on the NRHP. One historic above-ground structure has been previously recorded in close proximity to Alternate Site 1. Historic structure 43208, also known as the Mark and Rose Musgrave House, is recommended eligible to the NRHP.

While the regulations for implementing Section 106 of the NHPA (at 36 CFR 800) allow companies or consultants to gather information, the DoD is responsible for government-to-government consultations with Indian tribes. If you would like to communicate directly with the DOD to discuss its cultural resource review and consultation processes, please feel free to contact John A. Crabill, DPA Title III Portfolio Manager, AFRL/RXME, at 937-904-4390.

Red Rock respectfully requests that Klamath Tribes review the proposed project area and seeks your comments in regard to potential effects to significant historic or cultural properties. Red Rock anticipates receiving your response within 30 days so that any potential concerns may be addressed in the Environmental Assessment.

Red Rock is committed to preserving Native American cultural heritage and looks forward to receiving your response. If you have questions regarding this project or require additional information, please contact Jeff Manternach of Red Rock Biofuels LLC at 503-636-1130 (email: jeffm@rlgroup.com) or Kari Krause, Merlent (a cultural resources consultant at (612) 643-5248 or by email at kkrause@merlentLLC.com.

Sincerely,

Jeff Manternach
Red Rock Biofuels LLC

Enclosures: USGS topographic map and aerial-based photograph

cc: Ms. April Brehm, Merlent
Ms. Kari Krause, Merlent

Red Rock Biofuels LLC
720 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525



December 2, 2013

To: Mr. Robert Brunoe
Manager, Natural Resources
Confederated Tribes of Warm Springs
1233 Veterans Street
Warm Springs, OR 97761

From: Jeff Manternach
Chief Financial Officer
Red Rock Biofuels

Re: Red Rock Biofuels LLC Project, Lake County, Oregon
Consultation for Traditional Cultural Properties

Dear Mr. Brunoe,

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The Red Rock Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the biomass facility and associated pipeline, and pursue site permits and environmental compliance, to include NEPA. Phase 2 will include the detailed engineering, construction and operation of the facility and associated pipeline. Red Rock is proceeding with Phase 1 and is designing the biomass facility footprint within an approximately 95-acre parcel. The area of potential effect would include an approximate 20-acre biomass storage area, 1.5 acres devoted to the processing plant and an administration/maintenance building, 0.32 acre tank farm with up to 9 tanks, a rail spur, a parking lot, and a 3- to 3.5-mile long natural gas pipeline extending from the facility southward to connect with the existing Ruby Pipeline. It is anticipated that permanent and temporary workspace associated with pipeline construction will measure approximately 100-feet-wide and will parallel the east side of the Lake County Railroad.

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ited Rock is committed to preserving Native American cultural heritage and looks forward to receiving your response. If you have questions regarding this project or require additional information, please contact Jeff Manternach of Red Rock Biofuels LLC at 503-636-1130 (email: jeffm@irigroup.com) or Kari Krause, Merjent's cultural resources consultant at (612) 643-5248 or by email at kkrause@merjent.com.

Sincerely,

Jeff Manternach
Red Rock Biofuels LLC

Enclosures: USGS topographic map and aerial-based photograph

cc: Ms. April Brehm, Merjent
Ms. Kari Krause, Merjent

Red Rock Biofuels LLC
720 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

ATTACHMENT 1. Program Introduction

Purpose: The Advanced Drop-In Biofuel Production Project (ADBPP) is a Department of Defense (DoD)-led multi-agency effort to develop a viable commercial-scale Integrated Biofuel Production Enterprise (IBPE). The effort intends to support the establishment of a domestic commercial-scale manufacturing facility that produces aviation and marine diesel biofuels from sustainable biomass feed-stocks. The DoD has indicated intention to purchase drop-in replacement biofuels that meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, and can utilize the existing infrastructure, and are deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts.

Red Rock Biofuels LLC (Red Rock), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project (Project). Annually, the plant will gasify approximately 500 short tons per day of feedstock on a dry basis using gasification technology and will produce annually approximately 7.17 million gallons (MMgal) jet fuel, 7.17 MMgal diesel, and 1.55 MMgal naphtha. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program (Figure 1).

Red Rock is evaluating two alternative locations for the facility (i.e., Alternative 1, approximately 94.6 acres and Alternative 2, approximately 169.1 acres); however, ground disturbance activities will be limited to approximately 40 acres within the larger property footprint. The biofuels facility will be designed to avoid wetlands and all eligible cultural resources. The project involves the following:

- Approximately 3 acres devoted to the processing plant and an administration/maintenance building (various facility components ranges from 30 to 100 feet in height),
- 1 acre tank farm with up to 9 tanks,
- Employee and visitor parking lots,
- An access road from Kadrmas Rd. and secondary roads within site boundary,
- An approximately 600 square foot water pump house, an approximate 50-foot-diameter fire water tank, and associated buried water pipeline,
- A stormwater retention pond,
- An approximate 20 acre biomass storage area with "Day Bin", typically a concrete slab with cover,
- 0.36 mile long rail spur, and
- An approximate 3 to 3.5 mile long natural gas pipeline.

The Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the Integrated Biofuel Production Enterprise (IBPE) facility, and pursue site permits and environmental compliance, including the National Environmental Policy Act (NEPA) review. Phase 2 will include the detailed engineering, construction and operation of the IBPE facility. Red Rock is proceeding with Phase 1 and is actively designing the project footprint within the project area.

Currently the contractor is validating their proposed technical, economic and regulatory viability assumptions leading to a potential follow-on contract that would execute facility construction and initiate production. The DoD awarded this initial phase to multiple contractors documenting numerous technical and logistical alternatives that will compete for the follow-on contract.

Section 106 consulting planned with the following parties:

1. Klamath Tribes
   Perry Chocktoot, Jr.
   Director of Culture and Heritage Department
   PO Box 436
   Chiloquin, OR 97624
   (541) 783-2219 X178

2. Burns Paiute Tribe
   Agnes F. Castronuevo, M.A., RPA
   Cultural Resources Program Director & Archaeologist
   100 Pasigo
   Burns, OR 97720
   Agnes.Castronuevo@burnspaiute-nsn.gov
   (541) 573-8089 (o)
   [redacted]

3. Confederated Tribes of Warm Springs
   Robert (Bobby) Brunoe
   Manager, Natural Resources
   1233 Veterans Street
   Warm Springs, OR 97761
   (541) 553-2001

4. Fort Bidwell Indian Community of the Fort Bidwell Reservation of California
   Bernold Pollard, Chairman
   PO Box 129
   Fort Bidwell, CA 96112
   (530) 279-6310

ATTACHMENT 2. Map

(see attached files and note below)

- Red Rock Site Layout showing proposed locations of where utilities will be entering the project site
  - Power, water, and sewer will enter the site along the proposed access road from Kadrmas Rd to the project site
  - The proposed natural gas pipeline will come up from Crane Creek Rd, parallel to the Lake County Rail, and enter the project site at the southwestern border on the north side of the proposed rail spur.



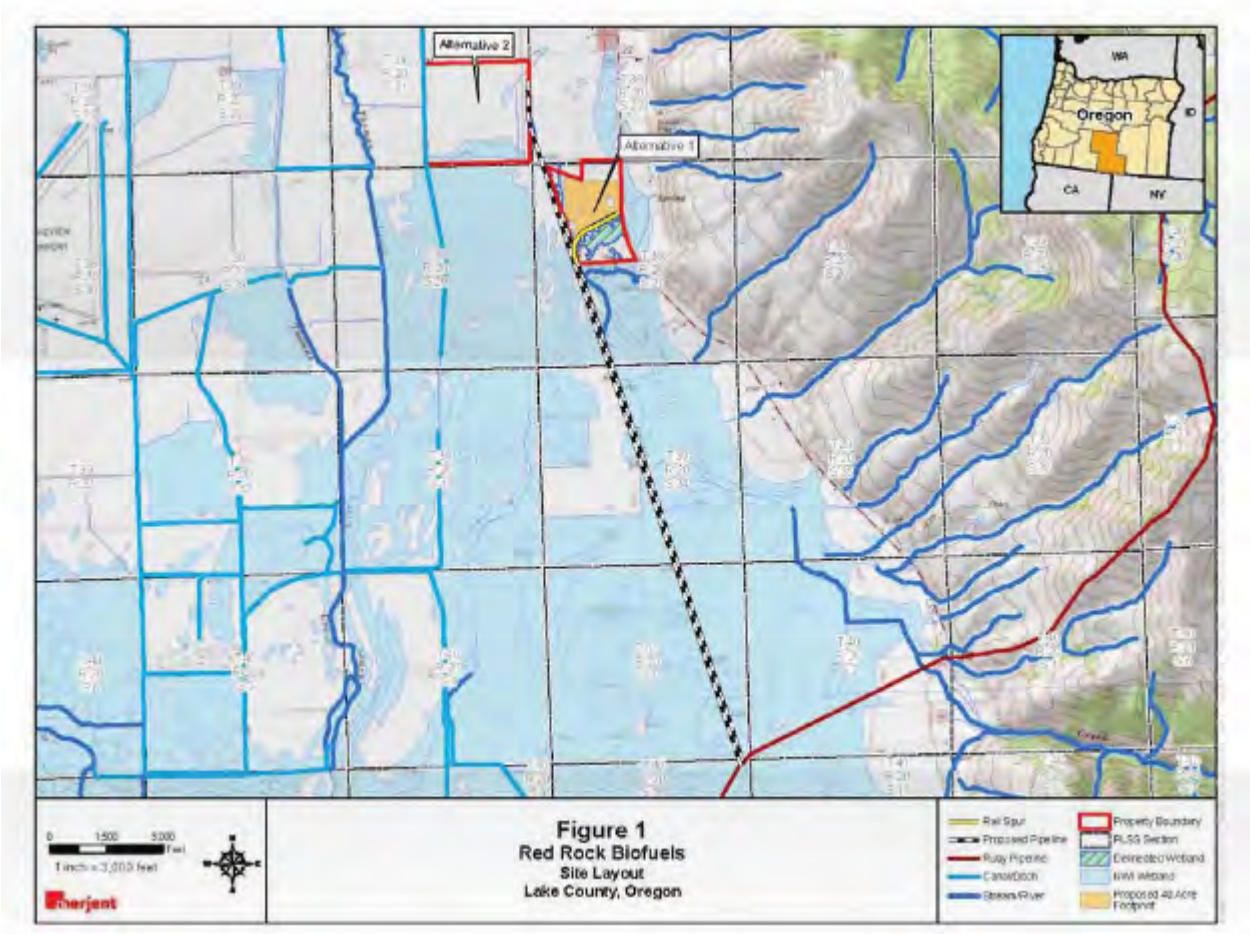
Table 1. Previously Recorded Cultural Resources Surveys Within 1-Mile of Project Area

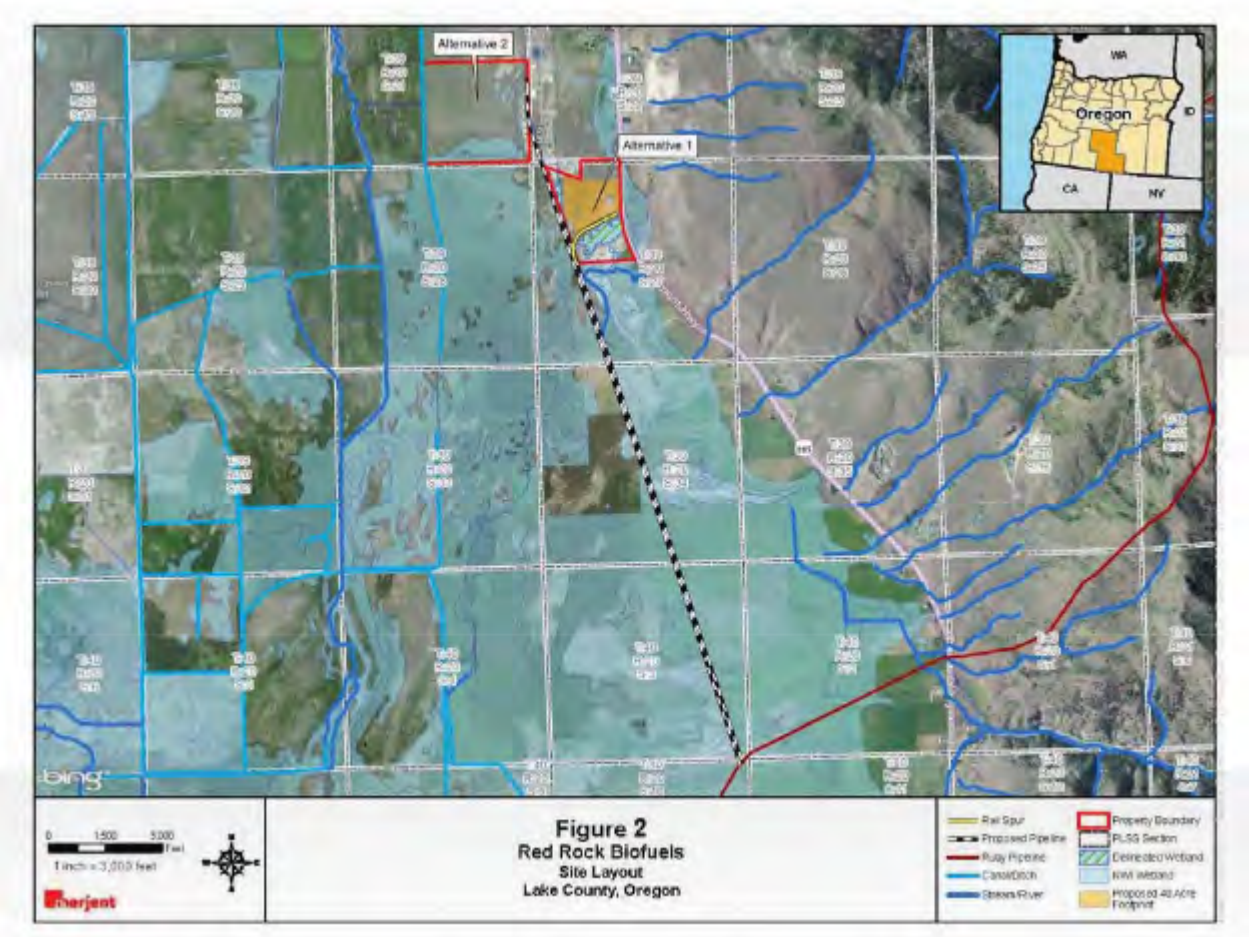
Title	Author	Date	Within APE
P.L. 566 Cultural Resources Inventory of Deadman-Bullard Watershed, Lake County, Near Lakeview Oregon	Spencer, Alan C	1998	
Archeological Survey of the Lakeside SCL (MP 144.05) – Cogswell Creek (MP152.00) Sections, US Highway 395, Lake County	Connolly, Thomas	1998	Yes
Century Tel, Inc. Fiber Optic Cable Project Lake County, Oregon	Jones, John W	1999	
Archaeological Evaluation of Three Localities in the Lakeview SCL-Cogswell Creek Section of the Fremont Highway (OR395), Lake County, Oregon.	O'Neill, Brian L.; Hodges, Charles M.; Connolly, Thomas J.; Jenkins, Dennis L.	1999	
Archaeological Evaluation of the Thomas Creek and Muddy Creek Bridge Replacement Locations, Klamath Falls to Lakeview Highway (OR 140), Lake County, Oregon	Jenkins, Dennis L.; O'Neill, Brian L	2000	
Cultural Resource Survey, Town of Lakeview Utility Extensions for Department of Corrections Lake County Work Camp Site	Bunten IV, Hugh	2001	
Town of Lakeview Geothermal Well Testing and Site Development Cultural Resource Survey Report	Kaiser, John	2007	Yes
Archaeological Survey of the US 395: Industrial Way-Lakeview Project, Lake County	Connolly, Thomas	2008	
A Cultural Resource Survey for the Ruby Pipeline Project, Oregon Segment- Lake and Klamath Counties, Oregon. Addendum I Klamath, Lakeview, Langell, and Merrill Yards; Marlin Lateral	Dobschuetz et al.	2010	Yes
Cultural Resource Survey of A Proposed Direct Use Geothermal Project and a Geothermal Power Generation Project Within and Adjacent to Lakeview, Lake County, Oregon	Werner, Roger H	2011	Yes
Archaeological Investigations of the Black Cap and Outback Solar Projects Lake County, Oregon	Bowden, Bradley; Sadin, Paul	2011	
Revised Boundary Testing Plan, Research Design, and Inadvertent Discovery Plan for Archaeological Sites 35LK3156, 35LK3991 and 35LK3995 in Support of the Town of Lakeview's Proposed Geothermal Heating System South Project Area, Lakeview, Oregon	Young, D. Craig	2012	
Treatment Plan and Inadvertent Discovery Plan for Archaeological Sites 35LK3156 and 35LK3991 in Support of the Town of Lakeview's Proposed Geothermal Heating System South Project Area, Lakeview, Oregon	Waechter, Sharon A	2013	Yes
Boundary Determination and Evaluation of Archaeological Sites 35LK3156 and 35LK3991 in Support of the Town of Lakeview's Proposed Geothermal Heating System South Project Area, Lakeview, Oregon	Waechter, Sharon A.	2013	Yes



Table 2. Previously Recorded Archaeological Sites within 1-Mile of Project.

Site Number	County	Site Type	Description	Recommendation
35LK3156	Lake	Prehistoric	Midden and lithic scatter	Unevaluated
35LK3157	Lake	Prehistoric	Lithic Scatter	Unevaluated
35LK3991	Lake	Historic; Prehistoric	Historic trash scatter with collapsed structures (probable farmstead); prehistoric groundstone fragments	Unevaluated
35LK3992	Lake	Prehistoric	Lithic scatter with one stone tool	Unevaluated
35LK3993	Lake	Prehistoric	Lithic scatter with stone tools	Unevaluated
35LK3994	Lake	Prehistoric	Lithic scatter with one stone tool	Unevaluated
35LK3995	Lake	Prehistoric	Lithic scatter	Unevaluated
35LK4234	Lake	Prehistoric	Lithic scatter with stone tools	Unevaluated
35LK4235	Lake	Prehistoric	Lithic scatter	Unevaluated
35LK4236	Lake	Prehistoric	Lithic scatter	Unevaluated
35LK4278	Lake	Prehistoric	Lithic Scatter	Unevaluated


Alternative 2
Alternative 1
WA
Oregon
ID
CA
NV
Figure 1
Red Rock Biofuels
Site Layout
Lake County, Oregon
Property Boundary
PLSS Section
Delineated Wetland
Proposed ADA/TE Footprint


Alternative 2
Alternative 1
WA
Oregon
ID
CA
NV
Figure 2
Red Rock Biofuels
Site Layout
Lake County, Oregon

Correspondence

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 1 2 2014

MEMORANDUM FOR CHAR LOTTE RODRIQUE, CHAIRPERSON
BURNS PAIUTE TRIBES
100 PASIGO
BURNS OR 97720

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. In reference to 10 Feb 2014 memo (National Historical Preservation Act (NHPA) Section 106 Consultation), I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this follow-up letter is to make sure you received the government-to-government consultation requesting assistance from the Burns Paiute Tribes in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location is situated within Section 27, Township 39S, Range 20E. Details of our proposed project Area of Potential Effect (APE) were described in the initial correspondence.

3. Because the information we seek is technical in nature, I propose that members of your staff handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, is coordinating the Air Force Research Laboratory (AFRL) Environmental Assessment to ensure that the tribe's comments and concerns are addressed. Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390, is the Government Project Manager. Request your response by 1 July 2014. When this assessment is available for public comment, we will provide a copy for Tribal review and comments.

4. Please feel free to call me at (937) 904-4374 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

Sincerely,

JAMES A. NEELY, Deputy Program Manager
Defense Production Act Title III Program
Materials and Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 12 2014

MEMORANDUM FOR AUST IN GREENE, CHIEF
CONFEDERATED TRIBES OF WARM SPRINGS
1233 VETERANS STREET
WARM SPRINGS OR 97761

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

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Defense Production Act Title III Program
Materials and Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 12 2014

MEMORANDUM FOR BERNO LD POLLARD, CHAIRMAN
FORT BIDWELL INDIAN COMMUNITY OF THE FORT
BIDWELL RESERVATION OF CALIFORNIA
PO BOX 129
FORT BIDWELL CA 96112

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

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2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location is situated within Section 27, Township 39S, Range 20E. Details of our proposed project Area of Potential Effect (APE) were described in the initial correspondence.

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4. Please feel free to call me at (937) 904-4374 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

Sincerely,

JAMES A. NEELY, Deputy Program Manager
Defense Production Act Title III Program
Materials and Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 12 2014

MEMORANDUM FOR D. GENTRY, CHAIRMAN
KLAMATH TRIBES
PO BOX 436
CHILOQUIN OR 97624

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. In reference to 10 Feb 2014 memo (National Historical Preservation Act (NHPA) Section 106 Consultation), I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this follow-up letter is to make sure you received the government-to-government consultation requesting assistance from the Klamath Tribes in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location is situated within Section 27, Township 39S, Range 20E. Details of our proposed project Area of Potential Effect (APE) were described in the initial correspondence.

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4. Please feel free to call me at (937) 904-4374 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

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JAMES A. NEELY, Deputy Program Manager
Defense Production Act Title III Program
Materials and Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 1 2 2014

MEMORANDUM FOR GAIL MORNINGSTAR
PIT RIVER TRIBES
XL RESERVATION
1036 LAKEVIEW HIGHWAY
ALTURAS CA 96101

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. In reference to 10 Feb 2014 memo (National Historical Preservation Act (NHPA) Section 106 Consultation), I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this follow-up letter is to make sure you received the government-to-government consultation requesting assistance from the Pit River Tribes in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location is situated within Section 27, Township 39S, Range 20E. Details of our proposed project Area of Potential Effect (APE) were described in the initial correspondence.

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4. Please feel free to call me at (937) 904-4374 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

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JAMES A. NEELY, Deputy Program Manager
Defense Production Act Title III Program
Materials and Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

FEB 2 0 2014

MEMORANDUM FOR GAIL MORNINGSTAR
PIT RIVER TRIBES
XL RESERVATION
1036 LAKEVIEW HIGHWAY
ALTURAS, CA 96101

FROM: AFRL/RX
2977 Hobson Way, Rm 400
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Pit Rive Tribes in determining if any significance is involved at the proposed site. Our proposed project Area of Potential Effect (APE) is described in the Program Introduction (Attachment 1).

2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial-based maps depicting the Project location are attached for your reference. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts.

3. Because the information we seek is technical in nature, I propose that members of our staffs handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, is coordinating the AFRL Environmental Assessment to ensure that the tribe's comments and concerns are addressed. Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390, is the Government Project Manager. When this assessment is available for public comment, we will provide a copy for Tribal review and comments.

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JOHN W. GLOYSTEIN, Colonel, USAF
Acting Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program Introduction
2. Maps

ATTACHMENT 1. Program Introduction

Purpose: The Advanced Drop-In Biofuel Production Project (ADBPP) is a Department of Defense (DoD)-led multi-agency effort to develop a viable commercial-scale Integrated Biofuel Production Enterprise (IBPE). The effort intends to support the establishment of a domestic commercial-scale manufacturing facility that produces aviation and marine diesel biofuels from sustainable biomass feed-stocks. The DoD has indicated intention to purchase drop-in replacement biofuels that meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, and can utilize the existing infrastructure, and are deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts.

Red Rock Biofuels LLC (Red Rock), a subsidiary of IRI Group LLC, proposes to construct a new biofuel facility that will produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project (Project). Annually, the plant will gasify approximately 500 short tons per day of feedstock on a dry basis using gasification technology and will produce annually approximately 7.17 million gallons (MMgal) jet fuel, 7.17 MMgal diesel, and 1.55 MMgal naphtha. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program (Figure 1).

Red Rock is evaluating two alternative locations for the facility (i.e., Alternative 1, approximately 94.6 acres and Alternative 2, approximately 169.1 acres); however, ground disturbance activities will be limited to approximately 40 acres within the larger property footprint. The biofuels facility will be designed to avoid wetlands and all eligible cultural resources. The project involves the following:

- Approximately 3 acres devoted to the processing plant and an administration/maintenance building (various facility components ranges from 30 to 100 feet in height),
- 1 acre tank farm with up to 9 tanks,
- Employee and visitor parking lots,
- An access road from Kadrmas Rd. and secondary roads within site boundary,
- An approximately 600 square foot water pump house, an approximate 50-foot-diameter fire water tank, and associated buried water pipeline,
- A stormwater retention pond,
- An approximate 20 acre biomass storage area with "Day Bin", typically a concrete slab with cover,
- 0.36 mile long rail spur, and
- An approximate 3 to 3.5 mile long natural gas pipeline.

The Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the Integrated Biofuel Production Enterprise (IBPE) facility, and pursue site permits and environmental compliance, including the National Environmental Policy Act (NEPA) review. Phase 2 will include the detailed engineering, construction and operation of the IBPE facility. Red Rock is proceeding with Phase 1 and is actively designing the project footprint within the project area.

Currently the contractor is validating their proposed technical, economic and regulatory viability assumptions leading to a potential follow-on contract that would execute facility construction and initiate production. The DoD awarded this initial phase to multiple contractors documenting numerous technical and logistical alternatives that will compete for the follow-on contract.

ATTACHMENT 2. Map

(see attached files and note below)

- Red Rock Site Layout showing proposed locations of where utilities will be entering the project site
  - Power, water, and sewer will enter the site along the proposed access road from Kadrmas Rd to the project site
  - The proposed natural gas pipeline will come up from Crane Creek Rd, parallel to the Lake County Rail, and enter the project site at the southwestern border on the north side of the proposed rail spur.

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

FEB 10 2014

MEMORANDUM FOR CHARLOTTE RODRIQUE, CHAIRPERSON
BURNS PAIUTE TRIBES
100 PASIGO
BURNS OR 97720

FROM: AFRL/RX
2977 Hobson Way, Rm 400
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Burns Paiute Tribes in determining if any significance is involved at the proposed site. Our proposed project Area of Potential Effect (APE) is described in the Program Introduction (Attachment 1).

2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial-based maps depicting the Project location are attached for your reference. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts.

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4. Please feel free to call me at (937) 255-2738 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

JOHN W. GLOYSTEIN, Colonel, USAF
Acting Deputy Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program Introduction
2. Maps

cc:
Agnes F. Castronuevo, M.A., Rpa, Cultural Resources
Program Director & Archaeologist

ATTACHMENT 1. Program Introduction

Purpose: The Advanced Drop-In Biofuel Production Project (ADBPP) is a Department of Defense (DoD)-led multi-agency effort to develop a viable commercial-scale Integrated Biofuel Production Enterprise (IBPE). The effort intends to support the establishment of a domestic commercial-scale manufacturing facility that produces aviation and marine diesel biofuels from sustainable biomass feed-stocks. The DoD has indicated intention to purchase drop-in replacement biofuels that meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, and can utilize the existing infrastructure, and are deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts.

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Red Rock is evaluating two alternative locations for the facility (i.e., Alternative 1, approximately 94.6 acres and Alternative 2, approximately 169.1 acres); however, ground disturbance activities will be limited to approximately 40 acres within the larger property footprint. The biofuels facility will be designed to avoid wetlands and all eligible cultural resources. The project involves the following:

- Approximately 3 acres devoted to the processing plant and an administration/maintenance building (various facility components ranges from 30 to 100 feet in height),
- 1 acre tank farm with up to 9 tanks,
- Employee and visitor parking lots,
- An access road from Kadrmas Rd. and secondary roads within site boundary,
- An approximately 600 square foot water pump house, an approximate 50-foot-diameter fire water tank, and associated buried water pipeline,
- A stormwater retention pond,
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- 0.36 mile long rail spur, and
- An approximate 3 to 3.5 mile long natural gas pipeline.

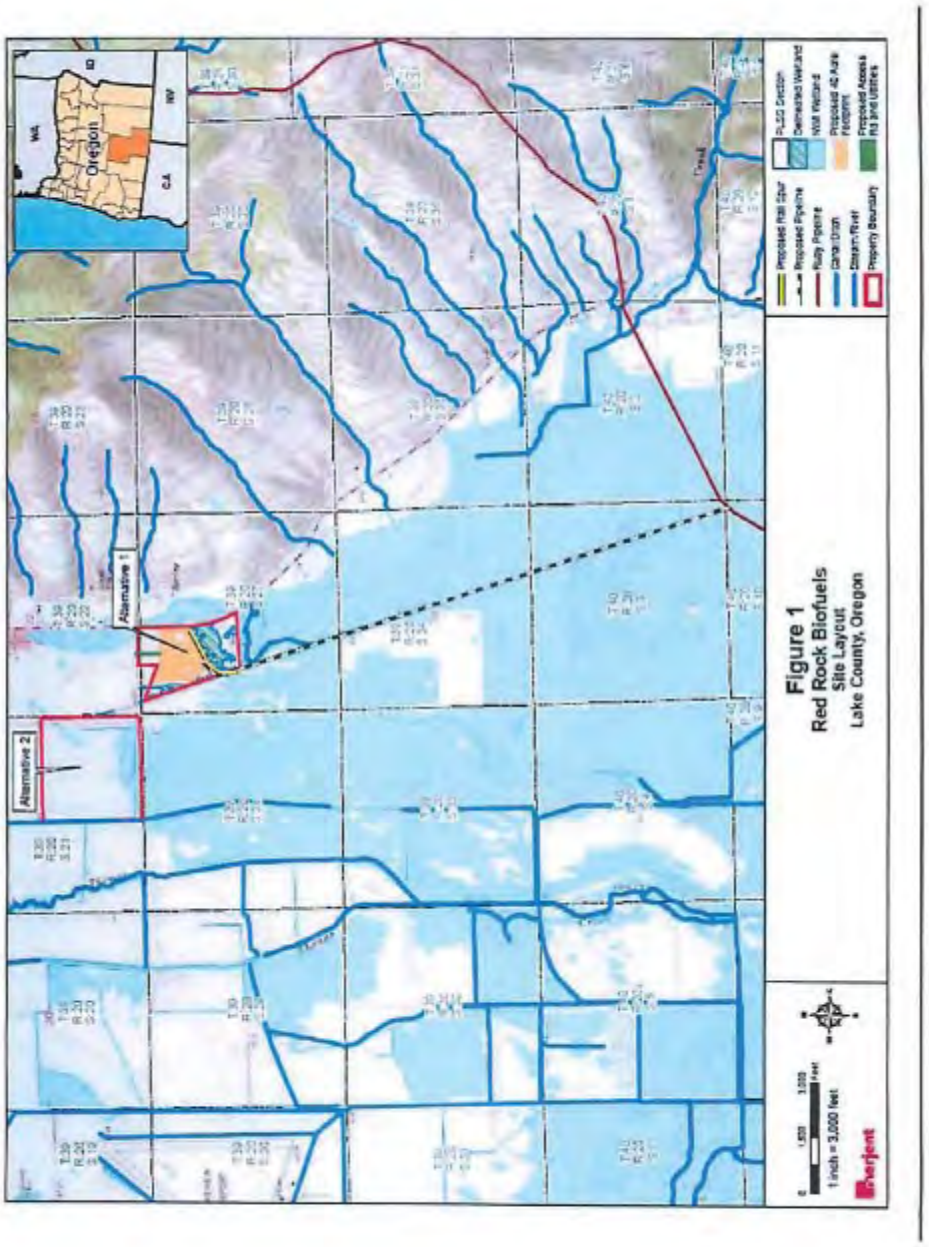
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Figure 1
Red Rock Biofuels
Site Layout
Lake County, Oregon
Alternative 1
Alternative 2
Oregon
WA
ID
NV
CA
Proposed Rail Spur
Proposed Pipeline
Rudy Pipeline
Canal/Drain
Stream/River
Property Boundary
Delineated Wetland
Wet Wetland
Proposed Access Rd and Utilities
1 inch = 3,000 feet
Enerjent

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

FEB 10 2014

MEMORANDUM FOR AUSTIN GREENE, CHIEF
CONFEDERATED TRIBES OF WARM SPRINGS
1233 VETERANS STREET
WARM SPRINGS OR 97761

FROM: AFRL/RX
2977 Hobson Way, Rm 409
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Confederated Tribes of Warm Springs in determining if any significance is involved at the proposed site. Our proposed project Area of Potential Effect (APE) is described in the Program Introduction (Attachment 1).

2. The potential ADBPP facility site is located on private land directly south of the town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial-based maps depicting the Project location are attached for your reference. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts.

3. Because the information we seek is technical in nature, I propose that members of our staffs handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, is coordinating the AFRL Environmental Assessment to ensure that the tribe's comments and concerns are addressed. Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390, is the Government Project Manager. When this assessment is available for public comment, we will provide a copy for Tribal review and comments.

4. Please feel free to call me at (937) 255-4726 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

JOHN W. GLOYSTEIN, Colonel, USAF
Acting Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program Introduction
2. Maps

cc:
Robert Brunoe, Manager Natural Resources

ATTACHMENT 1. Program Introduction

Purpose: The Advanced Drop-In Biofuel Production Project (ADBPP) is a Department of Defense (DoD)-led multi-agency effort to develop a viable commercial-scale Integrated Biofuel Production Enterprise (IBPE). The effort intends to support the establishment of a domestic commercial-scale manufacturing facility that produces aviation and marine diesel biofuels from sustainable biomass feed-stocks. The DoD has indicated intention to purchase drop-in replacement biofuels that meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, and can utilize the existing infrastructure, and are deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts.

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- A stormwater retention pond,
- An approximate 20 acre biomass storage area with "Day Bin", typically a concrete slab with cover,
- 0.36 mile long rail spur, and
- An approximate 3 to 3.5 mile long natural gas pipeline.

The Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the Integrated Biofuel Production Enterprise (IBPE) facility, and pursue site permits and environmental compliance, including the National Environmental Policy Act (NEPA) review. Phase 2 will include the detailed engineering, construction and operation of the IBPE facility. Red Rock is proceeding with Phase 1 and is actively designing the project footprint within the project area.

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

FEB 1 0 2014

MEMORANDUM FOR BERNOLD POLLARD, CHAIRMAN
FORT BIDWELL INDIAN COMMUNITY OF THE FORT BIDWELL RESERVATION OF CALIFORNIA
PO BOX 129
FORT BIDWELL CA 96112

FROM: AFRL/RX
2977 Hobson Way, Rm 400
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Fort Bidwell Indian Community of the Fort Bidwell Reservation of California in determining if any significance is involved at the proposed site. Our proposed project Area of Potential Effect (APE) is described in the Program Introduction (Attachment 1).

2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial-based maps depicting the Project location are attached for your reference. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts.

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JOHN W. GLOYSTEIN, Colonel, USAF
Acting Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program Introduction
2. Maps

cc:
Ms. Loyette Meza, Cultural Committee Lead

ATTACHMENT 1. Program Introduction

Purpose: The Advanced Drop-In Biofuel Production Project (ADBPP) is a Department of Defense (DoD)-led multi-agency effort to develop a viable commercial-scale Integrated Biofuel Production Enterprise (IBPE). The effort intends to support the establishment of a domestic commercial-scale manufacturing facility that produces aviation and marine diesel biofuels from sustainable biomass feed-stocks. The DoD has indicated intention to purchase drop-in replacement biofuels that meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, and can utilize the existing infrastructure, and are deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts.

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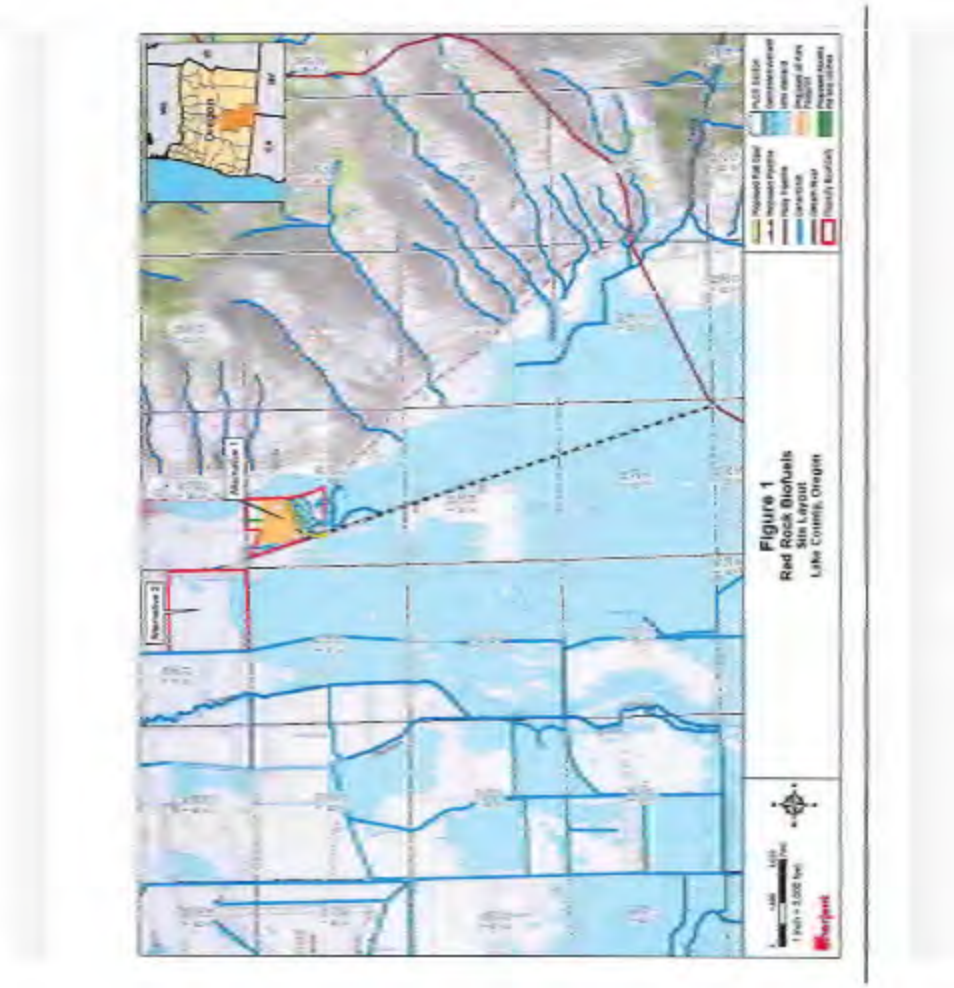
The Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the Integrated Biofuel Production Enterprise (IBPE) facility, and pursue site permits and environmental compliance, including the National Environmental Policy Act (NEPA) review. Phase 2 will include the detailed engineering, construction and operation of the IBPE facility. Red Rock is proceeding with Phase 1 and is actively designing the project footprint within the project area.

Currently the contractor is validating their proposed technical, economic and regulatory viability assumptions leading to a potential follow-on contract that would execute facility construction and initiate production. The DoD awarded this initial phase to multiple contractors documenting numerous technical and logistical alternatives that will compete for the follow-on contract.

ATTACHMENT 2. Map

(see attached files and note below)

- Red Rock Site Layout showing proposed locations of where utilities will be entering the project site
  - Power, water, and sewer will enter the site along the proposed access road from Kadrmas Rd to the project site
  - The proposed natural gas pipeline will come up from Crane Creek Rd, parallel to the Lake County Rail, and enter the project site at the southwestern border on the north side of the proposed rail spur.


Figure 1
Red Rock Biofuels
Site Layout
Lake County, Oregon
Alternative 1
Alternative 2
Oregon

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

FEB 10 2014

MEMORANDUM FOR D. GENTRY CHAIRMAN
KLAMATH TRIBES
PO BOX 436
CHILOQUIN OR 97624

FROM: AFRL/RX
2977 Hobson Way, Rm 400
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the Lake County, Oregon. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Klamath Tribes in determining if any significance is involved at the proposed site. Our proposed project Area of Potential Effect (APE) is described in the Program Introduction (Attachment 1).

2. The potential ADBPP facility site is located on private land directly south of the Town of Lakeview, Oregon in Sections 21, 22, 27 and 34, Township 39S, Range 20E between Highway 395 and the Lake County Railroad and Section 3, Township 40S, Range 20E, parallel to the existing Lake County Railroad. Red Rock is evaluating two alternative locations for the facility; however, the preferred location (i.e., Alternate Site 1) is situated within Section 27, Township 39S, Range 20E. Aerial-based maps depicting the Project location are attached for your reference. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts.

3. Because the information we seek is technical in nature, I propose that members of our staffs handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, is coordinating the AFRL Environmental Assessment to ensure that the tribe's comments and concerns are addressed. Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390, is the Government Project Manager. When this assessment is available for public comment, we will provide a copy for Tribal review and comments.

4. Please feel free to call me at (937) 255-4726 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

JOHN W. GLOYSTEIN, Colonel, USAF
Acting Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program Introduction
2. Maps

cc:
Perry Chocktoot, Jr., Director

ATTACHMENT 1. Program Introduction

Purpose: The Advanced Drop-In Biofuel Production Project (ADBPP) is a Department of Defense (DoD)-led multi-agency effort to develop a viable commercial-scale Integrated Biofuel Production Enterprise (IBPE). The effort intends to support the establishment of a domestic commercial-scale manufacturing facility that produces aviation and marine diesel biofuels from sustainable biomass feed-stocks. The DoD has indicated intention to purchase drop-in replacement biofuels that meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, and can utilize the existing infrastructure, and are deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts.

Red Rock Biofuels LLC (Red Rock), a subsidiary of IR1 Group LLC, proposes to construct a new biofuel facility that will produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock at a site located in Lakeview, Lake County, Oregon. This project is referred to as the Red Rock Biofuels Project (Project). Annually, the plant will gasify approximately 500 short tons per day of feedstock on a dry basis using gasification technology and will produce annually approximately 7.17 million gallons (MMgal) jet fuel, 7.17 MMgal diesel, and 1.55 MMgal naphtha. The project activities will include the construction of a new plant and associated infrastructure and implementation of a sustainable biomass harvesting program (Figure 1).

Red Rock is evaluating two alternative locations for the facility (i.e., Alternative 1, approximately 94.6 acres and Alternative 2, approximately 169.1 acres); however, ground disturbance activities will be limited to approximately 40 acres within the larger property footprint. The biofuels facility will be designed to avoid wetlands and all eligible cultural resources. The project involves the following:

- Approximately 3 acres devoted to the processing plant and an administration/maintenance building (various facility components ranges from 30 to 100 feet in height),
- 1 acre tank farm with up to 9 tanks,
- Employee and visitor parking lots,
- An access road from Kadrmas Rd. and secondary roads within site boundary,
- An approximately 600 square foot water pump house, an approximate 50-foot-diameter fire water tank, and associated buried water pipeline,
- A stormwater retention pond,
- An approximate 20 acre biomass storage area with "Day Bin", typically a concrete slab with cover,
- 0.36 mile long rail spur, and
- An approximate 3 to 3.5 mile long natural gas pipeline.

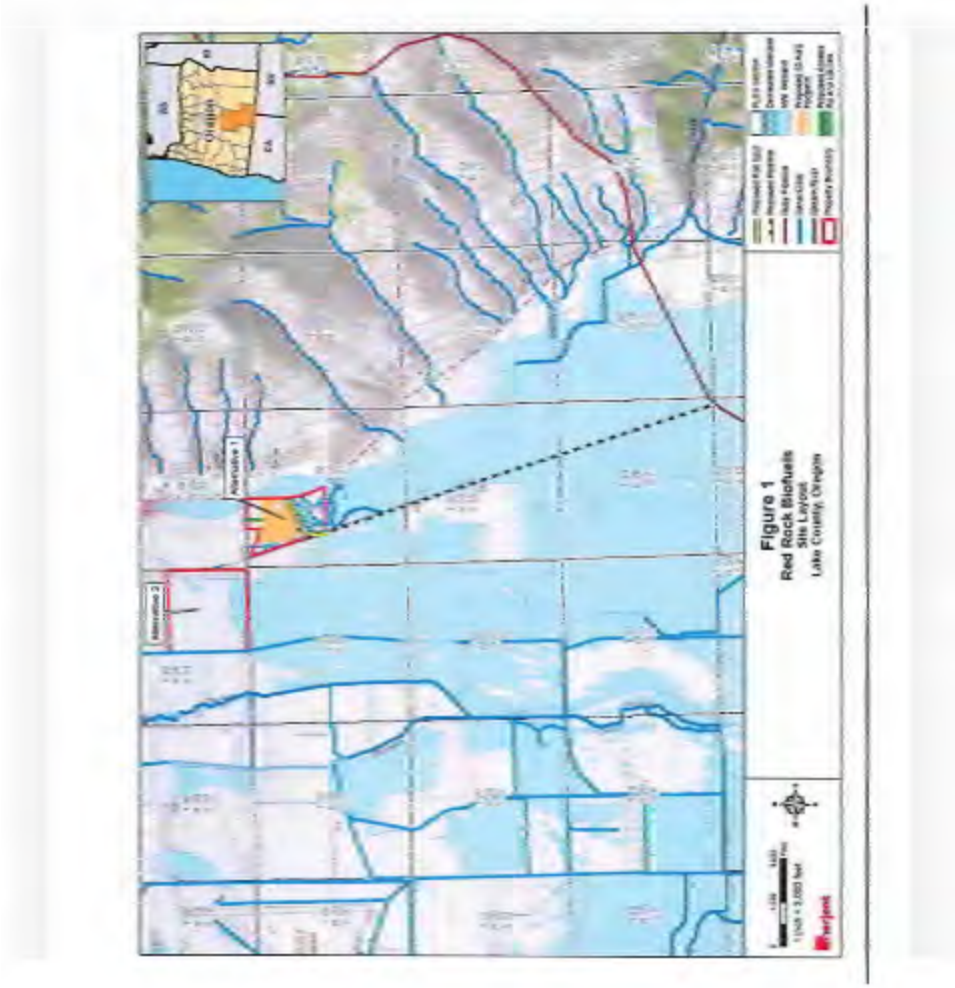
The Project has been divided into two phases. The purpose of the first phase is to conduct preliminary engineering of the Integrated Biofuel Production Enterprise (IBPE) facility, and pursue site permits and environmental compliance, including the National Environmental Policy Act (NEPA) review. Phase 2 will include the detailed engineering, construction and operation of the IBPE facility. Red Rock is proceeding with Phase 1 and is actively designing the project footprint within the project area.

Currently the contractor is validating their proposed technical, economic and regulatory viability assumptions leading to a potential follow-on contract that would execute facility construction and initiate production. The DoD awarded this initial phase to multiple contractors documenting numerous technical and logistical alternatives that will compete for the follow-on contract.

ATTACHMENT 2. Map

(see attached files and note below)

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Figure 1
Red Rock Biofuels
Site Layout
Lake County, Oregon
Alternative 1
Alternative 2
Oregon
Project

Oregon
John A. Kitzhaber, MD, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

State Land Board

John A. Kitzhaber, MD
Governor

Kate Brown
Secretary of State

Ted Wheeler
State Treasurer

February 22, 2013

Ray Simms
Town of Lakeview
525 North 1st Street
Lakeview, OR 97630

Re: Wetland Delineation Report for Lakeview Geothermal, Lake County; T39S R20E Sections 15, 22, 27, Multiple Tax Lots and Right-of-Ways; WD #2012-0274; App. #52256

Dear Mr. Simms:

The Department of State Lands has reviewed the wetland delineation report prepared by Rabe Consulting for the site referenced above. Please note that the study area includes only a portion of some of the tax lots in the study area. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 6 of the report (total of 12 map sheets). Please replace all copies of the preliminary wetland map with this final Department-approved map. Within the study area, eight wetlands (totaling approximately 20.28 acres) and Deadman's Creek were identified. The creek and all wetlands except Wetland 2 are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity, or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5300 if you have any questions.

Sincerely,

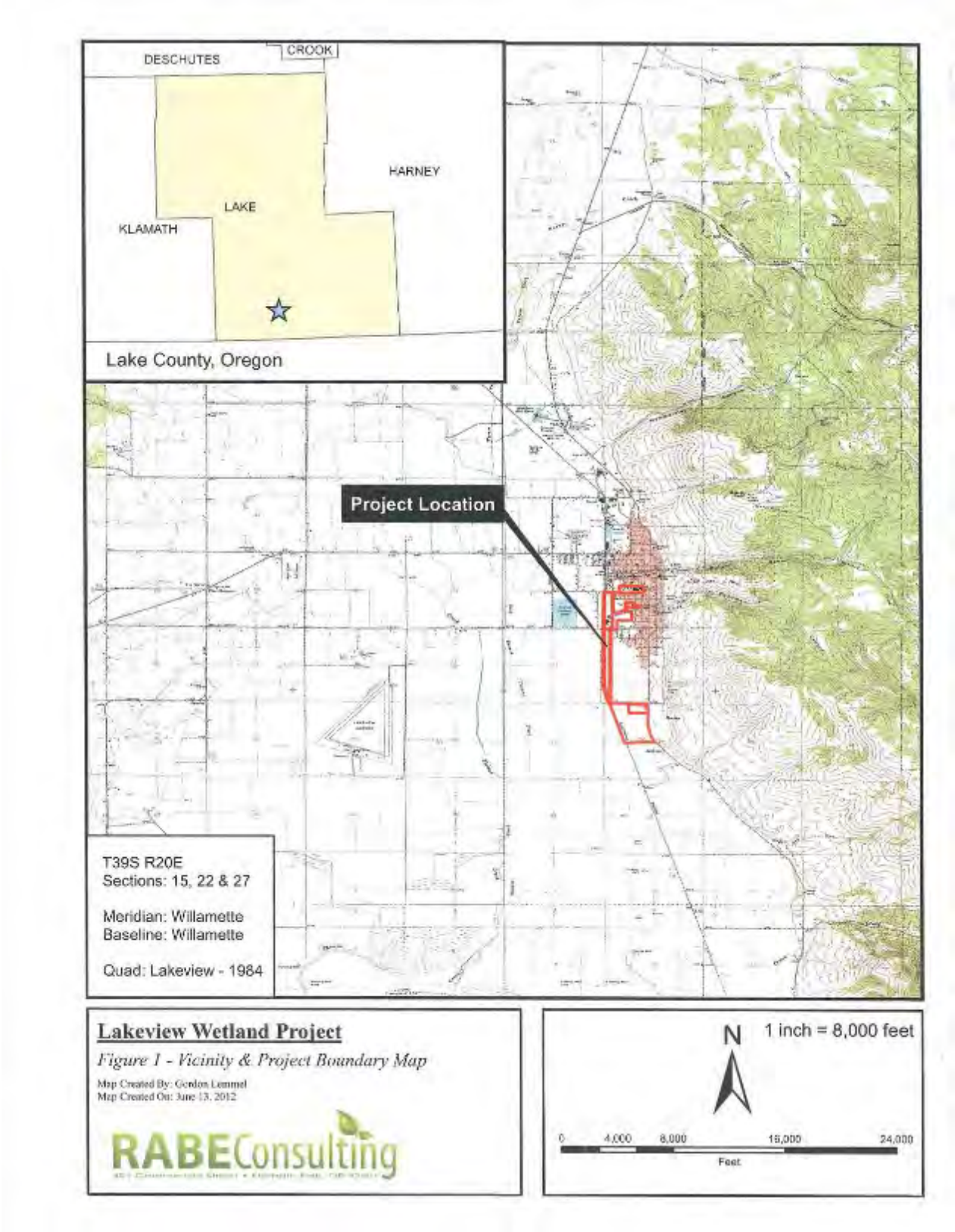
Approved by

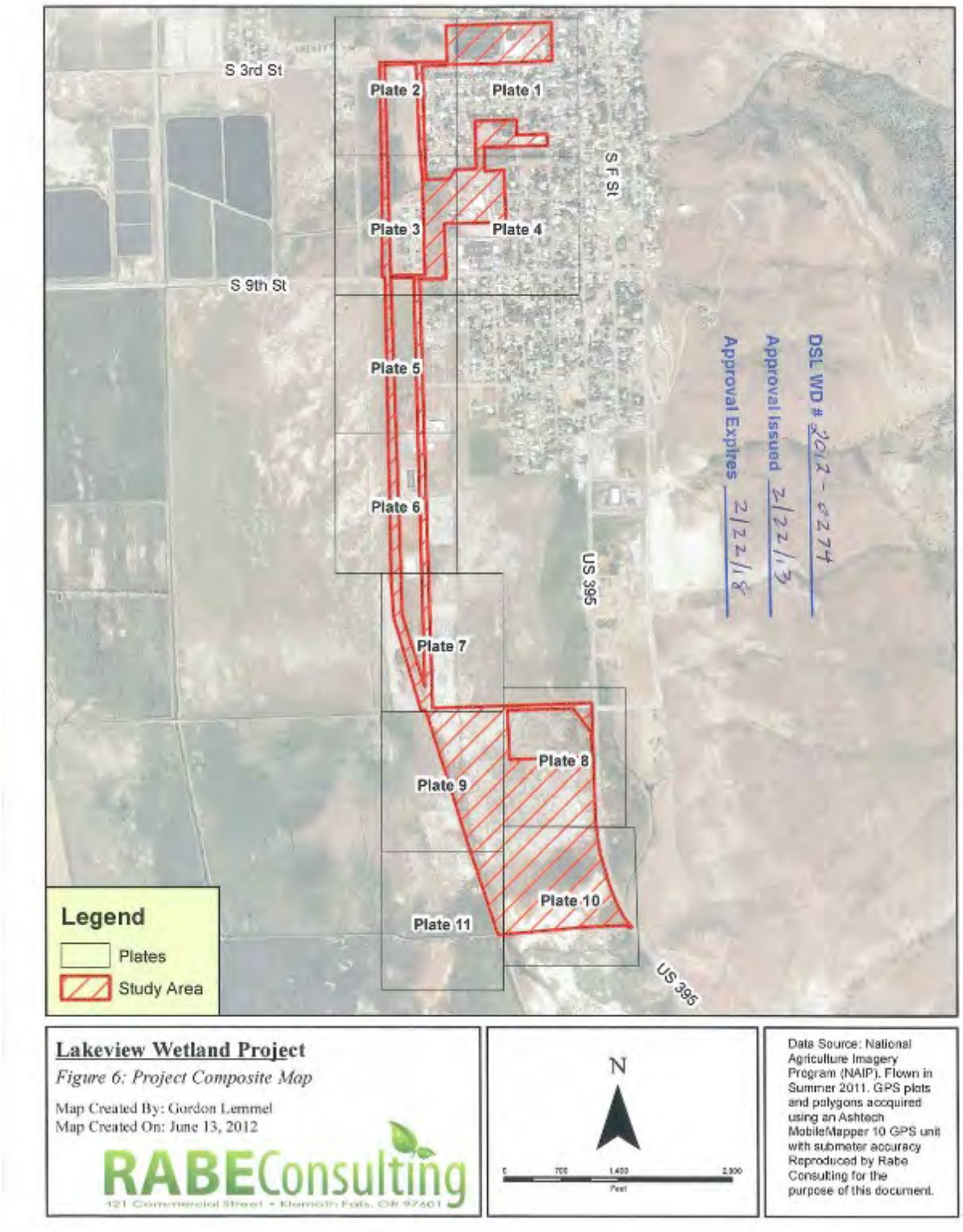
Lynne McAllister
Wetland Specialist

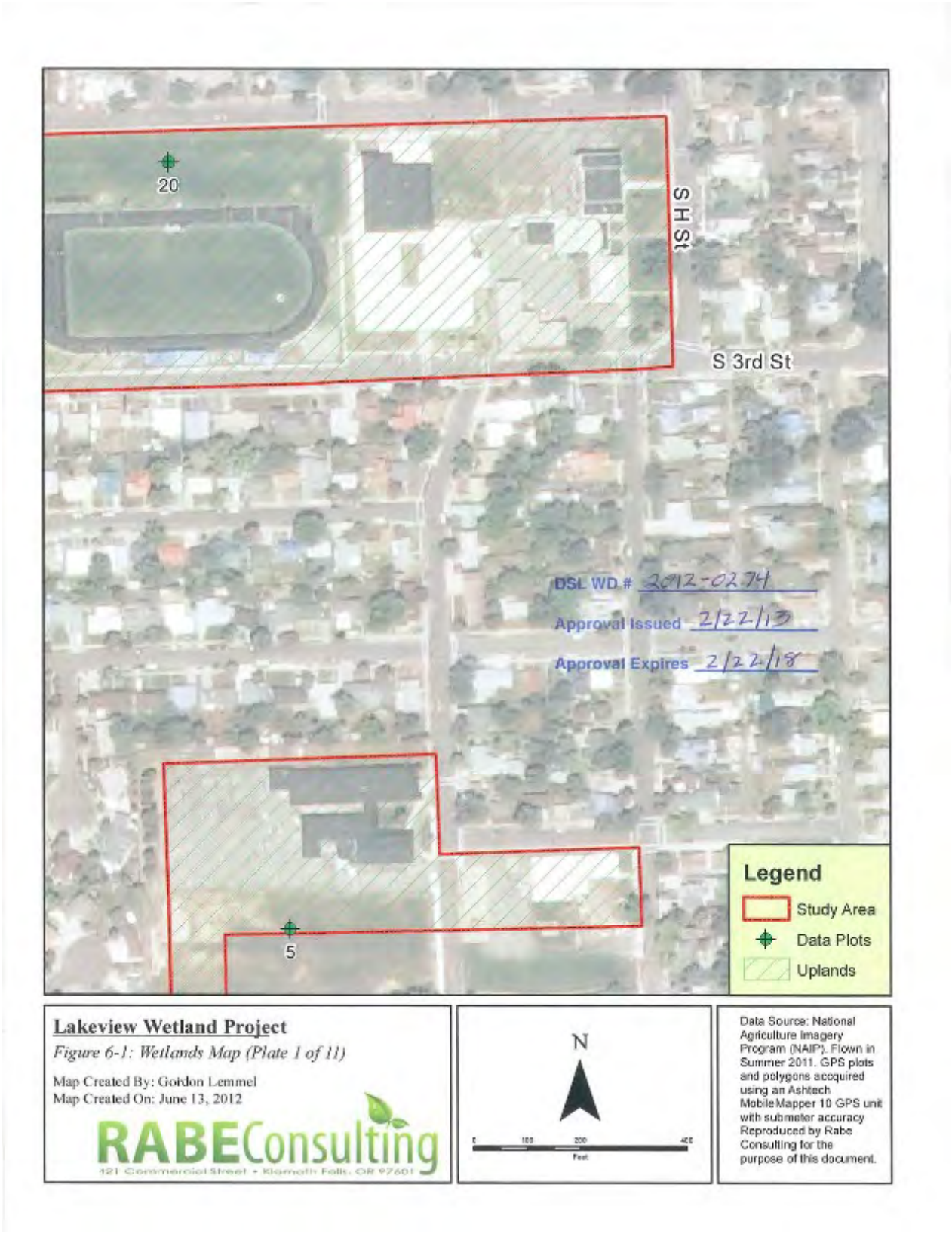
Anna Buckley
Wetlands Program Manager

Enclosures

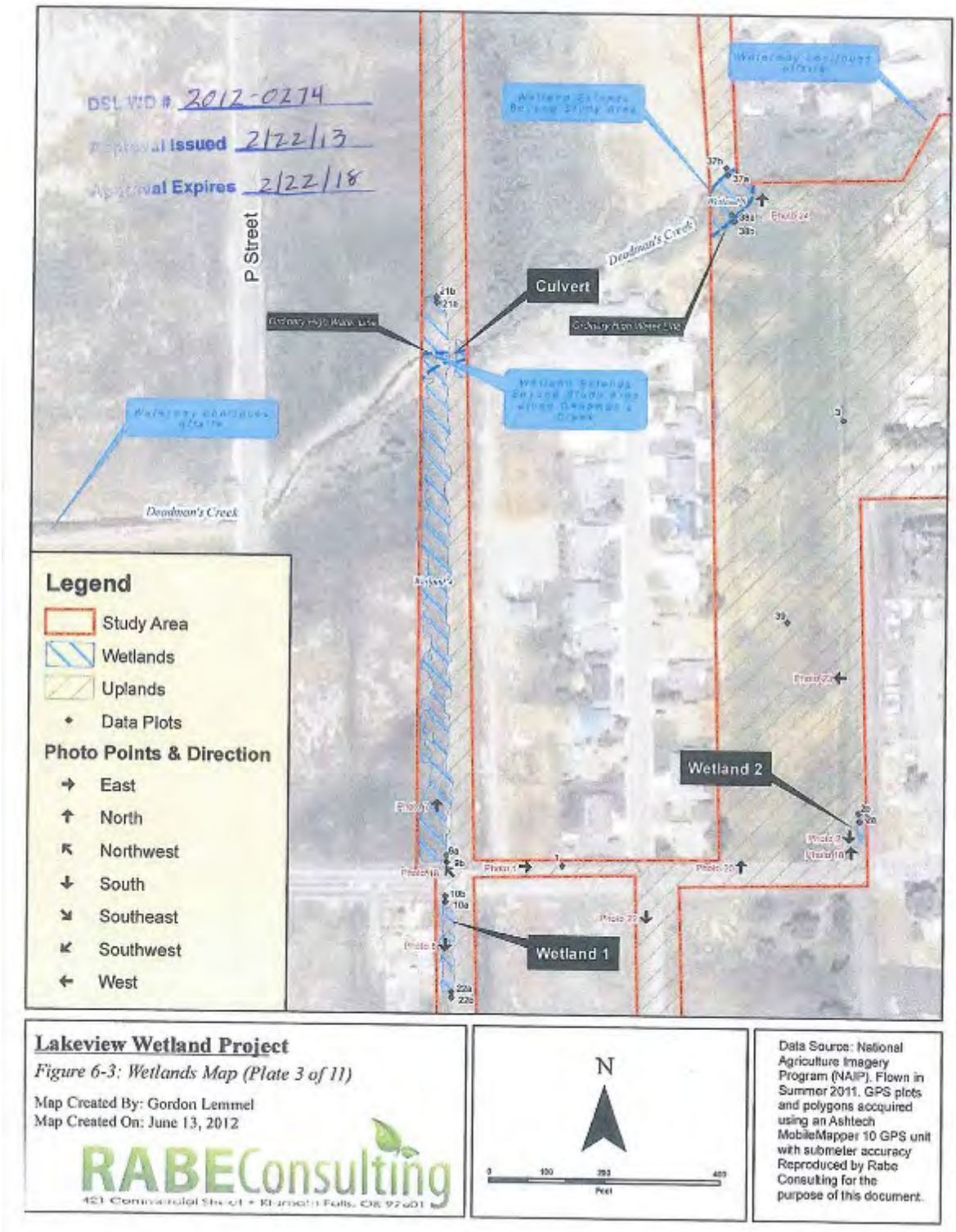
ec: Andrea Rabe, Rabe Consulting
Lakeview Planning Department
Carol Franson, Corps of Engineers, Eugene office
Bethany Harrington, DSL


DESCHUTES
CROOK
HARNEY
LAKE
KLAMATH
Lake County, Oregon
Project Location
T39S R20E
Sections: 15, 22 & 27
Meridian: Willamette
Baseline: Willamette
Quad: Lakeview - 1984
Lakeview Wetland Project
Figure 1 - Vicinity & Project Boundary Map
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
N
1 inch = 8,000 feet
0
4,000
8,000
16,000
24,000
Feet


S 3rd St
S 9th St
S F St
US 395
US 395
Plate 1
Plate 2
Plate 3
Plate 4
Plate 5
Plate 6
Plate 7
Plate 8
Plate 9
Plate 10
Plate 11
DSL WD # 2012 - 0274
Approval Issued 2/22/13
Approval Expires 2/22/18
Legend
Plates
Study Area
Lakeview Wetland Project
Figure 6: Project Composite Map
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
0
700
1,400
2,800
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


20
S H St
S 3rd St
DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
5
Legend
Study Area
Data Plots
Uplands
Lakeview Wetland Project
Figure 6-1: Wetlands Map (Plate 1 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
0 100 200 400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
S 3rd St
6
7
8
36
Photo 4
Photo 5
Photo 6
Photo 15
Photo 26
Photo 35
Legend
Study Area
Uplands
Data Plots
Photo Points & Direction
East
North
Northwest
South
Southeast
Southwest
West
Lakeview Wetland Project
Figure 6-2: Wetlands Map (Plate 2 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
0
100
200
400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
P Street
Deadman's Creek
Culvert
Wetland 2
Wetland 1
Legend
Study Area
Wetlands
Uplands
Data Plots
Photo Points & Direction
East
North
Northwest
South
Southeast
Southwest
West
Lakeview Wetland Project
Figure 6-3: Wetlands Map (Plate 3 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
N
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


Waterway continues offsite
Waterway continues offsite
Wetland 5
(Wetland Extends Beyond Study Area along Deadman's Creek)
Legend
Study Area
Wetlands
Uplands
Data Plots
Photo Points & Direction
East
North
Northwest
South
Southeast
Southwest
West
DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
Lakeview Wetland Project
Figure 6-4: Wetlands Map (Plate 4 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
521 Commercial Street • Klamath Falls, OR 97601
N
0
100
200
400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.

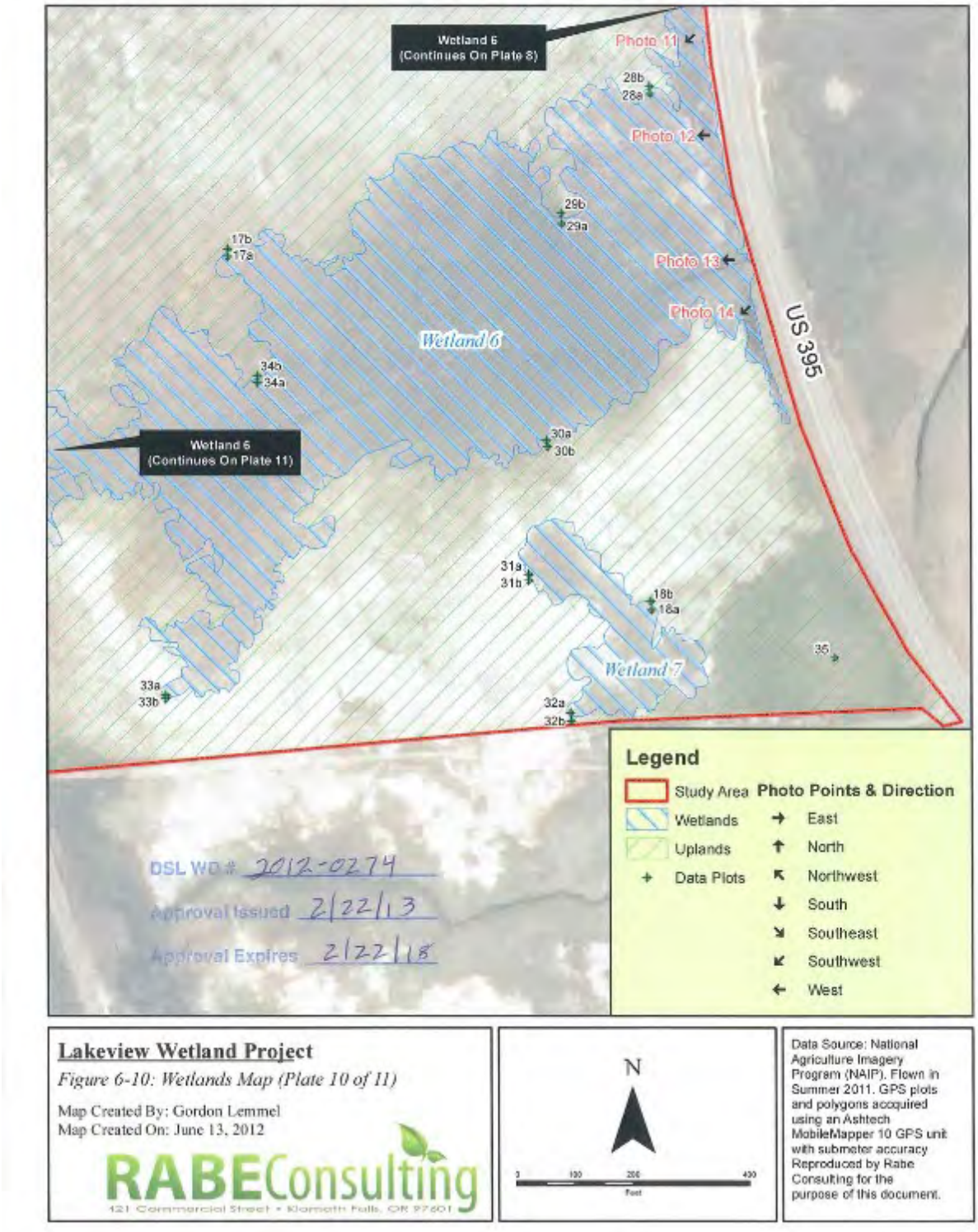

DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
15
40
Photo 21
Legend
Study Area
Uplands
Data Plots
Photo Points & Direction
East
North
Northwest
South
Southeast
Southwest
West
Lakeview Wetland Project
Figure 6-5: Wetlands Map (Plate 5 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.

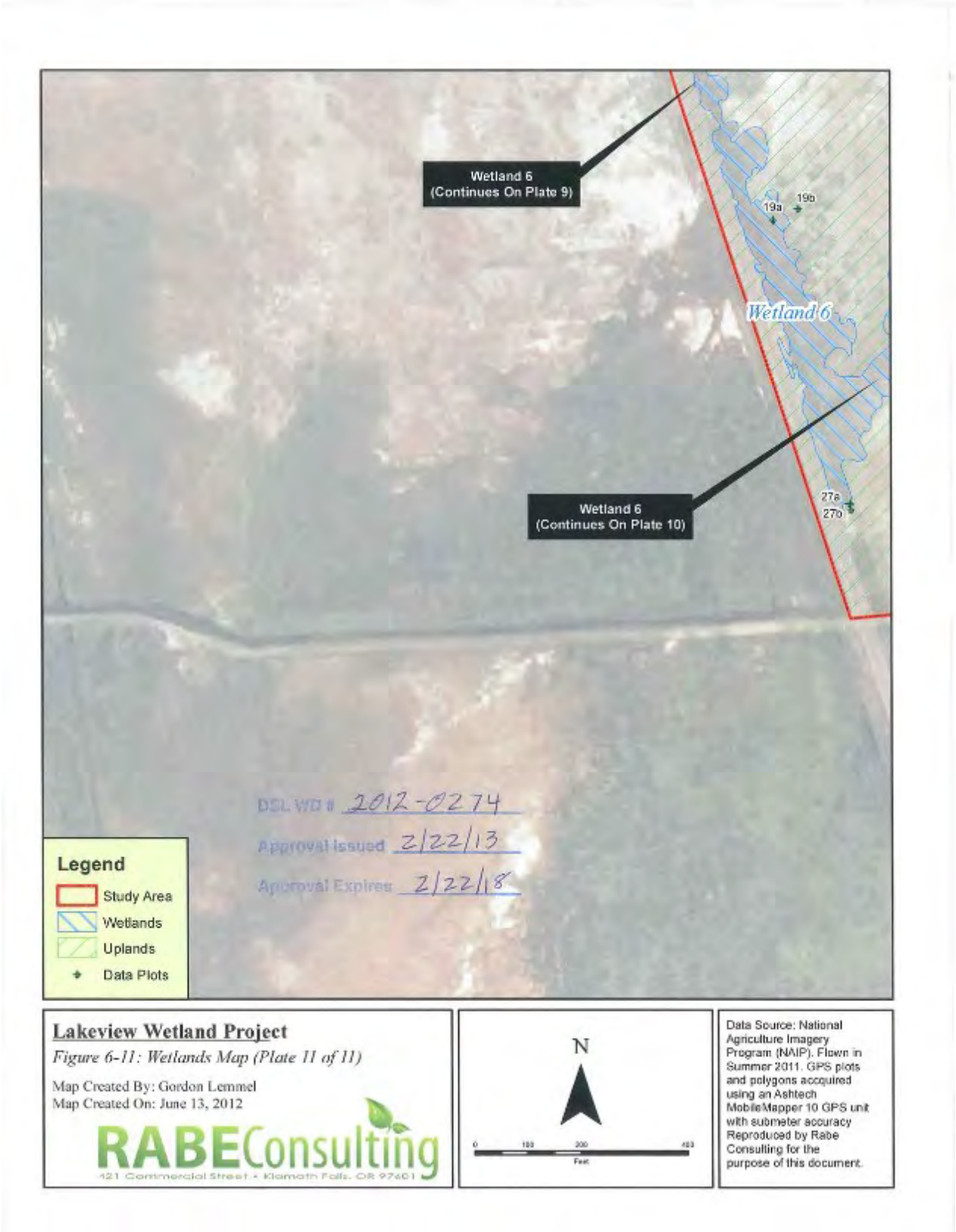

DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
16
41
Legend
Study Area
Uplands
Data Plots
Photo Points & Direction
East
North
Northwest
South
Southeast
Southwest
West
Lakeview Wetland Project
Figure 6-6: Wetlands Map (Plate 6 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
0
100
200
400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


Legend
Study Area
Wetlands
Uplands
Data Plots
Photo Points & Direction
East
North
Northwest
South
Southeast
Southwest
West
Wetland 3
12b
12a
Photo 9
Photo 10
23a
23b
DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
Wetland 6
(Continues On Plate 9)
Kadrmas Rd
Lakeview Wetland Project
Figure 6-7: Wetlands Map (Plate 7 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
0
100
200
400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy
Reproduced by Rabe Consulting for the purpose of this document.


Legend
Study Area
Wetlands
Uplands
Data Plots
Kadrmas Rd
24
US 395
DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
Wetland 6
(Continues On Plate 10)
14b
14a
Lakeview Wetland Project
Figure 6-8: Wetlands Map (Plate 8 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
0
100
200
400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


Wetland 6
(Continues On Plate 7)
13b
13a
25b
25a
11b
11a
Wetland 6
DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
26b 28a
Legend
Study Area
Wetlands
Uplands
Data Plots
Wetland 6
(Continues On Plate 11)
Lakeview Wetland Project
Figure 6-9: Wetlands Map (Plate 9 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
121 Commercial Street • Klamath Falls, OR 97601
N
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


Wetland 6
(Continues On Plate 8)
Photo 11
28b
28a
Photo 12
29b
29a
17b
17a
Photo 13
Photo 14
US 395
Wetland 6
34b
34a
Wetland 6
(Continues On Plate 11)
30a
30b
31a
31b
18b
18a
35
Wetland 7
33a
33b
32a
32b
DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
Legend
Study Area
Wetlands
Uplands
Data Plots
Photo Points & Direction
East
North
Northwest
South
Southeast
Southwest
West
Lakeview Wetland Project
Figure 6-10: Wetlands Map (Plate 10 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
121 Commercial Street • Klamath Falls, OR 97601
N
0
100
200
400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.


Wetland 6
(Continues On Plate 9)
19a
19b
Wetland 6
Wetland 6
(Continues On Plate 10)
27a
27b
DSL WD # 2012-0274
Approval Issued 2/22/13
Approval Expires 2/22/18
Legend
Study Area
Wetlands
Uplands
Data Plots
Lakeview Wetland Project
Figure 6-11: Wetlands Map (Plate 11 of 11)
Map Created By: Gordon Lemmel
Map Created On: June 13, 2012
RABEConsulting
421 Commercial Street • Klamath Falls, OR 97601
N
0
100
200
400
Feet
Data Source: National Agriculture Imagery Program (NAIP). Flown in Summer 2011. GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy Reproduced by Rabe Consulting for the purpose of this document.

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** Make the check payable to the Oregon Department of State Lands. To pay the fee by credit card, call 503-986-5200

☐ Applicant ☒ Owner Name, Firm and Address: **Ray Simms, Manager** **Town of Lakeview, 525 North 1st Street** **Lakeview, Oregon 97630**	Business phone # Mobile phone # (optional) FAX # E-mail: **lakeviewtownmanager@yahoo.com**
☐ Authorized Legal Agent, Name and Address:	Business phone # FAX # Mobile phone # E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: **Ray Simms** Signature: [redacted]

Date: **6/24/2012** Special instructions regarding site access: **Please contact consultant prior to access.**

Project and Site Information (for latitude & longitude, use centroid of site or start & end points of linear project)

Project Name: **Lakeview Geothermal**	Latitude: **42.185785**	Longitude: **-120.356257**
Proposed Use: **Geothermal well, injection well and delivery pipeline installation**	Tax Map #	
Project Street Address (or other descriptive location): **Linear through Town of Lakeview**	Township **39s** Range **20E** Section **15,22,27** QQ Tax Lot (s)	
City: **Lakeview** County: **Lake**	Waterway: **Deadman's Creek** River Mile: NWI Quad(s): **Lakeview**	

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: **Andrea Rabe, Rabe Consulting** **421 Commercial Street** Klamath Falls, OR 97601	Phone # **541-891-2137** Mobile phone # FAX # E-mail: **andrea@rabeconsulting.com**

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: [redacted] Date: **6/24/2012**

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No Study Area size: **141.26ac** Total Wetland Acreage: **20.16ac**

Check Box Below If Applicable:

- ☐ R-F permit application submitted
- ☐ Mitigation bank site
- ☐ Wetland restoration/enhancement project (not mitigation)
- ☐ Industrial Land Certification Program Site

Fees:

- ☒ Fee payment submitted **$ 378**
- ☐ Fee ($100) for resubmittal of rejected report

Name of Payor: **Rabe Consulting**

Other Information:

	Y	N	
Has previous delineation/application been made on parcel?	☐	☒	If known, previous DSL #
Does LWI, if any, show wetland or waters on parcel?	☐	☐	

For Office Use Only

DSL Reviewer: LM Fee Paid Date: 7 / 6 / 12 DSL WD # 2012-0274

Date Delineation Received: 7 / 6 / 12 DSL Project # _____ DSL Site # _____

Scanned: ☒ Final Scan: ☐ DSL WN # _____ DSL App. # 52256

Form Updated 6/18/2012

7-13-12

Lynne,
I don't see a date-stamp on this report. I'm going by the date Fiscal used (7/6/12). Stella put this report in my box yesterday (7-12-12).

Heather

Oregon
John A. Kitzhaber, MD, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us

State Land Board

John A. Kitzhaber, MD
Governor

Kate Brown
Secretary of State

Ted Wheeler
State Treasurer

February 3, 2015

Jeff Manternach, CFO
Red Rock Biofuels, LLC
736 Whalers Way, Building G, Suite 100
Fort Collins, CO 80525

Re: WD #2014-0503 Wetland Delineation Report for Red Rock Biofuel Lakeview Plant; Lake County; T39S R20E Sec. 27 and Sec. 22, Tax Lot 4900

Dear Mr. Manternach:

The Department of State Lands has reviewed the wetland delineation report prepared by Rabe Consulting for the site referenced above. Please note that the study area includes only a portion of the tax lot described above (see the attached map). Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 6b of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map. Within the study area, one wetland (totaling approximately 0.74 acres) was identified.

The wetland is subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland. This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a

determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5300 if you have any questions.

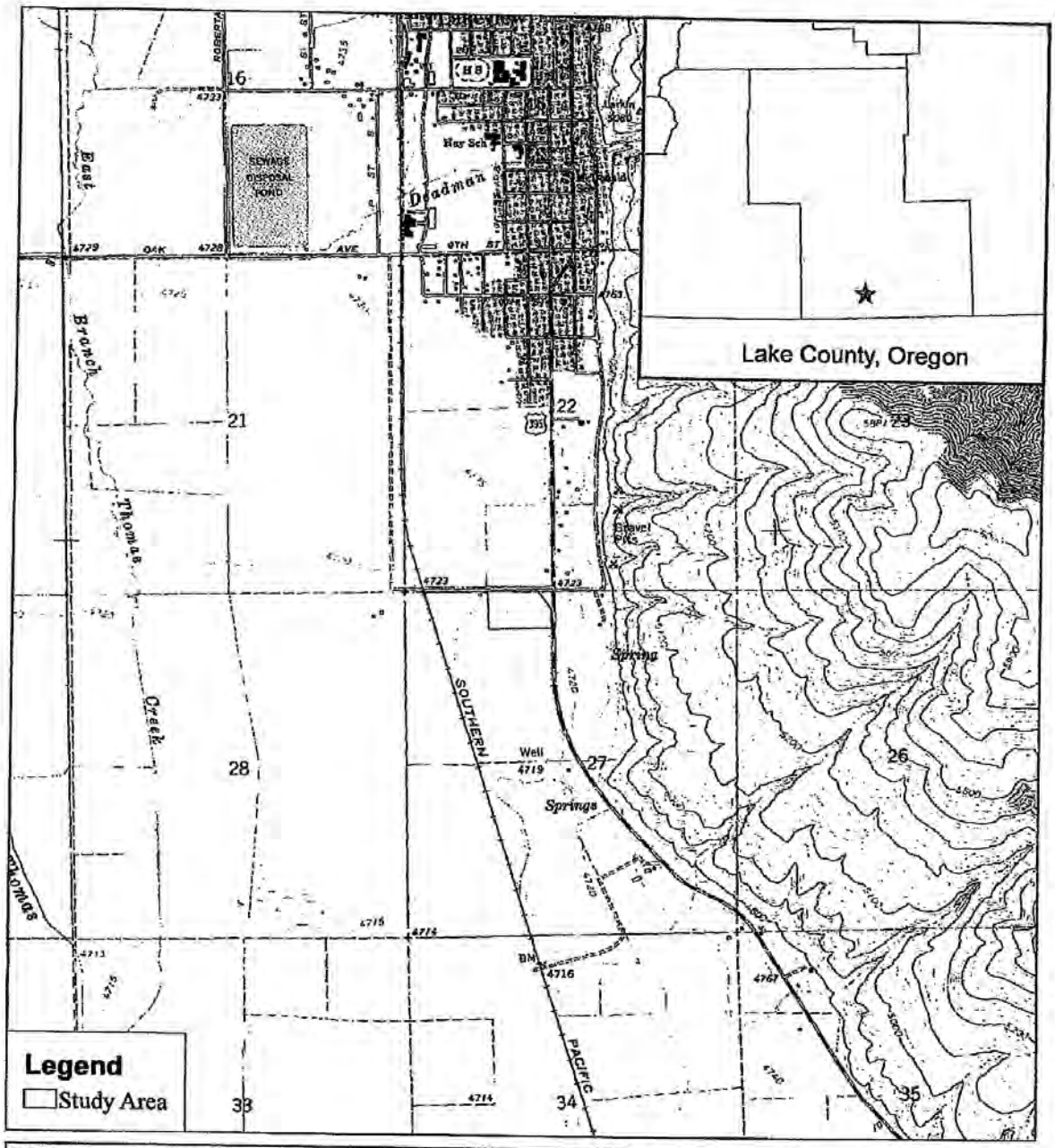
Sincerely,

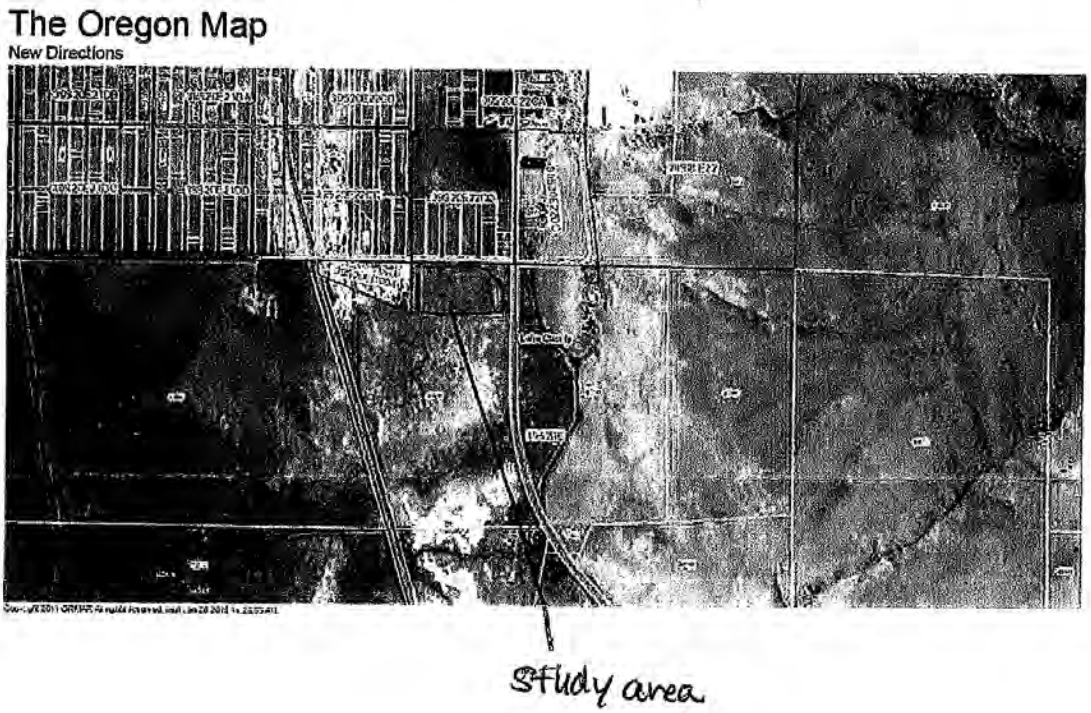
Lynne McAllister
Jurisdiction Coordinator

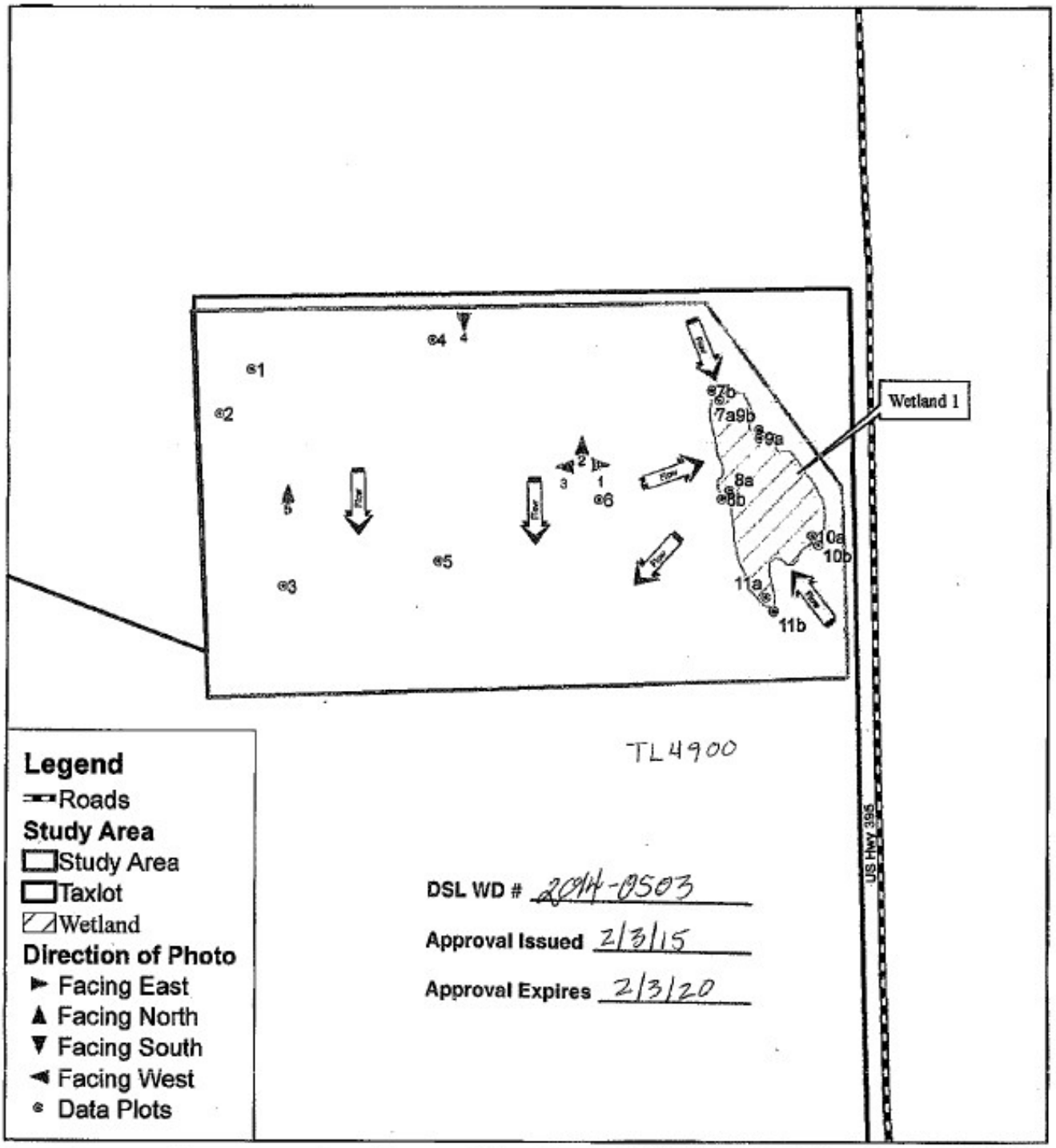
Approved by
Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: Andrea Rabe, Rabe Consulting
Lake County Planning Department
Omar Ortiz, Corps of Engineers
Bethany Harrington, DSL
Kirk Jarvie, DSL


Lake County, Oregon
Legend
Study Area
Kadramas Corner Delineation
Figure 1: Location Map
Map Created By: Sarah Kutz
Map Created On: August 1, 2014
Rabe Consulting
N
1 inch = 2,000 feet
0 750 1,500 3,000
Feet
Data Source: U.S. Geological Survey (USGS) 7.5-minute quadrangle map. Reproduced by Rabe Consulting for the purpose of this document.
East Branch
Thomas Creek
Deadman
SOUTHERN PACIFIC
Springs
Well 4719
SEWAGE DISPOSAL POND
OAK AVE
9TH ST
ROBERTA
Hay Sch
Gravel Pits
BM 4716
16
21
22
23
26
27
28
33
34
35


The Oregon Map
New Directions
Study area


Wetland 1
TL4900
US Hwy 395
DSL WD # 2014-0503
Approval Issued 2/3/15
Approval Expires 2/3/20
Legend
Roads
Study Area
Study Area
Taxlot
Wetland
Direction of Photo
Facing East
Facing North
Facing South
Facing West
Data Plots
Kadrmas Corner Delineation
Figure 6b: Wetland Delineation
No Culverts or Ditches in Study Area
Map Created By: Sarah Kutz
Map Created On: August 1, 2014
updated January 16, 2015
Rabe Consulting
N
0
210
420
Feet
Data Source: GPS plots and polygons acquired using an Ashtech MobileMapper 10 GPS unit with submeter accuracy
Reproduced by Rabe Consulting for the purpose of this document.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, PORTLAND DISTRICT
EUGENE FIELD OFFICE
211 EAST 7TH AVENUE SUITE 105
EUGENE OR 97401-2722

REPLY TO
ATTENTION OF:

May 19, 2015

Operations Division
Regulatory Branch
Corps No. NWP-2014-463

Mr. Jeff Manternach
Red Rock Biofuels LLC
736 Whalers Way, Building G, Suite 100
Fort Collins, Colorado 80525

Dear Mr. Manternach:

The U.S. Army Corps of Engineers (Corps) has received your request for our concurrence with your wetland delineation of potentially jurisdictional waters located Kadrmas Road and U.S. Highway 395, in Lakeview, Lake County, Oregon (Section 22 & 27, Township 39 South, Range 20 East). Your delineation has been assigned Corps No. 2014-463. Please refer to this number in all correspondence.

The Corps has jurisdiction over water bodies under the authorities provided in the Rivers and Harbors Act of 1899 (RHA) and the Clean Water Act (CWA).

Under Section 404 of the Clean Water Act, the Corps has authority to issue permits for the placement of dredged or fill material into waters of the United States. The term "waters of the United States" includes the territorial seas and tidally influenced waters. Limits of jurisdiction under Section 404 extend landward to the high tide line. "Waters" also include all other waters that are part of a surface tributary system to and including navigable (non-tidal) waters of the United States. Limits of jurisdiction extend landward up to the ordinary high water mark. Wetlands adjacent to these waters are also "waters of the United States."

The wetland delineation report entitled Kadrmas Corner Wetland Delineation, prepared by Rabe Consulting, dated August 1, 2014 and revised January 20, 2015 delineated approximately 0.738 acres of wetland(s) on the subject property. The Corps concurs with the boundaries and extent of these potential waters of the United States as shown in Figure(s) 6a & 6b (Enclosure 1). If you propose to discharge fill or dredged material into waters of the United States as shown in Enclosure 1, a Department of the Army permit may be required under Section 404 before you can proceed.

We have prepared a Preliminary Jurisdictional Determination (JD), which is a written indication that wetlands and waterways within your project area may be waters of the United States (Enclosure 2). Such waters will be treated as jurisdictional waters

of the United States for purposes of computation of impacts and compensatory mitigation requirements. If you concur with the findings of the Preliminary JD, please sign it and return it to the letterhead address within two weeks. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of waters of the United States. If one is requested, you will receive an Approved JD when the permit decision has been made by the Corps.

If you have any questions, please contact Mr. Omar Ortiz at the letterhead address, by telephone at (541) 465-6878, or email omar.m.ortiz@usace.army.mil.

Sincerely,

Omar Ortiz
Project Manager, Regulatory Branch

Enclosures

Copy Furnished:

Oregon Department of State Lands (Harrington)
Merjent (Christenson)
Rabe Consulting (Rabe)

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

U.S. Army Corps of Engineers

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): January 22, 2015

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

Mr. Jeff Manternach
Red Rock Biofuels LLC
736 Whalers Way
Building G, Suite 100
Fort Collins, CO 80525-7588

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: CENWP-OD-G, Red Rocks Biofuels LLC (Kadrmas Corner), NWP-2014-463

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: ***(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)***

State: Oregon County: Lake City: Lakeview

Center coordinates of site:

Latitude/Longitude: 42.6366, -120.3483

Authority: ☑ Section 404 ☐ Section 10

Name of nearest waterbody: Goose Lake

Identify (estimate) amount of waters in the review area:

Non-wetland waters: Not applicable

Cowardin Class: Not Applicable

Stream Flow: Not Applicable

Wetlands: 0.738 acres.

Cowardin Class: Palustrine

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: Not Applicable

Non-Tidal: Not Applicable

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☑ Office (Desk) Date: January 22, 2015

☐ Field Determination. Date(s):

NWP-2014-463 Page 1 of 4 Enclosure 2

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

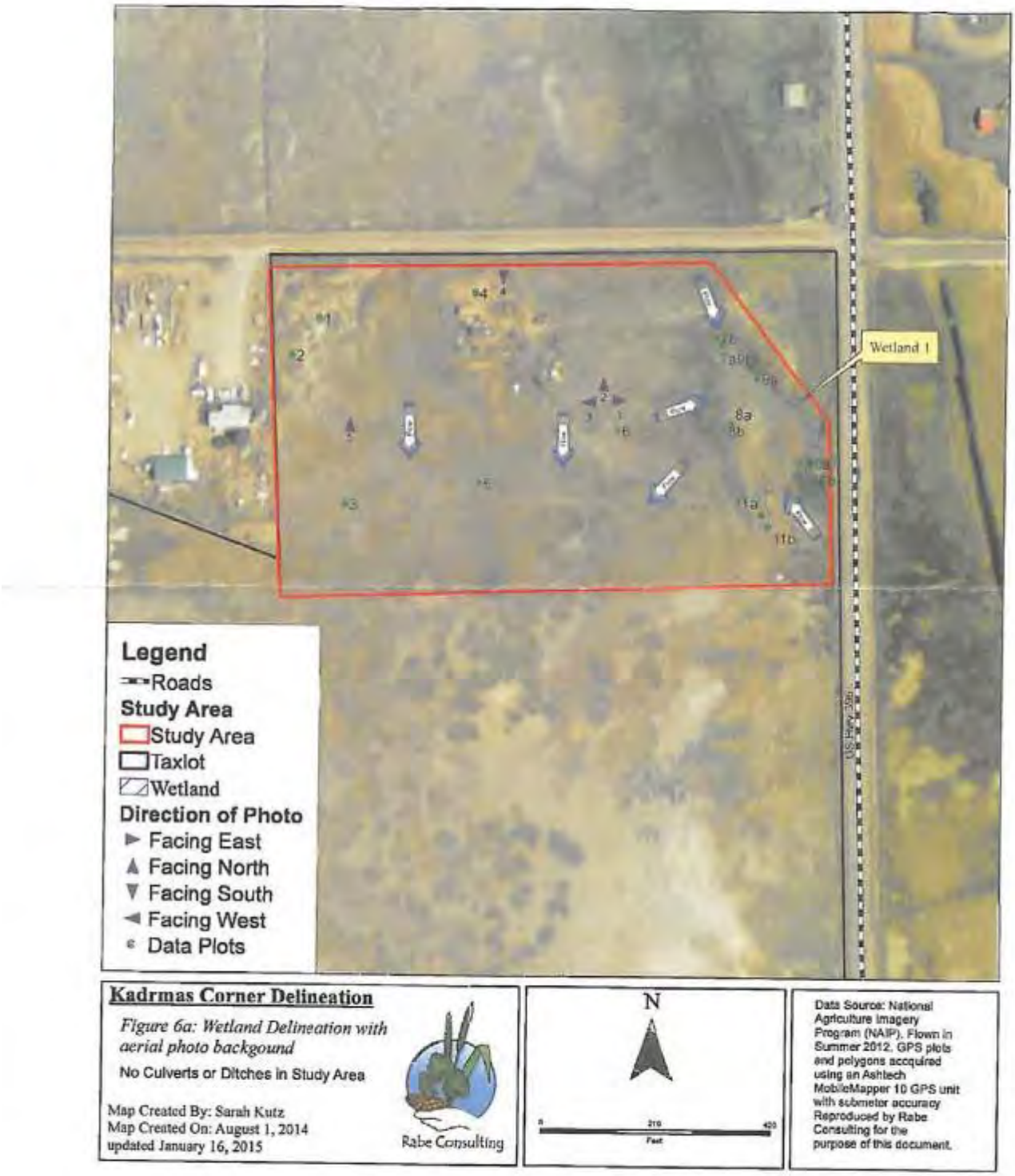
- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Rabe Consulting 2015
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☑ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:
- ☑ U.S. Geological Survey Hydrologic Atlas: USGS 2015
  - ☑ USGS NHD data.
  - ☑ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite scale & quad name: OR-Lakeview
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: NRCS 2015
- ☑ National wetlands inventory map(s). Cite name: USFWS 2015
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM map(s):
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☑ Photographs: ☑ Aerial (Name & Date): Google Earth, Bing Maps 2015
- ☐ or ☐ Other (Name & Date):
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

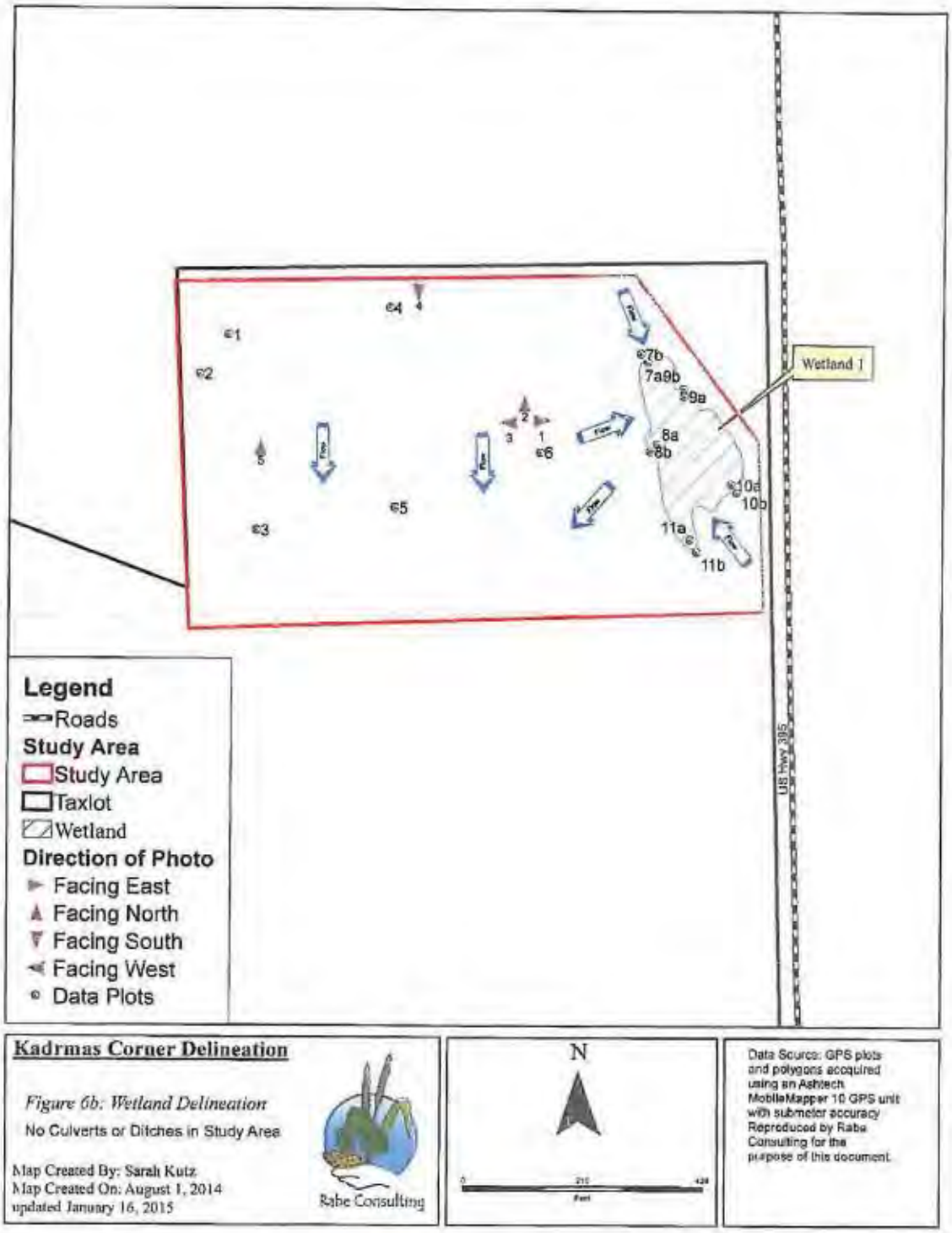
01/22/2015
Signature and date of Regulatory Project Manager (REQUIRED)

Signature and date of person requesting preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

NWP-2014-463 Page 2 of 4 Enclosure 2



NWP-2014-463 Page 1 of 2 Enclosure 1



NWP-2014-463 Page 2 of 2 Enclosure 1

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. §331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

NWP-2014-463 Page 3 of 4 Enclosure 2

Site Number	Latitude	Longitude	Cowardin Class/ Stream Flow	Estimated Amount of Aquatic Resource in Review Area	Class of Aquatic Resource
Wetland 1	42.1636	-120.3483	Palustrine	0.738 ac	Section 404

CHAPTER 8
REFERENCES

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Appendix A

Detailed emissions calculations

Summary of Projected Construction Emissions at Facility and Pipeline Construction - Criteria Pollutants Red Rock Biofuels							
Source	2015 Construction of Facility Emissions (tpy)						
	NOx	CO_2e	SO_2	VOC	PM_{10}	$PM_{2.5}$	CO
Construction Equipment Engines	25.73	6086.33	0.99	6.77	2.03	1.98	17.39
On-Road Vehicle Travel	0.18	66.53	0.00	0.02	0.01	0.01	0.54
Off-Road Vehicle Travel	-	-	-	-	2.76	0.28	-
Storage Piles	-	-	-	-	4.80	0.72	-
Earthmoving Fugitives	-	-	-	-	0.48	0.06	-
TOTALS:	25.91	6152.86	0.99	6.79	10.07	3.04	17.93
Source	2015 Pipeline Construction Emissions (tons)						
	NOx	CO_2e	SO_2	VOC	PM_{10}	$PM_{2.5}$	CO
Nonroad Construction Equipment	2.09	534.68	0.58	0.24	0.25	0.24	4.57
Commuter and Delivery Vehicles	9.18	1728.00	0.18	1.09	0.18	0.18	8.67
Earth Moving Activities	--	--	--	--	2.60	2.60	--
Paved Roads	--	--	--	--	--	--	--
Unpaved Roads	--	--	--	--	68.54	7.55	--
TOTALS	11.27	2262.68	0.75	1.34	71.57	10.57	13.24
Totals for 2015 Facility and Pipeline Construction	**37.18**	**8415.54**	**1.74**	**8.12**	**81.64**	**13.61**	**31.17**

Summary of Projected 2016 Construction Emissions at Facility - Criteria Pollutants Red Rock Biofuels							
Source	2016 Construction Emissions (Facility) (tpy)						
	NOx	CO_2e	SO_2	VOC	PM_{10}	$PM_{2.5}$	CO
Construction Equipment Engines	25.73	6086.33	0.99	6.77	2.03	1.98	17.39
On-Road Vehicle Travel	0.34	150.88	0.00	0.05	0.01	0.01	1.42
Off-Road Vehicle Travel	-	-	-	-	0.20	0.02	-
Storage Piles	-	-	-	-	4.80	0.72	-
Earthmoving Fugitives	-	-	-	-	0.06	0.01	-
TOTALS:	**26.07**	**6237.21**	**0.99**	**6.81**	**7.09**	**2.74**	**18.81**

Summary of Facility Mobile Source Emissions - Criteria Pollutants Red Rock Biofuels							
Source	Emissions (tons)						
	NOx	CO_2e	SO_2	VOC	PM_{10}	$PM_{2.5}$	CO
Employee Vehicles	1.93	884.79	0.01	0.28	0.09	0.27	6.25
Delivery vehicles	4.75	1587.11	0.01	0.47	0.18	0.18	1.87
TOTALS	**6.68**	**2471.90**	**0.02**	**0.75**	**0.27**	**0.44**	**8.12**

Summary of Projected 2015 Construction of Facility and Pipeline Emissions - Selected HAPs Red Rock Biofuels						
Source	2015 Construction Emissions (tpy)					
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Formaldehyde	Total HAPS
Construction Equipment Engines	0.358557123	0.020295686	0.135304575	0.013530457	0.798296992	**1.3259848**
On-Road Vehicle Travel	0.000457459	5.95247E-05	0.000570997	9.14917E-05	0.000824528	**0.0056626**
Off-Road Vehicle Travel	-	-	-	-	-	-
Storage Piles	-	-	-	-	-	-
Earthmoving Fugitives	-	-	-	-	-	-
TOTALS:	0.359014582	0.020355211	0.135875571	0.013621949	0.79912152	1.3316474
Source	Pipeline Construction Emissions (tons) Total HAPs					
Nonroad Construction Equipment	0.00					
Commuter and Delivery Vehicles	0.16					
Earth Moving Activities	-					
Paved Roads	-					
Unpaved Roads	-					
TOTALS:	**0.16**					
Total from 2015 Facility and Pipeline Construction	**1.49**					

Summary of Projected 2016 Construction of Facility Emissions - Selected HAPs Red Rock Biofuels						
Source	2016 Construction Emissions (tpy)					
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Formaldehyde	Total HAPS
Construction Equipment Engines	0.358557123	0.020295686	0.135304575	0.013530457	0.798296992	**1.3259848**
On-Road Vehicle Travel	0.000898383	0.000102515	0.001285293	0.000228178	0.001461663	**0.0135264**
Off-Road Vehicle Travel	-	-	-	-	-	-
Storage Piles	-	-	-	-	-	-
Earthmoving Fugitives	-	-	-	-	-	-
TOTALS:	0.359455506	0.020398201	0.136589868	0.013758636	0.799758655	1.3395113

Summary of Facility Mobile Source Emissions - Selected HAPs Red Rock Biofuels						
Source	Emissions (tons)					
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Formaldehyde	Total HAPS
Employee Vehicles	0.01	0.00	0.01	0.00	0.09	0.11
Delivery vehicles	0.019	0.003	0.004	0.001	0.045	0.07
TOTALS:	**0.026**	**0.004**	**0.010**	**0.002**	**0.136**	**0.179**

Emission Factors & Emissions for Construction Equipment Engines
Red Rock Biofuels

Equipment Type	SCC	Max Engine Rating (hp)	Quantity	Operations (hr/week)	Operations (week/yr)	2015 Emission Factors[1] NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	VOC (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	CO (g/hp-hr)	2015 Emissions NOx tpy	CO2 tpy	SO2 tpy	VOC tpy	PM10 tpy	PM2.5 tpy	CO tpy
Air Compressor	2265006015	80	2	20	32	3.300000	530.000000	0.147000	0.212000	0.214000	0.214000	0.919000	3.72E-01	5.98E+01	1.66E-02	2.39E-02	2.42E-02	2.42E-02	1.04E-01
Asphalt Paver	2270002003	75	1	0	0	2.675678	595.402939	0.003543	0.236469	0.321328	0.311688	2.495280	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Backhoe	2265002066	75	3	50	16	4.645320	693.051742	0.004361	0.923950	0.832259	0.807291	5.700272	9.22E-01	1.38E+02	8.65E-04	1.83E-01	1.65E-01	1.60E-01	1.13E+00
Compactor, Vibratory	2270002081	100	2	50	16	2.826570	536.061248	0.003285	0.241282	0.237544	0.230418	1.106446	4.99E-01	9.45E+01	5.79E-04	4.26E-02	4.19E-02	4.06E-02	1.95E-01
Concrete Mixer Truck	2270002042	150	14	2	20	4.698726	529.854595	0.003375	0.372567	0.259082	0.251309	1.369408	3.73E-01	4.21E+01	2.68E-04	2.96E-02	2.06E-02	1.99E-02	1.09E-01
Concrete Pumps	2270006010	50	2	6	4	4.380000	589.000000	0.165000	0.342000	0.355000	0.355000	1.470000	1.54E-02	2.08E+00	5.82E-04	1.21E-03	1.25E-03	1.25E-03	5.19E-03
Crane, Wheeled A	2270002045	350	1	8	4	3.212541	530.428682	0.003241	0.192570	0.123665	0.119955	0.822582	3.97E-02	6.55E+00	4.00E-05	2.38E-03	1.53E-03	1.48E-03	1.02E-02
Crane, Wheeled B	2270002045	165	3	50	32	2.484729	530.375894	0.003197	0.209113	0.156168	0.151483	0.647305	2.60E+00	5.56E+02	3.35E-03	2.19E-01	1.64E-01	1.59E-01	6.78E-01
Dozers	2270002069	150	3	50	16	2.022320	536.241437	0.003145	0.184624	0.207429	0.201206	0.867358	5.35E-01	1.42E+02	8.32E-04	4.89E-02	5.49E-02	5.32E-02	2.29E-01
Dump Truck	2270002051	325	4	50	16	1.627245	536.359835	0.002970	0.147680	0.101616	0.098567	0.636638	1.87E+00	6.15E+02	3.40E-03	1.69E-01	1.16E-01	1.13E-01	7.30E-01
Excavator	2270002036	138	1	20	4	1.823839	536.275811	0.003086	0.174091	0.192042	0.186281	0.796541	2.22E-02	6.53E+00	3.76E-05	2.12E-03	2.34E-03	2.27E-03	9.69E-03
Fork Lift	2270003020	120	6	40	40	1.280359	536.356008	0.002852	0.114625	0.111186	0.108281	0.496882	1.95E+00	8.17E+02	4.35E-03	2.27E-01	1.75E-01	1.69E-01	7.57E-01
Front End Loaders	2270002066	196	3	50	12	4.098837	624.687187	0.003666	0.582076	0.393935	0.382117	2.116329	1.06E+00	1.62E+02	1.00E-03	1.51E-01	1.02E-01	9.91E-02	5.49E-01
Generators	2270006005	430	2	50	12	3.520000	530.000000	0.149000	0.276000	0.236000	0.236000	1.190000	2.68E+00	3.62E+02	1.02E-01	1.38E-01	1.61E-01	1.61E-01	8.12E-01
Grader	2270002048	140	1	50	10	1.989668	536.247699	0.003137	0.182856	0.205994	0.199814	0.858481	1.54E-01	4.14E+01	2.42E-04	1.41E-02	1.59E-02	1.54E-02	6.62E-02
Light Tower	2265003040	50	4	50	30	3.887448	589.457311	0.003681	0.289517	0.269199	0.252393	1.998612	5.14E-01	7.80E+01	4.87E-04	3.78E-02	3.44E-02	3.34E-02	2.64E-01
Man Lift	2270003010	50	8	50	32	5.679482	692.561380	0.004468	1.077715	0.774766	0.751524	5.382635	4.01E+00	4.89E+02	3.15E-03	7.60E-01	5.47E-01	5.30E-01	3.80E+00
Scrapper A	2270002018	488	3	50	12	2.576972	536.289325	0.003206	0.169799	0.143479	0.139175	1.025086	2.50E+00	5.19E+02	3.10E-03	1.64E-01	1.39E-01	1.35E-01	9.93E-01
Tractor A	2270002081	320	1	50	6	3.581207	536.104761	0.003318	0.241282	0.209841	0.203546	1.559761	3.79E-01	5.67E+01	3.51E-04	2.55E-02	2.22E-02	2.15E-02	1.65E-01
Tractor B	2270002066	138	2	50	6	4.373128	624.426381	0.003929	0.663803	0.501271	0.486233	2.599997	3.99E-01	5.70E+01	3.59E-04	6.06E-02	4.58E-02	4.44E-02	2.37E-01
Welding Machine	2265006025	35	20	50	40	2.060000	708.000000	0.329000	0.812000	0.068700	0.068700	2.690000	3.81E+00	1.31E+03	5.98E-01	1.50E+00	1.27E-01	1.27E-01	4.98E+00
Welding Rig	2265006025	10	20	50	40	1.940000	1005.000000	0.476000	5.500000	0.127000	0.127000	2.960000	1.03E+00	5.32E+02	2.52E-01	2.91E+00	6.72E-02	6.72E-02	1.57E+00
												TOTALS:	25.72504	6086.33	0.99131	6.765229	2.027925	1.978514	17.38976

Emission Factors & Emissions for Construction Equipment Engines
Red Rock Biofuels

Equipment Type	SCC	Max Engine Rating (hp)	Quantity	Operations (hr/week)	Operations (week/yr)	2016 Emission Factors[1] NOx (g/hp-hr)	CO2 (g/hp-hr)	SO2 (g/hp-hr)	VOC (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)	CO (g/hp-hr)	2016 Emissions NOx tpy	CO2 tpy	SO2 tpy	VOC tpy	PM10 tpy	PM2.5 tpy	CO tpy
Air Compressor	2265006015	80	2	20	32	3.300000	530.000000	0.147000	0.212000	0.214000	0.214000	0.919000	3.72E-01	5.98E+01	1.66E-02	2.39E-02	2.42E-02	2.42E-02	1.04E-01
Asphalt Paver	2270002003	75	1	0	0	2.675678	595.402939	0.003543	0.236469	0.321328	0.311688	2.495280	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Backhoe	2265002066	75	3	50	16	4.645320	693.051742	0.004361	0.923950	0.832259	0.807291	5.700272	9.22E-01	1.38E+02	8.65E-04	1.83E-01	1.65E-01	1.60E-01	1.13E+00
Compactor, Vibratory	2270002081	100	2	50	16	2.826570	536.061248	0.003285	0.241282	0.237544	0.230418	1.106446	4.99E-01	9.45E+01	5.79E-04	4.26E-02	4.19E-02	4.06E-02	1.95E-01
Concrete Mixer Truck	2270002042	150	14	2	20	4.698726	529.854595	0.003375	0.372567	0.259082	0.251309	1.369408	3.73E-01	4.21E+01	2.68E-04	2.96E-02	2.06E-02	1.99E-02	1.09E-01
Concrete Pumps	2270006010	50	2	6	4	4.380000	589.000000	0.165000	0.342000	0.355000	0.355000	1.470000	1.54E-02	2.08E+00	5.82E-04	1.21E-03	1.25E-03	1.25E-03	5.19E-03
Crane, Wheeled A	2270002045	350	1	8	4	3.212541	530.428682	0.003241	0.192570	0.123665	0.119955	0.822582	3.97E-02	6.55E+00	4.00E-05	2.38E-03	1.53E-03	1.48E-03	1.02E-02
Crane, Wheeled B	2270002045	165	3	50	32	2.484729	530.375894	0.003197	0.209113	0.156168	0.151483	0.647305	2.60E+00	5.56E+02	3.35E-03	2.19E-01	1.64E-01	1.59E-01	6.78E-01
Dozers	2270002069	150	3	50	16	2.022320	536.241437	0.003145	0.184624	0.207429	0.201206	0.867358	5.35E-01	1.42E+02	8.32E-04	4.89E-02	5.49E-02	5.32E-02	2.29E-01
Dump Truck	2270002051	325	4	50	16	1.627245	536.359835	0.002970	0.147680	0.101616	0.098567	0.636638	1.87E+00	6.15E+02	3.40E-03	1.69E-01	1.16E-01	1.13E-01	7.30E-01
Excavator	2270002036	138	1	20	4	1.823839	536.275811	0.003086	0.174091	0.192042	0.186281	0.796541	2.22E-02	6.53E+00	3.76E-05	2.12E-03	2.34E-03	2.27E-03	9.69E-03
Fork Lift	2270003020	120	6	40	40	1.280359	536.356008	0.002852	0.114625	0.111186	0.108281	0.496882	1.95E+00	8.17E+02	4.35E-03	2.27E-01	1.75E-01	1.69E-01	7.57E-01
Front End Loaders	2270002066	196	3	50	12	4.098837	624.687187	0.003666	0.582076	0.393935	0.382117	2.116329	1.06E+00	1.62E+02	1.00E-03	1.51E-01	1.02E-01	9.91E-02	5.49E-01
Generators	2270006005	430	2	50	12	3.520000	530.000000	0.149000	0.276000	0.236000	0.236000	1.190000	2.68E+00	3.62E+02	1.02E-01	1.38E-01	1.61E-01	1.61E-01	8.12E-01
Grader	2270002048	140	1	50	10	1.989668	536.247699	0.003137	0.182856	0.205994	0.199814	0.858481	1.54E-01	4.14E+01	2.42E-04	1.41E-02	1.59E-02	1.54E-02	6.62E-02
Light Tower	2265003040	50	4	50	30	3.887448	589.457311	0.003681	0.289517	0.269199	0.252393	1.998612	5.14E-01	7.80E+01	4.87E-04	3.78E-02	3.44E-02	3.34E-02	2.64E-01
Man Lift	2270003010	50	8	50	32	5.679482	692.561380	0.004468	1.077715	0.774766	0.751524	5.382635	4.01E+00	4.89E+02	3.15E-03	7.60E-01	5.47E-01	5.30E-01	3.80E+00
Scrapper A	2270002018	488	3	50	12	2.576972	536.289325	0.003206	0.169799	0.143479	0.139175	1.025086	2.50E+00	5.19E+02	3.10E-03	1.64E-01	1.39E-01	1.35E-01	9.93E-01
Tractor A	2270002081	320	1	50	6	3.581207	536.104761	0.003318	0.241282	0.209841	0.203546	1.559761	3.79E-01	5.67E+01	3.51E-04	2.55E-02	2.22E-02	2.15E-02	1.65E-01
Tractor B	2270002066	138	2	50	6	4.373128	624.426381	0.003929	0.663803	0.501271	0.486233	2.599997	3.99E-01	5.70E+01	3.59E-04	6.06E-02	4.58E-02	4.44E-02	2.37E-01
Welding Machine	2265006025	35	20	50	40	2.060000	708.000000	0.329000	0.812000	0.068700	0.068700	2.690000	3.81E+00	1.31E+03	5.98E-01	1.50E+00	1.27E-01	1.27E-01	4.98E+00
Welding Rig	2265006025	10	20	50	40	1.940000	1005.000000	0.476000	5.500000	0.127000	0.127000	2.960000	1.03E+00	5.32E+02	2.52E-01	2.91E+00	6.72E-02	6.72E-02	1.57E+00
												TOTALS:	25.72504	6086.33	0.99131	6.765229	2.027925	1.978514	17.38976

Projected HAP Emissions from Construction equipment Engines Red Rock Biofuels		
Pollutant	2015 Emissions tpy	2016 Emissions tpy
Acetaldehyde	0.3586	0.3586
Acrolein	0.0203	0.0203
Benzene	0.1353	0.1353
1,3-Butadiene	0.0135	0.0135
Formaldehyde	0.7983	0.7983
TOTALS:	**1.3260**	**1.3260**

Pollutant	Fraction of VOC
Acetaldehyde	0.053
Acrolein	0.003
Benzene	0.020
1,3-Butadiene	0.002
Formaldehyde	0.118

Emission Factors & Emissions for On-Road Vehicle Travel
Red Rock Biofuels

Vehicle Type	2015 Vehicle Travel				2016 Vehicle Travel			
	Round trip (mile)	Trips per day	Days/year	Total miles per year	Round trip (mile)	Trips per day	Days/year	Total miles per year
Light-Duty Diesel Truck	16	2	365	11680	16	7	365	40880
Light-duty Gasoline Truck	16	14	365	81760	16	36	365	210240
Light-duty Gasoline Vehicle	12	1	365	4380	12	4	365	17520
TOTALS:				**97820**				**268640**

Pollutant	2015 Emission Factors (grams/year)					2015 Emissions (tpy)					TOTALS:
	LDGV	LDGT	LDDT	COM BUS	HDDV	LDGV	LDGT	LDDT	COM BUS	HDDV	
NOx	1282	67619	22000	75212	0	1.41E-03	7.45E-02	2.43E-02	8.29E-02	0.00E+00	**0.18310802**
CO	13580	435296	14920	24666	0	1.50E-02	4.80E-01	1.64E-02	2.72E-02	0.00E+00	**0.53843655**
SO_2	27	658	50	111	0	2.98E-05	7.25E-04	5.51E-05	1.22E-04	0.00E+00	**0.00093255**
VOC	233	11273	2828	4211	0	2.57E-04	1.24E-02	3.12E-03	4.64E-03	0.00E+00	**0.02044234**
PM_{10}	51	1465	1307	3440	0	5.62E-05	1.61E-03	1.44E-03	3.79E-03	0.00E+00	**0.00690377**
PM_{25}	51	1465	1307	3440	0	5.62E-05	1.61E-03	1.44E-03	3.79E-03	0.00E+00	**0.00690377**
CO_2	1481414	37068480	6773080	14880740	0	1.63E+00	4.09E+01	7.47E+00	1.64E+01	0.00E+00	**66.363156**
CO_2e	1483954	37194223	6782722	14894970	0	1.64E+00	4.10E+01	7.48E+00	1.64E+01	0.00E+00	**66.530878**
Ammonia	111	2734	251	223	0	1.22E-04	3.01E-03	2.77E-04	2.46E-04	0.00E+00	**0.00365857**
Acetaldehyde	4	146	107	158	0	4.41E-06	1.61E-04	1.18E-04	1.74E-04	0.00E+00	**0.00045746**
Acrolein	0	6	20	28	0	0.00E+00	6.61E-06	2.20E-05	3.09E-05	0.00E+00	**5.9525E-05**
Benzene	9	451	23	35	0	9.92E-06	4.97E-04	2.54E-05	3.86E-05	0.00E+00	**0.000571**
1,3-Butadiene	0	64	8	11	0	0.00E+00	7.05E-05	8.82E-06	1.21E-05	0.00E+00	**9.1492E-05**
Formaldehyde	4	136	243	365	0	4.41E-06	1.50E-04	2.68E-04	4.02E-04	0.00E+00	**0.00082453**

Pollutant	2016 Emission Factors (grams/year)					2016 Emissions (tpy)					TOTALS:
	LDGV	LDGT	LDDT	COM BUS	HDDV	LDGV	LDGT	LDDT	COM BUS	HDDV	
NOx	5127	181728	59125	64394	0	5.65E-03	2.00E-01	6.52E-02	7.10E-02	0.00E+00	**0.34212836**
CO	54322	1169858	40098	21119	0	5.99E-02	1.29E+00	4.42E-02	2.33E-02	0.00E+00	**1.41690597**
SO_2	104	1738	135	152	0	1.15E-04	1.92E-03	1.49E-04	1.68E-04	0.00E+00	**0.00234682**
VOC	930	30296	7601	3606	0	1.03E-03	3.34E-02	8.38E-03	3.97E-03	0.00E+00	**0.04677432**
PM_{10}	175	3309	2939	2463	0	1.93E-04	3.65E-03	3.24E-03	2.71E-03	0.00E+00	**0.00979513**
PM_{25}	175	3309	2939	2463	0	1.93E-04	3.65E-03	3.24E-03	2.71E-03	0.00E+00	**0.00979513**
CO_2	5925660	99621600	18202660	12740360	0	6.53E+00	1.10E+02	2.01E+01	1.40E+01	0.00E+00	**150.454601**
CO_2e	5935820	99959532	18228574	12752543	0	6.54E+00	1.10E+02	2.01E+01	1.41E+01	0.00E+00	**150.880301**
Ammonia	449	7349	676	190	0	4.95E-04	8.10E-03	7.45E-04	2.09E-04	0.00E+00	**0.00955041**
Acetaldehyde	11	386	283	135	0	1.21E-05	4.25E-04	3.12E-04	1.49E-04	0.00E+00	**0.00089838**
Acrolein	0	18	51	24	0	0.00E+00	1.98E-05	5.62E-05	2.65E-05	0.00E+00	**0.00010251**
Benzene	32	1036	56	42	0	3.53E-05	1.14E-03	6.17E-05	4.63E-05	0.00E+00	**0.00128529**
1,3-Butadiene	4	171	22	10	0	4.41E-06	1.88E-04	2.43E-05	1.10E-05	0.00E+00	**0.00022818**
Formaldehyde	11	359	646	310	0	1.21E-05	3.96E-04	7.12E-04	3.42E-04	0.00E+00	**0.00146166**

The emission factors were calculated using EPA's MOVES Vehicle Emission Modeling Software. Emission factors for each calendar year are based on average of MOVES generated factors for winter and summer of that year.

Emissions from Off-Road Vehicles
Red Rock Biofuels

Vehicle Type	2015 Vehicle Travel				Emissions and Emisson Factors				2015 Annual Emissions	
	Round Trip (mile)	Trips per Day	Days/Year	Total Miles per Year	Mean Vehicle Weight (tons)	Emission Factor PM_{10} lb/VMT	Emission Factor $PM_{2.5}$ lb/VMT	Control Efficiency %	PM_{10} tpy	$PM_{2.5}$ tpy
All Terrain Vehicle (ATV)	0.5	80	365	14600	0.25	0.006	0.001	75%	0.04159072	0.00415907
Dump Trucks	2	170	365	124100	20	0.041	0.004	75%	2.53983726	0.25398373
Light Duty Trucks	0.5	10	365	1825	0.65	0.009	0.001	75%	0.0079918	0.00079918
Medium Duty Trucks	1	8	365	2920	0.89	0.010	0.001	75%	0.01472919	0.00147292
Commuter Bus	0.75	23	365	6296.25	1.46	0.013	0.001	75%	0.03968363	0.00396836
Water/fuel Truck	2	24	365	17520	1.66	0.013	0.001	75%	0.11699124	0.01169912
								TOTALS:	**2.76082384**	**0.27608238**

Vehicle Type	2016 Vehicle Travel				Emissions and Emisson Factors				2016 Annual Emissions	
	Round Trip (mile)	Trips per Day	Days/Year	Total Miles per Year	Mean Vehicle Weight (tons)	Emission Factor PM_{10} lb/VMT	Emission Factor $PM_{2.5}$ lb/VMT	Control Efficiency %	PM_{10} tpy	$PM_{2.5}$ tpy
All Terrain Vehicle (ATV)	0.5	80	365	14600	0.25	0.0056974	0.0005697	75%	0.04159072	0.00415907
Dump Trucks	0	0	0	0	20	0.0409321	0.0040932	75%	0	0
Light Duty Trucks	0.5	10	365	1825	0.65	0.0087581	0.0008758	75%	0.0079918	0.00079918
Medium Duty Trucks	1	8	365	2920	0.89	0.0100885	0.0010088	75%	0.01472919	0.00147292
Commuter Bus	0.75	11	365	3011.25	1.46	0.0126055	0.0012605	75%	0.01897913	0.00189791
Water/fuel Truck	2	24	365	17520	1.66	0.0133552	0.0013355	75%	0.11699124	0.01169912
								TOTALS:	**0.20028208**	**0.02002821**

Emissions from Storage Piles Red Rock Biofuels										
Pile Name	Maximum Size (area) (ft2)	Average Silt Content[2] (%)	No. of Days with >= 0.01 in of Precip	Time Wind Speed >12 mph[5] (%)	Control Measures	Moisture/ enclosure[1] (%)	PM_{10}/PM Ratio[3]	$PM_{2.5}$/PM Ratio[3]	Emission Rates (tpy)[4,6] PM_{10}	$PM_{2.5}$
Area A - Topsoil	5,625	12	41.5	14.25		0	0.5	0.075	0.15150078	0.02272512
Area A - Excavated Mater	44,100	12	41.5	14.25		0	0.5	0.075	1.18776608	0.17816491
Terminal Excavated Mate	90,000	12	41.5	14.25		0	0.5	0.075	2.42401242	0.36360186
Area B - Topsoil	12,450	12	41.5	14.25		0	0.5	0.075	0.33532172	0.05029826
Area B - Excavated Mater	25,900	12	41.5	14.25		0	0.5	0.075	0.69757691	0.10463654
								TOTALS:	4.7961779	0.71942668

Dust Emissions from Earthmoving Red Rock Biofuels										
On-Site Activity	Emissions Factors[1]			Operation[2]			PM_{10} Emissions (tpy)		$PM_{2.5}$ Emissions (tpy)	
	PM_{10}	$PM_{2.5}$	Units	2015	2016	Units	2015	2016	2015	2016
Bulldozing	0.001011	0.002081	lb/hr	1600	1600	hr/yr	0.000809	0.00080901	0.001665	0.0016651
Grading	1.9584	0.224464	lb/VMT	490.3438	61.17188	VMT/yr	0.480145	0.0598995	0.055032	0.0068654
						TOTALS:	0.480954	0.06070851	0.056697	0.0085305

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Table 9A-1: Fugitive Dust Emissions - Earth Moving Activities
Red Rock Biofuels Pipeline

Construction Activity	Emission Source	Emissions (tons)							GHG Emissions
		NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2	HAPs	CO_2e
Pipeline Construction	Exhaust Emissions - Nonroad Construction Equipment	2.1	0.2	4.6	0.6	0.2	0.2	534.7	0.00	535.3
	Exhaust Emissions - Commuter and Delivery Vehicles	9.2	1.1	8.7	0.2	0.2	0.2	1,728.0	0.16	1,730.1
	Fugitive Dust Emissions - Earth Moving Activities	--	--	--	--	2.6	2.6	--	--	--
	Fugitive Dust Emissions - Paved Roads	--	--	--	--	--	--	--	--	--
	Fugitive Dust Emissions - Unpaved Roads	--	--	--	--	68.5	7.6	--	--	--
	Total	**11.3**	**1.3**	**13.2**	**0.8**	**71.6**	**10.6**	**2,262.7**	**0.2**	**2,265.4**

Table 9A-2: Fugitive Dust Emissions - Earth Moving Activities
Pipeline Construction Activities
Red Rock Biofuels Pipeline

Equipment Type[a]	SCC	Fuel Type	Engine Rating (hp)	Engine Type	Load Factor[b]	Pipeline Placement[c]		
						Quantity	Single Unit Operation	
							(hr/wk)	(wks/project)	(hr/project)
1/2 Ton Trucks	2265002051	Gasoline	150	GV	0.8	2	25	12	300
Tractor Trailers	2270002051	Diesel	250	LDDV	0.59	1	40	12	480
Concrete Trucks	2270002051	Diesel	400	HDDV	0.59	1	12	1.2	14.4
TA 77 Ditchers	2270002036	Diesel	275	LDDV	0.59	1	60	12	720
Fuel Trucks	2270002051	Diesel	175	LDDV	0.59	1	25	12	300
Backhoes	2270002066	Diesel	345	HDDV	0.75	1	60	12	720
Cranes	2270002045	Diesel	250	LDDV	0.47	1	10	1.2	12
Front End Loaders	2270002060	Diesel	100	LDDV	0.59	1	32	1.2	38.4
D7 Bulldozers	2270002069	Diesel	240	LDDV	0.59	1	40	12	480
Sidebooms	2270002045	Diesel	200	LDDV	0.43	1	60	12	720
Air Compressors	2270006015	Diesel	80	LDDV	0.43	1	50	12	600
Water Pumps	2265006010	Gasoline	10	GV	0.69	1	20	7.2	144
Welding Machines	2265006025	Gasoline	55	GV	0.68	4	60	7.2	432
Welding Trucks	2265002051	Gasoline	110	GV	0.8	2	50	7.2	360
X-Ray Trucks	2265002051	Gasoline	125	GV	0.8	1	50	7.2	360

Equipment Type[a]	Total Operation (hr/project)	Exhaust Emission Factors[d,e]							Project Emission Rate[f]						
		NO_X (g/hp-hr)	VOC (g/hp-hr)	CO (g/hp-hr)	SO_2 (g/hp-hr)	PM_{10} (g/hp-hr)	$PM_{2.5}$ (g/hp-hr)	CO_2 (g/hp-hr)	HAPs (g/hp-hr)	NO_X (tons)	VOC (tons)	CO (tons)	SO_2 (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO_2 (tons)	HAPs (tons)
1/2 Ton Trucks	600	0.69	0.27	11.94	0.14	0.06	0.06	699.48	0.0062106	0.05	0.02	0.95	0.01	0.00	0.00	55.51	4.93E-04
Tractor Trailers	480	2.90	0.21	1.31	0.82	0.32	0.31	535.68	0.002518206	0.23	0.02	0.10	0.06	0.02	0.02	41.81	1.97E-04
Concrete Trucks	14.4	2.62	0.18	1.48	0.82	0.30	0.29	535.78	0.000533495	0.01	0.00	0.01	0.00	0.00	0.00	2.01	2.00E-06
TA 77 Ditchers	720	2.90	0.21	1.31	0.82	0.32	0.31	535.68	0.002518206	0.37	0.03	0.17	0.11	0.04	0.04	68.98	3.24E-04
Fuel Trucks	300	2.90	0.21	1.31	0.82	0.32	0.31	535.68	0.002518206	0.10	0.01	0.04	0.03	0.01	0.01	18.29	8.60E-05
Backhoes	720	3.42	0.40	2.61	0.96	0.50	0.49	625.35	0.000886998	0.70	0.08	0.54	0.20	0.10	0.10	128.42	1.82E-04
Cranes	12	2.84	0.20	0.86	0.81	0.22	0.21	530.40	0.001709153	0.00	0.00	0.00	0.00	0.00	0.00	0.82	2.66E-06
Front End Loaders	38.4	2.91	0.21	1.52	0.91	0.46	0.44	595.59	0.003623675	0.01	0.00	0.00	0.00	0.00	0.00	1.49	9.05E-06
D7 Bulldozers	480	2.90	0.21	1.31	0.82	0.32	0.31	535.68	0.002518206	0.22	0.02	0.10	0.06	0.02	0.02	40.13	1.89E-04
Sidebooms	720	2.84	0.20	0.86	0.81	0.22	0.21	530.40	0.001709153	0.19	0.01	0.06	0.06	0.01	0.01	36.20	1.17E-04
Air Compressors	600	3.29	0.22	2.71	0.90	0.44	0.43	589.66	0.00352967	0.07	0.01	0.06	0.02	0.01	0.01	13.42	8.03E-05
Water Pumps	144	2.77	4.16	352.57	0.22	0.06	0.06	1057.50	0.0062106	0.00	0.00	0.39	0.00	0.00	0.00	1.16	6.80E-06
Welding Machines	1728	0.69	0.27	11.94	0.14	0.06	0.06	699.48	0.0062106	0.05	0.02	0.85	0.01	0.00	0.00	49.83	4.42E-04
Welding Trucks	720	0.69	0.27	11.94	0.14	0.06	0.06	699.48	0.0062106	0.05	0.02	0.83	0.01	0.00	0.00	48.85	4.34E-04
X-Ray Trucks	360	0.69	0.27	11.94	0.14	0.06	0.06	699.48	0.0062106	0.03	0.01	0.47	0.01	0.00	0.00	27.76	2.46E-04
									TOTAL	2.09	0.24	4.57	0.58	0.25	0.24	534.7	0.00

Table 9A-3: Fugitive Dust Emissions - Earth Moving Activities
Red Rock Biofuels Pipeline

Construction Activity	Daily Material Handling Rate[a] (ton/day)	Construction Days[b]	Storage Pile Surface Area[c] (acre)	Emission Factor[d]		Emissions[e]		Emission Factor AP-42 Reference[f]
				PM10 (lb/ton)	PM2.5 (lb/ton)	PM10 (tons)	PM2.5 (tons)	
Removal of debris and topsoil and unloading to storage piles	200	84	---	0.058	0.058	0.4872	0.4872	Section 11.9, Table 11.9-4, Topsoil removal by scraper
Trench excavation and unloading to storage piles	200	84	---	0.012	0.012	0.1008	0.1008	Section 11.9, Table 11.9-4, Overburden replacement
Backfilling trench	200	84	---	0.012	0.012	0.1008	0.1008	Section 11.9, Table 11.9-4, Overburden replacement
Topsoil replacement	200	84	---	0.012	0.012	0.1008	0.1008	Section 11.9, Table 11.9-4, Overburden replacement
Storage Piles[g] (Emission Factor units in lbs/day/acre)	---	84	2.9	15.03	15.03	1.81	1.81	---
					TOTAL	2.60	2.60	

Table 9A-4: Fugitive Dust Emissions - Earth Moving Activities

Red Rock Biofuels Pipeline

Description	Roundtrip Distance (miles)	Average Daily Vehicles (veh/day)	Construction Period (days)	Total Mileage (VMT)	Emission Factor [a,b,c,d]										Projected Emissions						
					NOX (g/VMT)	VOC (g/VMT)	CO (g/VMT)	SO2 (g/VMT)	PM10 (g/VMT)	PM2.5 (g/VMT)	HAPs (g/VMT)	CO2 (g/VMT)	NO_X (tons)	VOC (tons)	CO (tons)	SO_2 (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	HAPs (tons)	CO_2 (tons)
Gasoline Worker Vehicles	40	144	84	483,840	1.09	1.49	14.05	0.0127	0.0059	0.0055	0.2811	440	0.58	0.79	7.49	0.01	0.00	0.00	0.15	234.67
Diesel Worker Vehicles	40	144	84	483,840	8.06	0.28	1.1	0.158	0.17	0.17	0.0079	1,400	4.30	0.15	0.59	0.08	0.09	0.09	0.00	746.67
Diesel Delivery Vehicles	40	144	84	483,840	8.06	0.28	1.1	0.158	0.17	0.17	0.0079	1,400	4.30	0.15	0.59	0.08	0.09	0.09	0.00	746.67
												Total	**9.18**	**1.09**	**8.67**	**0.18**	**0.18**	**0.18**	**0.16**	**1,728.00**

Table 9A-5: Fugitive Dust Emissions - Earth Moving Activities
Red Rock Biofuels Pipeline

Activity	Description	Mean Vehicle Weight (tons)	Roundtrip Distance (miles)	Average Daily Vehicles	Construction Period (days)	Total Mileage (VMT)	Emission Factor (lb/VMT)		Emissions (tons)	
							PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
Pipeline Construction	Gasoline Worker Vehicles	2.74	6	20	132	15840	1.53	0.15	12.14	1.21
	Diesel Worker Vehicles	4	6	10	132	7920	1.82	0.20	7.19	0.78
	Diesel Delivery Vehicles	25	6	30	132	23760	4.14	0.47	49.21	5.55
								Total	**68.54**	**7.55**

Operational Emissions from On-Road vehicles
Redrock Biofuels

Vehicle Type	Quantity	Miles per day	Trips Per day	VMT for year
Passenger Cars (LDGV)	20	80	1	584000
Light Duty Trucks (LDGT, LDDT)	20	80	1	584000
Delivery Vehicles	50	120	1	2190000

	Emission Factor (grams/mile)				Emissions (tpy)			
Pollutant	LDGV	LDGT	LDDT	Delivery	LDGV	LDGT	LDDT	Delivery
NOx	0.292694064	0.827042564	1.883561644	1.9658726	0.19	0.53	1.21	4.75
CO	3.100456621	5.32407045	1.27739726	0.7753854	2.00	3.43	0.82	1.87
SO_2	0.006164384	0.008047945	0.004280822	0.0047680	0.00	0.01	0.00	0.01
VOC	0.053196347	0.137879159	0.242123288	0.1964982	0.03	0.09	0.16	0.47
PM_{10}	0.011643836	0.017918297	0.111900685	0.0756502	0.01	0.01	0.07	0.18
$PM_{2.5}$	0.011643836	0.017918297	0.111900685	0.0733822	0.01	0.01	0.07	0.18
CO_2	338.2223744	453.3816047	579.8869863	656.3086612	217.73	291.86	373.30	1584.37
CO_2e	338.8022831	454.9195572	580.7125	657.4422356	218.10	292.85	373.83	1587.11
Ammonia	0.025342466	0.033439335	0.021489726	0.0161895	0.02	0.02	0.01	0.04
Acetaldehyde	0.000913242	0.001785714	0.009160959	0.0077685	0.00	0.00	0.01	0.02
Acrolein	0.00	7.33855E-05	0.001712329	0.0013790	0.00	0.00	0.00	0.00
Benzene	0.002054795	0.005516145	0.001969178	0.0016566	0.00	0.00	0.00	0.00
1,3-Butadiene	0.00	0.000782779	0.000684932	0.0005242	0.00	0.00	0.00	0.00
Formaldehyde	0.000913242	0.001663405	0.020804795	0.0185941	0.00	0.00	0.01	0.04

Appendix B

Memorandum of Agreement

Attachments to the agreement are not presented with the following document; certain information is not being released for public distribution due to protection of historic properties' locational information. Such restricted release of information is specified by NHPA. Although the Advisory Council on Historic Preservation declined to participate in development of this agreement, an executed copy will be filed with that agency.

Note that Consulting Parties concurrences are not required for this agreement to be executed.

MEMORANDUM OF AGREEMENT

AMONG

THE UNITED STATES AIR FORCE,

THE OREGON STATE HISTORIC PRESERVATION OFFICE, AND

RED ROCK BIOFUELS, LLC, REGARDING THE RED ROCK BIOFUELS INTEGRATED BIOFUEL PRODUCTION ENTERPRISE PROJECT IN LAKE COUNTY OREGON

FOR TREATMENT OF HISTORIC PROPERTIES INCLUDING:

35LK3991, 35LK3992, 35LK3994, 35LK4694, 35LK4696 AND 35LK4697

Whereas, Red Rock Biofuels (Applicant), a privately-owned company, applied for funding assistance from the United States Air Force (AF) Defense Production Act (DPA) Title III Program Advanced Drop-in Biofuel Production Program (ADBPP) for the Red Rock Biofuels Project (Project); and

Whereas, the ADBPP includes project development, engineering activities, construction and operation of a commercially viable Integrated Biofuel Production Enterprise (IBPE); specific equipment purchases, project and operational development and shakedown testing will be partially funded through an AF Technology Investment Agreement (TIA) with the Applicant; and

Whereas, the Air Force (AF) is responsible for Section 106 compliance on this Project, because it is providing a one-time sum to assist the Applicant in procuring and integrating the proposed technology and equipment, executing the technical start-up and shakedown, and validating the Applicant's proposed plans; while incurred costs and risks are the Applicant's sole responsibility; and

Whereas, the Applicant is solely responsible for choosing the proposed site and technologies planned for the construction, operation and maintenance of the IBPE on privately-owned land within Lake County, Oregon adjacent to the town of Lakeview; and

Whereas, the Applicant, as the party responsible for construction and for implementation of the Archaeological Treatment Plan for resolving adverse effects to Historic Properties, has been invited to be a Required Signatory to this Agreement; and

Whereas, the AF has defined the Project's Area of Potential Effect (APE), as depicted in Attachment 1, to include the proposed biofuels plant footprint and natural gas pipeline corridor (Lake Railway right-of-way) where direct effects may occur and a broader area where indirect project effects were considered, and any changes to the APE will result in production of an updated APE map to be attached to this agreement; and

Whereas, after consultation pursuant to 36 CFR Part 800, the AF and the Oregon State Historic Preservation Office (SHPO), have agreed that "eligible" archaeological sites 35LK3991, 35LK3992, 35LK3994, and 35LK4694, and "unevaluated" archaeological sites 35LK4696 and 35LK4697, which

cannot be avoided within the facility footprint and associated pipeline, will be treated as "eligible" for inclusion on the National Register of Historic Places (NRHP) (i.e. Historic Properties) pursuant to 36 CFR §800 and that the undertaking will have an adverse effect on these archaeological resources, and the proposed measures are designed to mitigate the adverse effect; and

Whereas, the Project is also subject to the requirements of Oregon Revised Statute (ORS) §358.905-358.961, which, in part, provides protection for archaeological objects defined as 75 years of age or older. The Project is also subject to requirements of ORS §97.740-97.990, which define measures to protect Native American cairns and graves and associated cultural items, and ORS §390.235, which requires the Applicant to apply for a state archaeology permit with a research design before any ground disturbing activities can occur within a known site. The Applicant is responsible for addressing the requirements of these state statutes and rules; and

Whereas, the AF has consulted with the Burns Paiute Tribe, Confederated Tribes of the Warm Springs Indian Reservation of Oregon, Fort Bidwell Indian Community of the Fort Bidwell Reservation of California, Klamath Tribes and Pit River Tribes (collectively "Tribes"), and in the development of this MOA have asked the Tribes to sign this MOA as Concurring Parties.; and

Whereas, the Project is not on Tribal lands but does have the potential to affect Historic Properties, as defined by Section 106, culturally significant to the Tribes; and

Whereas, in accordance with 36 CFR §800. 6(a)(1), the AF notified the Advisory Council on Historic Preservation (ACHP) of their intent to prepare this MOA with specific documentation and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR §800.6(a)(1)(iii), and

Whereas, in accordance with 36 CFR § 800.6(c)(1), a signatory has the sole authority to execute, amend, or terminate the agreement. The federal agency and the SHPO are signatories. Concurring parties (Tribes), in accordance with 36 CFR § 800.6(c)(3), means parties invited to concur in the agreement document but who do not have the authority to amend or terminate the agreement. The Applicant is an invited signatory in accordance with 36 CFR § 800.6(c)(2) and has the authority to amend and terminate the agreement.

Now therefore, the AF, the SHPO and Applicant agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on Historic Properties.

STIPULATIONS

The AF, in cooperation with the Applicant, will ensure that the following measures are carried out:

I. General Requirements and Standards:

A. As conditions of the award under the TIA and DPA Title III Program, AF shall require the Applicant to execute and fund the assigned stipulations in this MOA under AF oversight pursuant to 36 CFR §800.2(a)(3), including but not limited to, inventory, evaluation, treatment,

tribal consultation, public outreach, any post-construction data recovery, discoveries, analysis, reporting, curation, training, and all other actions necessary to resolve adverse effects, as directed by the AF; and

B. The AF shall ensure that all actions addressed in this MOA involving the identification, evaluation, treatment and reporting of historical properties, as defined by the Secretary of the Interior's Standards and Guidelines for Archaeological and Historical Preservation (48 FR 44716, since amended), shall be carried out under the direct supervision of a person(s) meeting the Secretary of Interior's Professional Qualification Standards for archaeological, architectural history, or history, as appropriate (36 CFR Part 61).

C. All actions addressed in this MOA require adherence to technical standards published by the SHPO, including but not limited to, the Guidelines for Conducting Field Archaeology in Oregon (2013) and State of Oregon Archaeological Reporting Guidelines (2011). In addition, the Project must comply with all state statutes which govern the permitting of archaeological investigations on private and non-federal public lands.

D. Signatories of this agreement shall keep sensitive cultural resources information confidential to the extent allowed by state and federal law.

E. All resource management documents as specified under the Agreement (including the Archaeological Treatment Plan, Construction Monitoring and Unanticipated Discovery Plan, and summary reports) will be completed prior to any construction with the exception of final reports and related materials as specified in stipulations II.D(a) and II.E.

II. Stipulations for Resolving Adverse Effects to Historic Properties:

A. Archaeological Treatment Plan

a. The Archaeological Treatment Plan (Attachment 2) will address additional site excavation needed to better understand the archaeological complexity of sites 35LK4696 and 35LK4697, which are treated as eligible, in addition to site 35LK3991 in order to test areas previously unexcavated and address the level of effect that will result from project construction.

i. Upon completion of supplemental archaeological testing and evaluation detailed in the Archaeological Treatment Plan, further consultation and approval regarding potential additional mitigation shall be conducted by the Applicant.

b. The Archaeological Treatment Plan will address the eligible and unevaluated archaeological sites identified at the time of the execution of this MOA by the Applicant and will guide the actions of cultural resources professionals during its implementation. The plan shall:

i. Describe the location-specific Project actions that have the potential to adversely affect Historic Properties;

ii. Describe methods that will be used to recover and process archaeological material and information, including 1) methods proposed to establish site

boundaries, locate presence/absence of buried features or areas of significant artifacts, to recover different types of site assemblages (e.g., appropriate methods for Native American sites vs. historic sites); 2) potential special or analytical methods that may be applied to recovered resources (e.g., C-14 dating, obsidian hydration studies, flotation, etc.); and 3) artifact processing parameters and laboratory procedures;

iii. Outline reporting requirements and appropriate timeframe for analysis; and

iv. Identify requirements and process approaches for final curation of artifacts and information associated with the Project.

c. The Archaeological Treatment Plan is attached to this MOA as Attachment 2. In the event the signatories cannot agree regarding treatment, the procedures for dispute resolution in stipulation F(a) will be implemented.

B. Project Construction

a. Construction Monitoring and Unanticipated Discovery Plan

i. Construction Monitoring

1. The Applicant will prepare a plan to address construction monitoring methods and reporting. The Construction Monitoring Plan (Attachment 3) will include provisions for selecting Archaeological Monitors and work plans for monitoring duties.
2. The interested and affected tribes shall be afforded opportunity to participate directly as Tribal Cultural Resource Monitors during Project construction activities. Tribal Cultural Resource Monitors must meet qualifications as specified by the respective Tribal entities.

ii. Unanticipated Discoveries of Cultural Material or Human Remains

1. The Applicant will prepare a plan to address unanticipated discoveries of archaeological sites and/or human remains during construction. This Unanticipated Discovery Plan (UDP) (Attachment 3) will define the Applicant's and the AF's responsibilities under ORS 97.740. The UDP will include directives for stopping work, protecting the discovery, notifying the AF and appropriate authorities, assessing the significance of the find, consulting with the appropriate Tribes, signatories and concurring parties, and the conditions for resuming work.

iii. The Construction Monitoring and Unanticipated Discovery Plan is attached to this MOA as Attachment 3. In the event the signatories cannot agree regarding monitoring, the procedures for dispute resolution in stipulation F(a) will be implemented.

b. Adjustments to the Area of Potential Effect (APE)

i. If the Applicant proposes an adjustment to the APE where no previous intensive inventory or Tribal consultation has been conducted, the Applicant shall survey the APE of the proposed area in a manner consistent with the requirements of

SHPO Field Archaeology Guidelines (*Guidelines for Conducting Field Archaeology in Oregon*, Oregon State Historic Preservation Office, November 2013). The survey shall be conducted by persons meeting the Secretary of Interior's Professional Qualification Standards for archaeological, architectural history, or history, as appropriate (36 CFR Part 61) and also meeting the State of Oregon's "Qualified Archaeologist" definition as noted in ORS 390.235(6)(b).

ii. The Applicant will submit a copy of an addendum to the survey report to the signatories for a 30 days review and comment period, before ground disturbing activities within the new APE could commence. The addendum report shall be a stand-alone report which includes all appropriate sections of a standard report per SHPO reporting guidelines (*State of Oregon Archaeological Reporting Guidelines*, Oregon State Historic Preservation Office, July 2011). Background and environmental data can reference that of earlier major reports. The addendum report will include a map distributed to all signatories of this agreement, and replace the map from initial production of this agreement.

C. Curation

a. The Applicant shall ensure that all collections and associated records resulting from identification and data recovery efforts are curated in accordance with Oregon State Museum of Natural and Cultural History's curation standards and federal curation standards (36 CFR 79). For collections from public lands, all costs of curation into perpetuity shall be borne by the Applicant. Those collections to be returned to private land owners (at private land owner's request) will be maintained in accordance with state guidelines until completion of analysis and subsequent return. It is possible that during the life of this agreement the Applicant may, in fact, become the full or partial landowner of the Project's developed or undeveloped land. The Signatories will be notified if such change of ownership occurs which potentially might result in an amendment to this agreement. Additionally, the landowners may donate artifacts to a Tribal or regional museum for curation at a future date, if the facility meets federal curation standards (36 CFR 79). In this case, the Applicant and the landowners are not responsible for any cost of curation.

b. Documents and artifacts generated and slated for curation will be curated at the Oregon State Museum of Natural and Cultural History (Museum) in Eugene, Oregon. If a curation agreement is not in place, the Applicant will finalize curation agreements prior to implementation of the Archaeological Treatment Plan, and will notify the AF within 15 days of receipt of the final curation agreement.

c. All materials and associated records slated for curation will be delivered to the Museum within 60 days after delivery of the final report. This schedule does not pertain to human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony, which may require special processing and/or an amendment of this Agreement. Artifacts requested to be returned to private landowners will be held for a minimum of 30 days following the completion of the final

report to permit the appropriate Tribes time to review the collected material to insure that no funerary or sacred objects are present or objects of cultural patrimony. If a tribe identifies such an object, it shall be reserved from being returned to the landowner until a formal repatriation process can be undertaken and reviewed by the Museum.

D. Reporting
   a. All final reports and related materials outlined in the MOA and Archaeological Treatment Plan will be submitted to the AF, SHPO, Tribes, Commission on Indian Services, and Oregon State Museum of Natural and Cultural History within one year after the end of the field investigations associated with this MOA and Archaeological Treatment Plan, unless otherwise agreed to by the required signatories to the MOA. All submittals will be made in one bound hard copy and in electronic format unless other provisions are made and agreed to by the required signatories to this Agreement.

E. Notice to Proceed
   a. The AF will allow construction in those portions of the Project that 1) do not contain Historic Properties, or 2) that do contain Historic Properties once the agreed upon field work/treatment as specified in the Archaeological Treatment Plan is completed and approved by the AF and the SHPO, in accordance with the procedures outlined in the Archaeological Treatment Plan, and taking into account any comments or concerns expressed by the Tribes.
      i. The Applicant will prepare a report summarizing the fieldwork and preliminary results within 15 days of completion of fieldwork, and request a notice to proceed with construction from the AF.
      ii. The AF will distribute the Summary Letter Report to the MOA signatories and consulting parties for a 15-day review and comment period. The review period will begin at date of receipt of the report. Following AF acceptance of the report, the AF may authorize, in writing, the Applicant to proceed with treatment and/or construction or use of the area. Should the signatories fail to reach agreement concerning the resolution of adverse effects, the procedures in stipulation II.F(a) will be implemented.

F. Other Provisions
   a. Dispute Resolution
      i. Should any signatory or invited signatory to this MOA object to actions proposed or the manner in which the terms therein are implemented, the AF will consult with all parties and attempt to resolve objection. If the AF determines that the dispute cannot be resolved, the AF will forward all documentation relevant to the dispute, including the proposed AF resolution, to the ACHP. The ACHP will provide the AF with its advice on resolving the dispute within thirty (30) days of receiving documentation. Upon receipt of the ACHP advice, the AF will provide a written response to the dispute which

takes into account the ACHP's comments and MOA signatories. The AF will then proceed according to its final decision.

ii. If the ACHP does not provide advice within thirty (30) days, the AF will provide a written response to the dispute which takes into account any timely comments received from the signatories and concurring parties to the MOA. The AF will then proceed according to its final decision.

iii. The AF's responsibilities to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

b. Amendments to the Agreement: Amendments to this MOA will be sent to all signatories for a 15-day review period. This MOA may be amended when such an amendment is agreed to in writing by the required signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

G. Compliance with the Anti-Deficiency Act

a. The terms of this agreement shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require the AF to obligate or make a payment of funds in violation of the Anti-Deficiency Act (31 USC §1341).

H. Duration of the Agreement: This MOA will be enforced until curation per stipulation II.C and reporting per stipulation II.D are completed and the AF notifies the parties that the agreement's requirements have been met, or the AF notifies the MOA signatories that the Applicant's proposed project will not be federally funded and executed, or five years from the date of the agreement of the MOA, whichever comes first.

I. Termination of the Agreement: Any required signatory may terminate this MOA by providing 30 days written notice to the other signatories. The required signatories will consult during the 30-day notice period prior to termination to seek agreement on amendments or other actions that will avoid termination. If the required signatories individually terminate their participation in the MOA, then the MOA is terminated in its entirety. In the event of termination, and prior to work continuing on the Project, the AF must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The AF shall notify the signatories as to the course of action it will pursue.

J. Agreement to Archaeological Treatment Plan and Construction Monitoring and Unanticipated Discovery Plan: The Archaeological Treatment Plan and Construction Monitoring and Unanticipated Discovery Plan are attachments to this MOA. Signing of the MOA indicates agreement to the MOA, Archaeological Treatment Plan, and Construction Monitoring and Unanticipated Discovery Plan.

Execution of this MOA by the AF and the SHPO, and implementation of its terms, is evidence that the AF has taken account the effects of this Project on historical properties and afforded the ACHP an opportunity to comment.

REQUIRED SIGNATORY 1 of 2:

10 NOV 2015

THOMAS A. LOCKHART, SES **Date**
Director
Materials and Manufacturing Directorate

REQUIRED SIGNATORY 2 of 2:

Christine Curran 10.20.15

Chrissy Curran **Date**

Deputy SHPO, Oregon Parks and Recreation

INVITED SIGNATORY 1 of 1:

NAME Jeff Muntesnach **Date** Oct 19, 2015
CFO, Red Rock Biofuels

Appendix C
Comment Letters and Responses

This Appendix contains the public comments received by the Air Force on the Red Rock Biofuels EA, and the Air Force's response to these comments. The Air Force published the EA November 2015 and written comments were received until February 5, 2016. The Air Force has considered, evaluated, and responded to the comments received. The list below displays the individual respondents on the EA during the comment period and the page number in the Appendix where the Air Force's responses to their comments begin.

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Leakage of natural gas can occur from both transmission and distribution infrastructure. The EA must assess the potential for fugitive methane leakage and upset releases from construction and operation of the new natural gas lateral.	Potential leaks from the operation of the natural gas pipeline would be *de minimus* due to minimal aboveground equipment. Construction of the pipeline lateral would not have natural gas leaks since natural gas service through the line will not start until the completion of construction, safety testing, and commissioning of the pipeline.
The EA anticipates that the facility will use 170,000 bone dry tons ("bdt") of woody material per year. Biomass yields from forestry operations vary, but one study estimated that thinning operations for wildfire severity reductions must remove about 12.5 bdt per acre in order to be economically feasible. At this level, the facility potentially could result in an additional 13,600 acres of thinning operations per year, with attendant impacts on biological resources, forest habitat, water quality, soil compaction, and equipment emissions. Again, these potential impacts cannot be ignored and must be addressed in the context of a feedstock supply assessment, which must include a description of current and anticipated forestry operations on the private and public lands within an economically realistic radius of the facility.	Section 1.3 discusses the scope of the analysis and includes the rationale for which resources are analyzed in detail. As described in the EA, the Red Rock Biofuels plant meets the Department's ADBPP requirements. The EA focuses on the potential impacts associated with the Proposed Action, in comparison to the No Action Alternative. The effects on biological resources, water quality, soils and air quality are analyzed in Chapter 3 of the EA. The potential effects of forest management and vegetation treatments which could provide source materials for the Red Rock Biofuels proposed plant and connected actions are evaluated under the applicable federal and state regulations.
Biomass gasification produces not only synthesis gas, but also various organic compounds collectively described in the literature as "tars"; one of the primary constituents of these "tars" is benzene, a known hazardous chemical. The ACDP Review Report acknowledges the possibility of fugitive emissions of benzene and other hazardous chemicals from equipment leaks and upsets, but the EA fails to address the potential significance of these releases and their effects on the health and safety of facility workers and others.	Section 3.2.3 quantifies hazardous air pollutant emissions. The hazardous air pollutant emissions are less than major source thresholds. The proposed biofuels facility would be required to meet Oregon Occupational Safety & Health Administration standards and regulations for employee health and safety. Table 3.5 contains detailed HAP emissions estimates.
The EA here satisfies none of NEPA's requirements. Indeed, the document is devoid of any meaningful disclosure of GHG emissions, whether direct or indirect, and fails entirely to analyze the significance of these emissions. The proposed FONSI6 likewise is stated in entirely conclusory terms and fails to set forth any rational explanation that would support a conclusion that the facility's greenhouse gas emissions may be considered less than significant.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.

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As the EA acknowledges, the Council on Environmental Quality ("CEQ") issued revised draft guidance for assessment of greenhouse gas emissions in December 2014 ("NEPA GHG Guidance"). Because climate change is the result of cumulative greenhouse gas emissions from a wide range of projects, the NEPA GHG Guidance "recommends agencies use the projected GHG emissions and also, when appropriate, potential changes in carbon sequestration and storage, as the proxy for assessing a Proposed Action's potential climate change impacts." The guidance also acknowledges that projects like this one—which may influence forest management activities across the wide area from which woody biomass feedstocks are drawn—may require analysis, among other things, of "net GHG emissions and carbon stock changes that would occur with and without implementation of the anticipated vegetation management practice. The analysis should take into account the GHG emissions (biogenic and fossil), carbon sequestration potential, and the net change in carbon stocks that are relevant in light of the Proposed Actions and timeframes under consideration.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The EA does not explain its rationale for declining to quantify, disclose, and analyze the significance of these emissions. At best, the EA contains two vague, contradictory statements regarding the quantity of GHG emissions from the facility. The document acknowledges that the facility has the potential to emit more than 25,000 metric tons CO2e per year, but on the same page states that "[a]t the expected generation levels the total annual emissions at the preferred site is expected to be below 25,000 metric tons of CO2e which is the reference point suggested per revised draft CEQ guidance for a quantitative analysis and disclosure of GHG emissions (CEQ, 2014)." The EA does not explain the inconsistency between these two statements, nor does it explain the dramatic inconsistency between the latter assertion and the figures in the ACDP Review Report, which are nearly ten times higher than the CEQ "reference point" of 25,000 metric tons CO2e per year. Indeed, the latter assertion-that annual emissions are "expected to be below 25,000 metric tons of CO2e"-appears to be false. These contradictory and inconsistent statements fail to demonstrate that the Air Force has taken a "hard look" at the facility's impacts, rationally evaluated their significance, and discussed potential mitigation measures for those impacts. Without this "hard look," the EA cannot serve its statutory and regulatory purpose under NEPA.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The EA estimates that the facility will generate 40-50 truck trips per day.30 The ACDP Review Report, however, discloses that the facility will generate up to 65 truck trips per day. The EA must be revised to include accurate truck trip and emissions estimates. Furthermore, the EA contains no disclosures or analysis of significance related to emissions hotspots (from idling on-site or at traffic intersections) that may be created	Section 3.2.3 of the Final EA has been revised to reflect updated information on expected vehicular traffic, including fugitive dust and tailpipe emissions on-site and from feedstock collection. The updated values are reflected in Tables 3.5 and 3.6. Additionally, Section 3.2.1 of the Final EA has been updated to include an analysis of the Proposed Action with respect to the Lakeview Area Particulate

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or exacerbated in and around Lakeview as a result of increased truck traffic associated with the facility. The EA must be revised to correct these inconsistencies and omissions.	Matter (PM2.5) Advance Action Plan.
The facility's enormous fossil fuel emissions aside, the Air Force cannot rationally ignore direct emissions from the amine unit or indirect emissions from fuel combustion on the basis that these emissions result from processing and combustion of woody biomass feedstocks. Biomass and fossil CO2 are indistinguishable in terms of their atmospheric forcing effects. Claims that biomass and fossil CO2 should be analyzed differently thus turn entirely on "net" carbon cycle effects, particularly the possibility that new growth will sequester carbon emitted from combustion, and/or the possibility that biofuels production and combustion might "avoid" emissions that would otherwise occur. But even if these net carbon cycle effects are taken into account, emissions from biomass processing and combustion can increase atmospheric CO2 concentrations for decades to centuries depending on feedstocks, biomass harvest practices, and other factors. Multiple studies have shown that it can take a very long time to discharge this so-called "carbon debt" associated with bioenergy and biofuels production, even where fossil fuel displacement is assumed, and even where "waste" materials like forest residuals are used as feedstocks. One study, using realistic assumptions about initially increased and subsequently repeated bioenergy harvests of woody biomass, concluded that the resulting atmospheric emissions increase may even be permanent. These same principles apply to the forest-derived woody biomass that would be used as biofuel feedstock in the Red Rock facility. For example, forestry residues (such as the "slash" left behind from logging operations) typically take years to decades to decompose, and use of these materials for bioenergy or biofuels therefore can incur a significant carbon debt period. Recent studies also have shown that intensive harvest of logging residues that otherwise would be left to decompose on site can deplete soil nutrients and retard forest regrowth as well as reduce soil carbon sequestration.	The Proposed Action meets the requirements of EPA's Renewable Fuel Standard and the manufactured fuel is eligible to generate Renewable Identification Numbers. EPA conducted a carbon lifecycle analysis during rulemaking. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations. Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The sources of biomass are discussed in Section 2.3.1 of the Final EA. As identified in the comment these wastes could be from sources in Oregon, California, or Nevada. The EA focuses on the potential impacts on biological resources associated with the Proposed Action, in comparison to the No Action Alternative. Section 3 of the final EA analysis includes the potential impacts on biological resources from the gathering of biomass.
Although individual sources of greenhouse gas ("GHG") emissions may seem insignificant, climate change is a problem driven by the cumulative impacts and effects of numerous emissions sources. Indeed, "the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis" agencies must conduct under NEPA. Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1217 (9th Cir. 2008). One source or one small project may not appear to have a significant effect on climate change, but the combined impacts of many sources are dramatically affecting and will continue to affect the climate as a	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing

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whole. NEPA requires accurate scientific and factual information regarding this and other impacts. See 40 C.F.R. §§ 1500.1(b), 1502.24.	of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
Biomass and biofuels proponents often argue that using non-merchantable trees and understory materials from thinning operations intended to reduce wildfire severity offsets or even reduces net greenhouse gas emissions. Several studies, however, have demonstrated that thinning forests and burning the resulting materials for bioenergy can result in a loss of forest carbon stocks and a transfer of carbon to the atmosphere lasting many years. Because it is impossible to know in advance whether wildfire will occur in a thinned stand, thinning operations may remove carbon that never would have been released in a wildfire; one recent study concluded, for this and other reasons, that thinning operations tend to remove about three times as much carbon from the forest as would be avoided in wildfire emissions. Another report from Oregon found that thinning operations resulted in a net loss of forest carbon stocks for up to 50 years. Under basic physical mass balance principles, that carbon stock loss represents an equivalent increase in atmospheric carbon. Another report found that even light-touch thinning operations in several Oregon and California forest ecosystems incurred carbon debts lasting longer than 20 years; even where carbon payback times were shorter than two decades, the study's conclusions depended on ecosystem-specific characteristics. These studies also indicate that payback times depend heavily on local characteristics, such as forest type and wildfire behavior; as a result, emissions resulting from gasification of this category of materials cannot simply be ignored. The Air Force thus cannot assume that biomass-related CO2 emissions from the facility have no effect on the climate. As EPA's Science Advisory Board panel on biogenic CO2 emissions recently concluded, biomass cannot be considered a priori "carbon neutral." Rather, a full and scrupulously accurate life-cycle analysis is essential to understanding the atmospheric implications of converting biomass to liquid fuel.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The EA's discussion of biological resources is limited to resources occurring on the two alternative project sites. As a result, the EA omits any discussion of impacts that could occur as a result of increased demand for woody biomass materials from the forests anticipated to provide facility feedstocks. Absent a feedstock supply assessment, it is impossible to conclude that the facility will not have any significant impact on nearby forest resources related to increased demand.	"The types of renewable biomass materials are described in Section 2.3.1 of the final EA. The renewable biomass materials used by the proposed plant would be residual materials from sawmills, forest management activities such as pre-commercial thinning, forest restoration and fuels treatments, and timber harvests. The volume of residual material available from these sources are estimated in the publically available Department of Energy's 2011, and 2016 Billion Ton biomass assessment reports.

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Comment	**Response**
The EA and FONSI must be revised, or the Air Force must prepare an environmental impact statement ("EIS"), before moving ahead with any action related to the facility.	The Department of Defense determined that the Proposed Action warrants an Environmental Assessment with a Finding of No Significant Impact because the action will not have a significant impact on the natural and human environment, and thus not be subject to preparation of an Environmental Impact Statement. Planned mitigation is used to reduce the potential impacts below a threshold of significance or to minimize the potential environmental effects. The Air Force and other agencies use mitigation to avoid, minimize, rectify, reduce, or compensate the adverse environmental impacts associated with their actions, per 40 C.F.R. § 1508.2. As described in the EA, there are no significant environmental effects from the Proposed Action that are above a threshold of significance.
The EA Fails to Consider a Reasonable Range of Alternatives and/or Defines the Project's Objectives Too Narrowly. The EA focuses on only two project alternatives, consisting of alternative sites for construction of the same basic facility. This does not satisfy NEPA's requirement for analysis of a reasonable range of alternatives. NEPA requires that agencies "(r)igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). "The Air Force must analyze reasonable alternatives to the proposed action and the 'no action' alternative in all EAs and EISs, as fully as the proposed action alternative." 32 C.F.R. § 989.8(a); see also id. § 989.14(e) ("The alternatives section of an EA and an EIS are similar and should follow the alternatives analysis guidance outlined in § 989.8."). "'Reasonable' alternatives are those that meet the underlying purpose and need for the proposed action and that would cause a reasonable person to inquire further before choosing a particular course of action. Reasonable alternatives are not limited to those directly within the power of the Air Force to implement. They may involve another government agency or military service to assist in the project or even to become the lead agency." 32 C.F.R. § 989.8(b). A rigorous review of alternatives is considered the "heart" of environmental analysis under NEPA. See 40 C.F.R. § 1502.14. According to CEQ regulations, agencies must "use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 40 C.F.R. § 1500.1(e). "NEPA's requirement that alternatives be studied, developed, and described both guides the substance of the environmental decision making and provides evidence that the mandated decision making process has actually taken place." Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228 (9th Cir. 1988) (citation omitted). An agency cannot avoid analyzing a reasonable range of alternatives by "defin[ing] the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign	The Air Force previously evaluated the applicant's proposed project and site and determined that Red Rock Biofuel's met the criteria for an award under the ADBPP Program. As indicated in Section 1.2, this EA evaluates the potential environmental consequences involved with meeting the Department's goal in establishing a commercially viable biofuel production capability at a specific location. NEPA, through its implementing regulations, requires Federal agencies to document, analyze, and review Proposed Actions and potential reasonable alternatives. For clarification, the ADBPP requires production of at least 10 million gallons per year of neat biofuel. Sections 2.3.1 and 2.3.2 of the EA describe the ADBPP's objectives, requirements and site selection criteria that were used to consider site alternatives for the Proposed Action. Section 2.3.3 describes alternatives that meet the selection standards and were analyzed in the EA. Section 2.4 discusses alternatives that were considered but eliminated from further analysis in the EA because they did not meet the standards defined in Sections 2.3.1 and 2.3.2.

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ones in the agency's power would accomplish the goals of the agency's action," rendering NEPA analysis "a foreordained formality." Nat'l Parks & Conservation Ass'n v. BLM, 606 F.3d 1058, 1070 (9th Cir. 2010) (quoting Friends of Southeast's Future v Morrison, 153 F.3d 1059, 1066 (9th Cir 1998); accord Citizens Against Burlington, Inc. v. Busey, 938 F.2d 190, 196 (D.C. Cir. 1991); City of New York v. United States Dep't of Transp., 715 F.2d 732, 743 (2d Cir. 1983). The EA describes the purpose and need of the Air Force's action not in terms of building any particular facility, much less this particular facility, but rather in terms of providing support for any facility that can supply a particular quantity of drop-in biofuels that meet Air Force specifications: The Air Force DPA Title III Program is therefore interested in establishing the commercial-scale manufacture and supply of drop-in replacement biofuels for aviation and marine diesel applications. . . . The purpose of the Proposed Action is the design, construction and/or retrofit, validation, qualification, and operation of a domestic commercial-scale IBPE that meets a requirement of at least 15.6 million gallons per year neat (100% pure, unblended) biofuel capacity. The IBPE will be capable of producing drop-in liquid transportation fuels targeted for military operational use, and as such, must be approved and certified MILSPEC JP-5, JP-8 and/or F-76 equivalents by the time the IBPE becomes operational. The "Program Objectives" section of the EA similarly describes the general characteristics of a facility meeting DPA Title III requirements, but does not identify any objectives that would require funding only of this specific facility. Accordingly, the purpose and need of the specific Air Force action under review here is therefore to provide funding for a facility that can produce a particular quantity of biofuels that meet Air Force specifications. Alternatives, therefore, should not be limited just to different locations for this specific facility; rather, the EA must include alternatives that would direct support to other, alternative biofuels facilities that could potentially meet the Air Force's requirements with fewer adverse impacts. As a threshold matter, it is not clear that the Red Rock facility satisfies the stated purpose and need. As described by the Air Force, the DPA Title III program requires production of at least 15.6 million gallons per year of "drop-in" biofuels, i.e., biofuels that can be blended directly with other fuels and used in aviation applications. This facility, however, will have a maximum capacity of only 14.2 million gallons of jet fuel and diesel fuel. If the facility actually is intended to have a higher capacity, in line with DPA Title III requirements, not only the EA, but also the ACDP and other permits, will likely require revision. More generally, the Red Rock facility hardly even qualifies as a "biofuels" facility; indeed, the facility could make—and in fact is specifically designed to make— the	

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same Fischer-Tropsch fuels directly from natural gas with far lower GHG emissions. Adding woody biomass gasification to the process simply decreases overall efficiency, increases GHG emissions, and entails a range of other impacts from long distance truck trips to increased removal of biomass from nearby forests. More critically, there is simply no guarantee that the fuels produced from the facility will even be "biofuels" at all, and no assessment in the EA as to what quantity, if any, of the total fuels produced at the facility will be derived from biomass as opposed to natural gas. Again, it is far from clear that this facility satisfies the requirements of the DPA Title III program. Even if the Air Force could support its determination that the facility satisfies the purpose and need of the DPA Title III program, the EA would still be deficient under NEPA. The EA must contain an alternatives analysis sufficient to inform the Air Force as to whether this is the facility it should be investing in, or whether there are any other less environmentally damaging facilities that might be able to meet the EA's (and the Air Force's) stated objectives. As drafted, the EA effectively presents the Air Force's decision to invest in this facility as a foregone conclusion by analyzing a far too narrow range of alternatives. Accordingly, the EA (or EIS, if one is required following preparation of an adequate EA) must explore other reasonable alternatives for investment. Alternatively, but for the same reasons, to the extent the Air Force views the purpose and need of this project as advancing construction of the Red Rock Biofuels facility in particular, the Air Force has defined the project objectives too narrowly and placed too much weight on Red Rock Biofuels' private interests. Although an agency's NEPA analysis must "acknowledge private goals" related to a project's purpose and need, this is "a far cry from mandating that those private interests define the scope of the proposed project." National Parks Conservation Ass'n, 606 F.3d at 1070. The views of Congress, as expressed in the agency's "statutory authorization to act" and other enactments, take precedence over private interests. Id. (citing Citizens Against Burlington, 938 F.2d at 196). Again, the congressional authorization at issue here, as expressed in the DPA Title III program, does not direct the Air Force to support this particular facility or relieve the Air Force of its responsibility under NEPA to ensure that all reasonable alternatives consistent with congressional direction are evaluated."	

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Environmental groups petitioned the EPA to redesignate Lakeview as nonattainment under the Clean Air Act and denied it just before the release of the environmental assessment. The rejection was based on a voluntary quid pro quo program that has not received formal rulemaking called "Advance," the result being people in the community are fined for burning in their woodstoves while Red Rock is allowed to pollute without Best Available Control Technology on their refinery stacks, along with a watering down of the Congressional intent of the Clean Air Act.	Red Rock Biofuels is aware of the petition submitted to the EPA requesting that the Lakeview area be redesignated nonattainment.
The EA fails to show any consultation with the US EPA concerning Lakeview, Oregon's continuing issues with Clean Air Act PM2.5 NAAQS attainment.	Red Rock Biofuels received an Air Contaminant Discharge Permit on June 24, 2015 from the Oregon Department of Environmental Quality meeting the requirements of the Clean Air Act. Agency consultation is satisfied by the permitting process. See section 1.4.2 of the EA.
The EA fails to address the project's emissions exacerbating an existing problem and pronment's role in providing mitigation measures to ensure future compliance.	Section 3.2.2 of the EA discusses the impact of the Proposed Action on regional air quality. Red Rock Biofuels received an Air Contaminant Discharge Permit on June 24, 2015 meeting the Oregon Department of Environmental Quality's rules and regulations.
I also know that Red Rock had discussions with Fremont-Winema NF, Modoc NF, Lakeview BLM, and Alturas BLM over forest biomass availability and supply streams. The EA fails to not only provide proof of consultation with these federal entities so that they may provide comment but their participation in the needs of the project critical to its justification and success. There is no indication in the EA or appendices that the DoD or project proponents consulted with any federal or state land management agency during its development. I know for a fact this occurred on multiple occasions.	The discussions by Red Rock Biofuels with the Fremont-Winema and Modoc National Forests as well as the Lakeview and Alturas BLM were part of their evaluation of the potential sources for biomass. The proposed location of a project is determined by the Applicant and must meet a number of requirements in order to be considered a viable location. The proposed plant site is the culmination of meetings, information exchange, and review between the Air Force and Red Rock Biofuels to identify a suitable location. Once an initial location and project are proposed by the applicant, the Air Force evaluates that proposal and alternatives in detail to determine whether or not to approve, approve with modifications, or deny the proposal.
There is no Emergency Response Plan to respond a catastrophic event at the biofuels facility that would require an evacuation of 2,500 people or for a potential derailment along the railway that includes the XL Pit and nearby town of Alturas, California (pop. 2800).	Section 2.3.5 of the Final EA has been updated to clarify that the proposed biomass plant will have an emergency response plan prior to operation of the facility. The Emergency Response Plan will be coordinated with first responders and the Local Emergency Planning Committee. The Lake County railroad is responsible for emergency response plans for materials and products shipped on the railway.
One obvious regional impact area to area forests. Other than mentioning an agreement with Collins Corporation, the EA does not address the fact that there is no data provided to suggest Collin's can provide the inputs required by Red Rock. Surely Red Rock has developed this data along with their own private forest supply assessment.	The EA focuses on the potential impacts associated with the Proposed Action, in comparison to the No Action Alternative. The types of renewable biomass are discussed in Section 2.3.1 of the EA including information on the estimated volume of residual material available from sawmills, forest management and timber harvest activities. As described in the Introduction to the EA, the proposed biofuels plant is not limited to using material from the Collins Corporation.

Appendix C Comments and Responses Chris Zinda, continued	
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The project requires a great deal of forest biomass over its lifespan and would not be built without an assurance that the supply would be available and constant. This supply cannot possibly be met though Red Rock's association with the Collins sawmill alone.	The effects of logging and thinning which could provide source materials for the Red Rock Biofuels proposed plant and connected actions are evaluated under the applicable federal and state regulations.
Even though the EPA in its release of the Clean Power Plan did not look favorably upon biomass derived energy as carbon neutral, it allowed states to grant exemptions to biomass energy as part of their individual Carbon Plans that must be submitted to EPA. This process is underway and the Red Rock project should be subject to Carbon Plan scrutiny.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The project is a bait and switch, the project justified as "renewable" with federal subsidies from the DoD. Red Rock presented an option to Oregon DEQ that is not included in the EA for an option to create biofuels from natural gas in cases of biomass supply distribution. In effect, Red Rock will be able to create a fuel product from fossil fuels that is neither renewable or carbon friendly - no longer meeting the national objectives of reducing global carbon emissions. Here we have a potential bait and switch, where subsidies gained under a now outdated biomass carbon neutrality ruse result in switching entirely to producing fuels from fossil based inputs. Although Oregon DEQ did require an analysis of the option, there is no mention of it in the DoD EA much less a model and discussion of the entire carbon cycle.	The Proposed Action meets the requirements of EPA's Renewable Fuel Standard as such the fuel is eligible to generate Renewable Fuel Identification Numbers. EPA conducted a carbon lifecycle analysis during rulemaking. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations. The fuel is not eligible to generate Renewable Fuel Identification Numbers using natural gas as a feedstock and there are no plans of using natural gas as a feedstock except in upset conditions.
Emergency, water and sewer services for the project will be born[e] by the citizens of Lakeview and project proponents will be given 15 years of local tax credits.	The proposed biofuels plant site, construction, and operation are consistent with the State of Oregon, Lake County, and the Town of Lakeview's planning and zoning requirements. Potential tax credits and the cost of providing emergency, water, and sewer services are established by these entities and not the Air Force or Red Rock Biofuels.
The project borders three states. Using a 75 mile radius, the Fremont-Winema in Oregon and Modoc National Forest in California are at risk. As are the Hart Mountain Sheldon National Antelope Refuges in Oregon/Nevada and the Modoc National Wildlife Refuge in California. There are also three large BLM districts in three states. The flora and fauna many of which are federally or OR/CA/NV state listed was sensitive, threatened or endangered - are impacted by the gathering processes of forest	The types of renewable biomass are discussed in Section 2.3.1 of the EA including information on the estimated volume of residual material available from sawmills, forest management, and timber harvest activities. As identified in the comment, these wastes could be from sources in Oregon, California, or Nevada. The EA focuses on the potential impacts on biological resources associated with the Proposed Action, in comparison to the No Action Alternative. The final EA

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biomass. This complicates things, as each department, bureau, region and state has their own policies and initiatives, their own legal mandates, and all too often they are incongruent with regional land use planning and coordinated response to proposed projects. This project has immense regional forest and land use implications.	analysis has been updated to include the potential impacts on biological resources from the gathering of biomass. The policies and initiatives developed by federal and state agencies in relation to land use planning, their policies, and legal mandates are outside of the scope of this proposed action.
Since the project will require forest biomass from federal lands, it is incumbent upon the federal lands management agencies work cooperatively and create a standalone forest supply assessment for the 20 year lifespan this project. At a minimum, DoD/Red Rock needs to release their own private supply assessment that must have been developed for the project. Without a Forest Supply Assessment, we cannot possibly know feedstock anticipated supply or disruption. By relying on individual agency NEPA sale or treatment documents instead of a formal supply assessment to provide feedstock, we absolutely know that disruptions are likely to occur based on litigation alone.	The types of renewable biomass are discussed in Section 2.3.1 of the EA including information on the estimated volume of residual material available from sawmills, forest management, and timber harvest activities. As identified in the comment, these wastes could be from sources in Oregon, California, or Nevada. The EA focuses on the potential impacts on biological resources associated with the Proposed Action, in comparison to the No Action Alternative. The final EA analysis has been updated to include the potential impacts on biological resources from the gathering of biomass. The policies and initiatives developed by federal and state agencies in relation to land use planning, their policies, and legal mandates are outside of the scope of this proposed action.
The EA indicates the project site, along with a good portion of the railway to market, is within the 100 year floodplain. There are no mitigation measures provided in the EA that adequately address environmental and public protection in case of that 100 year event occurring. There is no discussion of the threat to both the human and natural environment, discussion of pre-planning mitigation measures for what will be an eventuality.	The Final EA includes analysis of the facilities proposed to be constructed within the floodplain mapped by FEMA. On December 18, 2015, FEMA approved a revision to the mapped floodplain. The Final EA has been updated to clarify that a portion of the biomass storage and handling area, tank farm, and the stormwater detention basin would be constructed within the 100-year floodplain, and the total 43,560 square feet required by the tank farm would not alter the historic flood patterns, intensity, or hydrologic cycle. Providing a forecast of flooding potential of the site is part of the analysis conducted by FEMA. The proposed facilities are either constructed above the floodplain or have a dike constructed that prevents the flooding of the facility.
There are three alternatives present in the EA: The Preferred, The Null, and Alternate Site. Beyond identifying an alternative site location, the EA fails to provide any project details or impacts for the Alternate Site option. There is no floodplain assessment, no cultural resources inventory, no inventory for flora or fauna, no project building/rail plans developed and transposed for the Alternate Site option. Simply, there is nothing provided in the EA for the public to assess project site impacts, mitigation measures, costs and benefits when comparing Alternate Site to the Preferred. It is just mentioned as an alternative real estate location and nothing more, an alternative without weight.	Section 2.4 of the Final EA describes reasonable alternatives that meet the selection standards and were considered in the EA. Chapter 3 of the EA focuses on the potential impacts associated with the Proposed Action at both alternatives, in comparison to the No Action Alternative. For some resource areas discussed in Chapter 3, the impacts would be identical for the two sites; therefore, two identical sets of analyses are not presented. For resources where the impacts will be different at the two sites, the differences are described. The analyses presented allow a comparison of the anticipated impacts at the two sites, consistent with the

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	requirements of NEPA. If the alternative site were selected for the Proposed Action, all required analyses for site permitting would be conducted.
There are no formal agreements between the DoD, Project proponent, and the Oregon and California State Historic Preservation Offices with the Klamath, Pit, Burn Paiute, or Ft. Bidwell Paiute. The only agreement in place is one with the Oregon SHPO, signed by a deputy director one week prior to the release of the project EA. While the administrative record demonstrates consultation, the consultation appears to have occurred late in the process, did not initially include the Pit River Tribe, and did not address the potential for cultural resources on the Alternative site location. The DoD and Red Rock met with the Pit River people who reside in California and have ancestral claims to the region. The consultation did not include the California State Historic Preservation Office. While the DoD and Red Rock have an agreement with the Oregon SHPO it never attempted to contact much less reach any agreement that included the California SHPO. This is a serious procedural oversight of which I believe the Pit people have addressed in their comments to this proposal. Forest clearing activities will impact regional cultural resources and provides yet another reason why a forest supply assessment needs to be developed or that developed by Red Rock released. The proposed facility site contains hundreds of cultural artifacts dating back thousands of years, including the very high potential of human remains. Red Rock and the State Historic Preservation Office of Oregon have an agreement, saying all artifacts are the property of the owner. Neither the State nor Red Rock have agreements with the Klamath, Paiute and Pit peoples who, after consultation, oppose the project.	Section 3.5 and Chapters 5 and 7 of the EA document the Air Force's consultation efforts with the ACHP, the OR SHPO and federally listed Native American Tribes with historic interest in the project site in accordance with the National Historic Preservation Act Section 106. A MOA was executed which contains provisions to mitigate adverse effects to cultural resources in the APE. The MOA also lays out a Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan, which will govern how cultural resources are treated during construction activities. The APE does not include cultural resources in regional forests.
There is no discussion of emergency services, either at the project site or transportation to market. There is no indication in the EA there was consultation with the Federal Rail Administration, Oregon Rail Administration or permitting authorities in either Oregon or California. A discussion of rail permitting status which is Excepted Speed Limited along with potential mitigation measures should derailments occur is also missing. The railway runs along the floodplain of both Goose Lake and the North Fork of the Pit River. As such, the EA has neglected to address the potential impacts to not only environmental resources but the very viability of the lands of the people who reside along these tracks and watercourses. For example, there is no discussion of the impacts of a derailment in the already derailment prone Canyon of the North Fork of the Pit River upstream from the XL Reservation. Should any catastrophic derailment and spill occur in this area, the long viability of the XL Pit and their agricultural lands that border the river would be in serious peril.	The Final EA has been updated to clarify that the proposed biomass plant will have an emergency response plan prior to operation of the facility. The Emergency Response Plan will be coordinated with first responders and the Local Emergency Planning Committee. The US Department of Transportation Federal Rail Administration is responsible for the regulation and oversight of the Lake Railway. Operations of Lake Railway and consultation with the FRA is outside of the scope of this EA. Lake Railway and their ability to transport hazardous materials are evaluated under the applicable federal regulations. Section 3.10 of the Final EA has been updated to indicate that fuel products will be transported in DOT- approved tank cars. Lake Railway is responsible for emergency response plans and coordinating with first responders for materials and products shipped on their railway.

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There are a number of so-called 'solutions' which are being touted as 'cleantech' or 'green' and claimed to be saving us from disastrous climate change. Many of these rely on thermal treatment that is burning, which always releases carbon dioxide (CO2) and other pollutants. Though claiming to be green, these claims are nearly always made without full disclosure of GHGs (greenhouse gas) emissions. The actual truth of the cumulative impacts of these disastrous developments is only just being recognized. This plant alone will create up to 5 MILLION tonnes of CO2 over a 25yr lifespan. This is not sustainable or green. The gasifying incineration of 182000 tpa of biomass, will produce approximately 300,000 tpa of carbon dioxide, per year. (See CARBON IMPACTS below) RR's claims of 25,000tpa CO2 are grossly underestimated. (line 22-23 pg 28) The loadout flare and gasifier flare CO2 emissions are thus also underestimated.(Fig 2.3 pg23) This is low-carbon, or carbon neutral.	Section 3.2.2 has been revised to include an analysis of the impacts of the Proposed Action on Climate Change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The process for converting biomass to liquid fuel is pyrolysis (gasification in the absence of oxygen) to Fischer-Tropsch (F-T) conversion. This process does not include the combustion or incineration of biomass or any other material.
More information http://www.energyjustice.net/content/study-thinning-forests-bioenergy-can-worsen-climate 'Sustainable biomass harvesting' is claimed (Merjent letter, pg 177) There is no location map for this. The cumulative future impacts of destroying biomass, which is needed to combat climate change AND simultaneously producing more climate changing emissions, have not been investigated, at all. The full impacts of emitting massive amounts of carbon dioxide, in combination, ie the destruction of biomass and then burning it with gas plus cumulatively with other biomass developments in the USA, have not been calculated.	The Air Force and Lake County believe that the EA provides sufficient information concerning potential cumulative impacts in adequate detail to allow decision-makers and the public to understand these potential impacts, and that the analysis of these potential impacts conforms to the requirements of applicable NEPA regulations. The temporal and spatial boundaries of the cumulative effects analysis are included in Section 3.11.
FLOOD RISK Both sites are within the Federal Emergency Management Agency (FEMA) designated Special Flood Hazard Areas, areas at HIGH RISK of flooding. As climate changes worsen, the chances of flooding increase from the 1 in 100 yr event. Indeed, the developer cannot give adequate forecasts for flooding, to the agency (Part 2) FEMA themselves give a 26% chance of flooding.	Amended EO 11988 (Floodplain Management) requires a Federal agency avoid direct or indirect support of development within the floodplain whenever there is a practicable alternative. As portions of the Preferred Site and all of the Alternative Site are within the 100-year floodplain, there is no practicable alternative that would not occur within the “100-year” floodplain. Section 3.3 and Figure 3.1 of the Final EA were revised for consistency with FEMA's December 18, 2015 issuance of a Letter of Map Revision. The analysis in Section 3.3 and the public involvement conducted by the Air Force is consistent with FEMA's 8 Step Process (44 CFR Part 9).
ASH - SOLID WASTE QUANTITIES Information about ash tonnages is missing. The gasifying incineration of 500 tonnes of 'biomass' daily will give rise to much more than 350 tonnes of ash weekly. Again, the laws of physics do not appear to be applied. The correct amount is closer to. 2000 tonnes of ash per week, over a week, equating to approximately 100,000 tonnes of ash per year This is not an 'insignificant' amount. Added to the fact that this will contain dioxin, from the burning of biomass	

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and possibly, chlorinated plastics. Line 27 pg 31 states that ash will be stored before loadout. Information on health risks to workers are not included.If the railway culvert is to be used to direct stormwater, (line 3, pg 38) there are no guarantees that wastewater, laden with ash, will not be diverted to this culvert, to then impact on Thomas Creek, during storms or by accidental release.	The proposed project is a biomass to fuel project that meets the requirements of the Renewable Fuels Standard and is specific to woody biomass. The process for converting biomass to liquid fuel is pyrolysis (gasification in the absence of oxygen) to Fischer-Tropsch (F-T) conversion. This process does not include the combustion or incineration of biomass or any other material. The types of biomass proposed for use is described in Section 2.3.1 of the EA. The ash generated by the process is limited to the naturally occurring ash present in the biomass.
"There are no figures for these and we include the relevant section from another biomass application regarding increased numbers of deaths. www.foe.co.uk/groups/derby/news/Human-Rights-Deaths-Brought-Forward-Causing-Waste-of-Energy-Incineration- There are also no impact studies on effects on personnel at the incineration plant, which include DNA damage. Further information on www.sciencedirect.com/science/article/pii/S0304389409014563 Part 1 CARBON IMPACTS missing from the findings The incineration plant plans (classified as such under the UK/EU Waste Incineration Directive) wrongly imply that there is less than 25,000 metric tons of CO2 generated annually, (line 22-23 pg 28) stating that there is only the 'potential' to emit more than 25,000 GHG from the gasifying incineration of 182,000 tonnes of waste each year. (lines 1-9, pg 36) This is incorrect and not true as carbon dioxide emissions from biomass are approximately EQUAL to the tonnage of waste burned and can often be DOUBLE. http://www.rspb.org.uk/Images/biomass_report_tcm9-326672.pdf"	Section 3.2.2 of the Final EA has been revised to clarify the greenhouse gas emissions. The proposed project is a biomass to fuel project that meets the requirements of the Renewable Fuels Standard and is specific to woody biomass. The proposed project would use a gasification process called pyrolysis. The pyrolysis process does not include the combustion or incineration of biomass. The types of biomass proposed for use is described in Section 2.3.1 of the EA.
The developer also refers to the use of household waste (MSW) which contains up to 80% fossil-fuel plastics.	The proposed project is a biomass-to-fuel project that meets the requirements of the Renewable Fuels Standard and is specific to woody biomass. The types of biomass proposed for use is described in Section 2.3.1 of the EA and does not include municipal household waste.

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Often the value of carbon is worth far more than the wood. See some recent comments by economist Ernie Niemi and papers by John Campbell discuss these ideas. Without adequately balancing the cost of forest degradation by eliminating beetles and wildfires and its importance for wildlife, as well as ignoring the important contribution to carbon storage that unmanaged forests hold for global climate, the EA fails to demonstrate a positive net value.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations. Section 2.2 has been revised to include information on the available biomass with the project area.
One of the dominant assumptions is that forest thinning is needed to preclude large wildfires. There are several problems with this premise that are not adequately discussed using the latest science. A number of review articles have concluded that large wildfires are driven by climate/weather conditions, not fuels. Here is the most recent of these papers. http://headwaterseconomics.org/wphw/wp-content/uploads/wildfire- insights-summary.pdf I have attached several other papers and articles that draw similar conclusions.	The EA focuses on the potential impacts associated with the proposed project as described in Section 2.2 of the Final EA. The renewable biomass used in Red Rock Biofuels proposed plant are residuals from sawmills, forest management activities, and timber harvests. The references cited in the comment were reviewed and considered by the Air Force during their decision process.
Second, insects, fires, etc. are critical elements for maintaining ecological health of forests creating snags, dead woods, and other materials.	This comment is non-specific and its context to the Proposed Action is unclear.

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Third, all logging reduces carbon storage. Forest management and thinning degrades forests. Even compared burnt forests, a logged forest has less carbon. https://www.washingtonpost.com/news/energy-environment/wp/2016/02/04/ forests-are-supposed-to-help-stop-climate-change-these-forests-didnt/	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations. Section 2.2 has been revised to include information on the available biomass with the project area.

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POTENTIAL ON-AND-NEAR SITE INDIRECT EMISSIONS FROM TRUCK TRAFFIC Red Rock's application for a rezoning to Lake County, at Figure 1, showed that the incoming wood dump site will be about 1600 feet from the plant entrance. This means that the 65 trucks bringing in wood waste daily will execute a 3200 foot round trip on the property on unpaved roads. Tanker truck trips, each hauling away 5500 gallons of the produced liquid fuels, could generate another 26 truck trips/day (13 in and 13 out) daily. There are another 90 vehicle trips daily by the 45 site workers arriving and leaving, and additional vehicle trips by vendors, suppliers, and similar support activities. The Maricopa County Inventory Help Sheet shows a factor of 2.13 lb/VMT of PM-10 for heavy-duty vehicles travelling at 10 mph on unpaved roads. http://www.maricopa.gov/aq/divisions/planning_analysis/docs/instructions/vmt.pdf	Emissions from traffic fall into two categories: emissions that are regulated by the Oregon Department of Environmental Quality through the air contaminant discharge permit ("permitted" emissions), and emissions that are exempt from air permitting ("non-permitted" emissions.) The permitted emissions from on-site truck traffic were calculated based on maximum facility throughputs, site-specific silt loading and moisture content factors, and round-trip distances from actual facility design. Permitted emissions result from vehicles involved in biomass delivering and reclaim, ash loadout, and product loadout. These emissions were reported in Table 3.5 of the EA. Non-permitted emissions include commuter traffic and construction emissions. These emissions were reported in Table 3.6 of the EA. The EA has been updated to clarify the difference between permitted and non-permitted emissions and the source of emission factors used in the air impact analysis. The EA has been revised to reflect updated information on expected vehicular traffic, including fugitive dust and tailpipe emissions on site and biomass delivery trips. Detailed footnotes have been added to tables 3.5 and 3.6.
THE EA DID NOT ACCURATELY DESCRIBE THE AREA'S CLASSIFICATION AND THE ONGOING AIR QUALITY EXCEEDANCES The Oregon DEQ review of Red Rock's air pollution noted that, "…the source is located in an area that has exceeded US Environmental Protection Agency (EPA) standards for PM2.5." The EA is a flawed and inaccurate document because it did not disclose these exceedances to reviewers, even though DEQ admits to the violations. As a NEPA document, the EA is legally responsible for imparting, not obscuring information to reviewers, according to 40 CFR Part 1500.1 (b). The EA also inaccurately stated the project area was "unclassifiable" for PM 2.5. This is not true. The DEQ stated in its Review Report that Lake County is deemed "sustainable" for PM 2.5, not Unclassifiable, despite its long record of exceedances of the PM 2.5 standard."	Section 3.2.1 of the Final EA has been revised to include additional discussion on the PM Advance Plan and sustainment area.
THE EA INACCURATELY DESCRIBED THE PROJECT'S GREENHOUSE GAS EMISSIONS AND DID NOT ASSESS THAT IMPACT ACCORDING TO GUIDANCE The Guide states: If a proposed action is projected to cause direct emissions of 25,000 metric tons or more of CO-equivalent GHG emissions on an annual basis,	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and

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agencies should consider this an indicator that a Level III, Advanced Air Quality Assessment, is needed. (Sutley 2010)The EA did not provide a Level III, Advanced Air Quality Assessment. The EA claimed at p. 36 that Red Rock's GHG emissions would not exceed 25,000 t/y. However, the DEQ Air Contaminant Discharge Permit Review Report (hereinafter DEQ Report) at p. 10 shows that Red Rock's annual GHG emissions would exceed 272,000 t/y The Project will operate an amine scrubber that will essentially strip CO2 from the process gasses, and then will vent the CO2 without any control devices, into the air. Full disclosure to reviewers of the actual annual CO2 emissions tonnages would have provided opportunities for reviewers to suggest mitigation of this uncontrolled CO2 venting which should have, but didn't triggers an advanced air quality review.	has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The proposed Red Rock refinery will produce air pollution including fine particulate dust (PM 10 and PM 2.5) The vicinity is classified as "maintenance" for PM 10 and "sustainable" for PM 2.5,although violating PM 2.5 air quality standards Air Force has a Guide for assessing air quality impacts for its projects. This means that the EA is required to scrutinize and quantify Red Rock's air emissions, both direct and indirect, and permitted and unpermitted, both at the project site and project related emissions at off site locations. The Air Force has published a Guide for evaluation of air emissions in NPEA documents like this EA. The Guide is: AIR FORCE AIR QUALITY ENVIRONMENTAL IMPACT ANALYSIS PROCESS (EIAP) GUIDE (Hereinafter Guide) Prepared For: FRANK CASTANEDA, III, P.E., GS-14, DAF Air Quality Subject Matter Expert Air Force Civil Engineer Center, Compliance Technical Support Branch. http://aqhelp.com/Documents/FINAL%20AF%20AQ%20EIAP%20Guide%20102314.pdf The Guide explains the scope of the air quality rules for NEPA reviews of Air Force projects as follows: "The rule takes into account air pollution emissions associated with actions that are federally funded, licensed, permitted, or approved, and ensures emissions do not contribute to air quality degradation, thus preventing the achievement of state and federal air quality goals."	Section 3.1.2 of the EA discusses the impact of the Proposed Action on regional air quality. Section 3.2.3 of the Final EA has been revised to include further discussion on greenhouse gas emissions and climate change. The analysis was conducted in accordance with the December 2014 draft guidance document issued by the Council on Environmental Quality and the Air Force Guide on analyzing air quality impacts in NEPA documents.

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Red Rock is partly federally funded, the Guide applies. The Guide provided about 100 pages of instructions for evaluation of air emissions under NEPA. The EA did not comply with the Guide's instructions on the need for studies to evaluate large scale Greenhouse Gas emissions, and how to provide indirect emissions calculations, among other errors.	
The EA also lacks estimates of worst-case emissions in all instances, although the Guide states those Emissions "must be calculated." The EA does provide emissions figures that assume the facility will comply with its permit conditions, but that is not a "worse case" emissions estimate.	Section 3.2.2 and Section 3.2.3 of the EA discusses the impact of the Proposed Action on regional air quality. Red Rock Biofuels received an Air Contaminant Discharge Permit on June 24, 2015 meeting the Oregon Department of Environmental Quality's rules and regulations. According to the AF Guide, worst case emissions estimates are required for each pollutant of concern. The HAPs emissions from the proposed biofuels facility are well below HAP Major Source Thresholds, and thus are not considered a pollutant of concern. Table 3.5 contains detailed HAP emissions.
THE EA DID NOT PROVIDE COMPREHENSIVE INDIRECT EMISSIONS CALCULATIONS The Guide at page 24 asks preparers; 4.2.1 (b). Are both direct and indirect emissions accounted for? (Emphasis in original) It is important to define the action in relation to all potential sources of air emissions. NEPA and General Conformity both require consideration of both "direct" and "indirect" emissions, some of which might not be subject to air permitting procedures. Both "direct" and "indirect" emissions are caused by or initiated by the Federal action…	Section 3.2.3 of the Final EA has been revised to clarify the direct and indirect emissions that are included in the analysis. The analysis describes worker commuter vehicle emissions, construction emission estimates including tailpipe and particulate matter generated from earth moving activities, and delivery and other truck traffic emissions. Tables 3.5 and 3.6 contain direct and indirect emissions calculations.
"Direct emissions" occur at the same time and place as the action. "Indirect emissions" are reasonably foreseeable emissions that may occur later in time and/or farther removed from the action. The Red Rock project will generate considerable indirect emissions, including but not limited to tailpipe emissions from the 65 daily wood waste delivery truck round trips, the 20-odd tanker truck fuel pick-ups, the railroad engines' emissions from train pickups of fuels, the 45 workers' commuter traffic to and from the site, the dust from all of these vehicles driving on unpaved areas on the plant site, and the dust from all or most of these vehicles driving on the unpaved mile portion of Kadrmas Road and other unpaved roads and areas in and near the project site. Red Rock's contracted logging operations will also generate considerable indirect emissions.	Section 3.2.2 of the EA has been revised to clarify the direct and indirect emissions that are included in the analysis. The analysis describes worker commuter vehicle emissions, construction emission estimates including tailpipe and particulate matter generated from earth moving activities, and delivery and other truck traffic emissions. Kadrmas Road is scheduled to be paved following construction of the biofuels facility. Tables 3.5 and 3.6 contain vehicle emission data.

Appendix C Comments and Responses John Williams on behalf of the United Association of Plumbers and Fitters Local 290 and the Clean Air Coalition, continued	
Comment	**Response**
THE EA CONTAINS MISLEADING AND INCOMPLETE INFORMATION ON THE PROJECT AREA'S AIR POLLUTION The EA asserts at page 30 (Table 3.3) that concentrations of fine dust (PM 2.5) in Lakeview's air were 33.7 micrograms per cubic meter as a 24-hour average, and therefore met the standard of 35 ug/M3. However the EA cherry-picked air pollution data from up to six years ago; the period 2010-2012; to produce this result. The EA ignored more recent air pollution results and failed to inform reviewers that The EA's Table 3.3 contained stale, inaccurate data. The EA, by presenting only an averaged figure for those three years, also failed to alert reviewers that in 2011 and 2012, Lakeview's PM 2.5 pollution levels actually exceeded the Air Quality Standards, and has been worsening since 2010.	Section 3.2.1 of the EA has been revised to include the most recent ambient air monitoring data available. Table 3.3 contains updated monitoring data.
RAIL SPUR CONSTRUCTION NOT MENTIONED The addition of a rail spur to service the Red Rock facility will also require new construction activity; which is an impact not apparently considered by the EA, and which would produce addition particulate emissions from surface disturbance activities.	The Description of the Proposed Action has been revised to more clearly describe the construction of the rail spur. Construction emissions are detailed in Table 3.6 and include the construction of the rail spur.
LOGGING OPERATIONS EMISSIONS Red Rock's wood waste suppliers will also produce considerable emissions from their logging operations on public and private lands. Logging operations often utilize unpaved roads in and near the logged forest and those will be PM emissions sources, along with on-site internal combustion engines for logging equipment such as saws and compressors. The Air Force has some jurisdiction over the biofuel gathering activities because, as listed on p. 2 of the EA, the biofuel supplies must meet at least 3 Air Force and regulatory criteria. The EA is deficient for not discussing, much less calculating the air quality and other impacts from Red Rock's lumber supply operations. That lumber supply activity would not occur but for Red Rock's demand for over 330,000 tons of biomass every year; an amount that would exceed the fuel needs of a 25 megawatt wood fired power plant."	Tables 3.5 and 3.6 have been revised to reflect updated information on expected vehicular traffic, including fugitive dust and tailpipe emissions on-site and from feedstock collection.

Appendix C Comments and Responses John Williams on behalf of the United Association of Plumbers and Fitters Local 290 and the Clean Air Coalition, continued	
Comment	**Response**
The EA only included a small fraction of these indirect emissions; it showed some of the fugitive dust generated by truck traffic at the Red Rock site. The EA's estimate of less than 1 ton/year of indirect emissions from truck traffic in Table 3.5 and 3.6 is not accurate and is far too low. Part of the problem is the EA's failure to consider the predicted volumes of truck trips and fuel gathering activities needed to support the Red Rock refinery.	Tables 3.5 and 3.6 have been revised to reflect updated information on expected vehicular traffic, including fugitive dust and tailpipe emissions on-site and from feedstock collection.
The Red Rock project will generate considerable indirect emissions, including but not limited to tailpipe emissions from the 65 daily wood waste delivery truck round trips, the 20-odd tanker truck fuel pick-ups, the railroad engines' emissions from train pickups of fuels, the 45 workers' commuter traffic to and from the site, the dust from all of these vehicles driving on unpaved areas on the plant site, and the dust from all or most of these vehicles driving on the unpaved mile portion of Kadrmas Road and other unpaved roads and areas in and near the project site. Red Rock's contracted logging operations will also generate considerable indirect emissions.	Tables 3.5 and 3.6 have been revised to reflect updated information on expected vehicular traffic, including fugitive dust and tailpipe emissions on-site and from feedstock collection.
THE EA INACCURATELY DESCRIBES THE RESULTING TRUCK TRAFFIC VOLUMES AND FAILS TO CALCULATE THESE TRUCK-RELATED AND OTHER INDIRECT EMISSIONS. The Ea asserts at p. 20 there will only be 40-50 trucks per day delivering woody biomass to the refinery. This figure is significantly (20-30%) below DEQ's estimate of 65 potential truck traffic trips (Red Rock Air Permit Review at p. 5.)	Tables 3.5 and 3.6 have been revised to reflect updated information on expected vehicular traffic, including fugitive dust and tailpipe emissions on-site and from feedstock collection.
The EA says the Refinery will process 170,000 tons/year of biomass. However the DEQ Review stated at p. 5 that Red Rock will process over 330,000 ton/year of materials, mostly from logging operations.	The EA refers to 170,000 bone dry tons per year of feedstock, while the material received at the facility will not be bone dry, but rather may include approximately 50% moisture. To accurately account for the number of trucks delivering feedstock to the facility and particulate emissions from other feedstock handling operations, the air permit assumes 331,818 tons per year of biomass as-received (wet). The Description of the Proposed Action of the Final EA has been revised to include both values (as-received and bone dry tons).
The EA also fails to describe the facility's 12.66 ton /year of hazardous air pollutants (HAP) and the likelihood of a worse case emissions of HAPs.	Section 3.2.2 of the EA discusses the impact of the Proposed Action on regional air quality. Red Rock Biofuels received an Air Contaminant Discharge Permit on June 24, 2015 meeting the Oregon Department of Environmental Quality's rules and regulations. According to the AF Guide, worst case emissions estimates are required for each pollutant of concern. The HAPs emissions from the proposed biofuels facility are well below HAP Major Source Thresholds, and thus are not considered a pollutant of concern.

Appendix C Comments and Responses John Williams on behalf of the United Association of Plumbers and Fitters Local 290 and the Clean Air Coalition, continued	
Comment	**Response**
The EA also fails to disclose there could be as many as twenty fuel tanker trucks leaving and arriving daily. The DEQ permit review states that tanker trucks will haul fuels away from the facility. The facility has obtained a permit to build and operate a dock for loading fuel into tanker trucks (EU27).	Under normal operating scenarios, fuel produced will be hauled away from the facility via rail car. The loading rack was included in the air permit as a fallback shipping method. Tables 3.5 and 3.6 have been revised to reflect updated information on expected vehicular traffic, including fugitive dust and tailpipe emissions on-site and from feedstock collection.
The EA's failure to identify the serious and adverse impacts from the refinery's emissions of pollutants that already exceed Standards, and its gross mis statement of the amount of GHG emissions, should prompt rejection of the EA and preparation of an EIS	The Department of Defense determined that the Proposed Action warrants an Environmental Assessment with a Finding of No Significant Impact because the action will not have a significant impact on the natural and human environment, and thus not be subject to preparation of an Environmental Impact Statement. Planned mitigation is used to reduce the potential impacts below a threshold of significance or to minimize the potential environmental effects. The Air Force and other agencies use mitigation to avoid, minimize, rectify, reduce, or compensate the adverse environmental impacts associated with their actions, per 40 C.F.R. § 1508.2. As described in the EA, there are no significant environmental effects from the Proposed Action that are above a threshold of significance.

Appendix C Comments and Responses Klamath Tribes	
Comment	**Response**
The area is a highly culturally significant area, and The Klamath Tribes cannot support the destruction of our cultural sites, and there for cannot support the project without on and off project mitigation	The Air Force consulted under the NHPA Section 106 with the Klamath Tribes. In fact, the Klamath Tribes are a concurring party to the MOA that was executed to mitigate adverse effects in the APE. If at any time the Klamath Tribes object to implementation of the MOA, they can raise it to a signatory or invited signatory who can determine if it warrants objection under the dispute resolution clause.

Appendix C Comments and Responses Northwest Environmental Defense Center	
Comment	**Response**
The Department Must Issue an Environmental Impact Statement NEPA's implementing regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its Proposed Action are "significant" and thereby require preparation of an EIS. Id . at § 1501.4. In determining whether the Proposed Action is "significant," the agency must consider the degree to which the action "may adversely affect an endangered or threatened species," the "[u]nique characteristics of the geographic area;" the "degree to which the Proposed Action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources," "the effects on the quality of the human environment are likely to be highly controversial, and "the possible effects on the human environment are highly uncertain or involve unique or unknown risks." Id . at §1508.27(b). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." Id. at § 1508.27(b)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." Pub. Serv. Co. v. Andrus , 825 F. Supp. 1483, 1495 (D. Idaho 1993); see also Nat'l Audubon Soc'y v. Hoffman , 132 F.3d 7, 18 (2d Cir. 1997). Fundamental to this analysis is the requirement that the agency review the potential impacts of the entire proposal. Here, the purpose of this proposal is to design, construct and and operate a domestic commercial-scale Integrated Biofuel Production Enterprise capable of producing at least 15.6 million gallons of biofuel annually. To accomplish this, Redrocks Biofuel has proposed to build a facility that will convert approximately 170,000 tons of woody biomass in to approximately 7.2 MMgal jet fuel, 7.2 MMgal diesel fuel, and 3.6 6 MMgal naphtha. This is the stated purpose of the project. However, the reader of the EA knows virtually nothing about how Red Rocks LLC plans to obtain the raw materials for this project. Instead, the EA addresses only the direct impacts associated with the development of the facility site. This limited analysis is in no way sufficient to satisfy the requirements to address the direct, indirect and cumulative impacts of the Proposed Action. 40 C.F.R. § 1508.25(c). Here, because the purpose of the facility is to develop alternative fuel source operation, the project's direct impacts are generally those that will result from the	The Department of Defense determined that the Proposed Action warrants an Environmental Assessment with a Finding of No Significant Impact because the action will not have a significant impact on the natural and human environment, and thus not be subject to preparation of an Environmental Impact Statement. As described in the EA, there are no significant environmental effects from the Proposed Action that are above a threshold of significance. The types of renewable biomass materials are described in Section 2.3.1 of the final EA. The renewable biomass materials used by the proposed plant would be residual materials from sawmills, forest management activities such as pre-commercial thinning, forest restoration and fuels treatments, and timber harvests. The volume of residual material available from these sources are estimated in the publicly available Department of Energy's 2011, and 2016 Billion Ton biomass assessment reports.

Appendix C Comments and Responses Northwest Environmental Defense Center, continued	
Comment	**Response**
construction and operation of the facility and the activities necessary to obtain the feedstock for the facility. The indirect impacts, in turn, are those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Id . § 1508.8(b). Here, those will the ways that human use of an area changes as a result of the Proposed Action, and the consequential effects of those changed uses on air, water, and ecosystems, including the areas where the feedstock is produced. Id. A. The Department Must Issue an Environmental Impact Statement NEPA's implementing regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its Proposed Action are "significant" and thereby require preparation of an EIS. Id . at § 1501.4. In determining whether the Proposed Action is "significant," the agency must consider the degree to which the action "may adversely affect an endangered or threatened species," the "[u]nique characteristics of the geographic area;" the "degree to which the Proposed Action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources," "the effects on the quality of the human environment are likely to be highly controversial, and "the possible effects on the human environment are highly uncertain or involve unique or unknown risks." Id . at § 1508.27(b). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." Id. at § 1508.27(b)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." Pub. Serv. Co. v. Andrus , 825 F. Supp. 1483, 1495 (D. Idaho 1993); see also Nat'l Audubon Soc'y v. Hoffman , 132 F.3d 7, 18 (2d Cir.1997).	
"The Department's NEPA alternatives analysis is significantly flawed. "[C]consideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process." Bob Marshall Alliance v. Hodel , 852 F.2d 1223, 1228–29 (9th Cir. 1988). While an agency's obligation to consider alternatives under an EA is a lesser one than under an EIS, "NEPA requires that alternatives be given full and meaningful consideration, whether the agency prepares an EA or an EIS." Center for Biological Diversity v. National Highway Traffic Safety Admin. , 538 F.3d 1172, 1218 (9th Cir. 2008) (internal quotations omitted). Accordingly, EAs must analyze all reasonable alternatives and explain why an alternative was eliminated. Cursory or conclusory assertions are not appropriate explanations. Greater Yellowstone Coalition v. Flowers , 359 F.3d 1257, 1277 (10th	The Air Force previously evaluated the applicant's proposed project and site and determined that Red Rock Biofuel's met the criteria for an award under the ADBPP Program. As indicated in Section 1.2, this EA evaluates the potential environmental consequences involved with meeting the Department's goal in establishing a commercially viable biofuel production capability at a specific location. NEPA, through its implementing regulations, requires Federal agencies to document, analyze, and review Proposed Actions and potential reasonable alternatives. Sections 2.3.1 and 2.3.2 of the EA describe the ADBPP's objectives, requirements and site selection criteria that were used to consider site alternatives for the Proposed Action. Section 2.3.3 describes alternatives that meet the selection standards and were analyzed in the EA. Section 2.4 discusses alternatives that were considered but

Appendix C Comments and Responses Northwest Environmental Defense Center, continued	
Comment	**Response**
construction and operation of the facility and the activities necessary to obtain the feedstock for the facility. The indirect impacts, in turn, are those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Id . § 1508.8(b). Here, those will the ways that human use of an area changes as a result of the Proposed Action, and the consequential effects of those changed uses on air, water, and ecosystems, including the areas where the feedstock is produced. Id. A. The Department Must Issue an Environmental Impact Statement NEPA's implementing regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its Proposed Action are "significant" and thereby require preparation of an EIS. Id . at § 1501.4. In determining whether the Proposed Action is "significant," the agency must consider the degree to which the action "may adversely affect an endangered or threatened species," the "[u]nique characteristics of the geographic area;" the "degree to which the Proposed Action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources," "the effects on the quality of the human environment are likely to be highly controversial, and "the possible effects on the human environment are highly uncertain or involve unique or unknown risks." Id . at § 1508.27(b). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." Id. at § 1508.27(b)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." Pub. Serv. Co. v. Andrus , 825 F. Supp. 1483, 1495 (D. Idaho 1993); see also Nat'l Audubon Soc'y v. Hoffman , 132 F.3d 7, 18 (2d Cir.1997).	
Cir. 2004). NEPA regulations mandate that an agency "shall to the fullest extent possible: use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 40 C.F.R. § 1500.2(e). Environmental analysis documents must "[r]rigorously explore and objectively evaluate all reasonable alternatives" to the project. 40 C.F.R. § 1502.l4(a). A decision maker must explore alternatives in sufficient detail to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public." Id . § 1502.14. All reasonable alternatives must receive a rigorous exploration and objective evaluation "of environmental effects and values." Id . § 1501.2(b).	eliminated from further analysis in the EA because they did not meet the standards defined in Sections 2.3.1 and 2.3.2.

Appendix C Comments and Responses Northwest Environmental Defense Center, continued	
Comment	**Response**
construction and operation of the facility and the activities necessary to obtain the feedstock for the facility. The indirect impacts, in turn, are those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Id . § 1508.8(b). Here, those will the ways that human use of an area changes as a result of the Proposed Action, and the consequential effects of those changed uses on air, water, and ecosystems, including the areas where the feedstock is produced. Id. A. The Department Must Issue an Environmental Impact Statement NEPA's implementing regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its Proposed Action are "significant" and thereby require preparation of an EIS. Id . at § 1501.4. In determining whether the Proposed Action is "significant," the agency must consider the degree to which the action "may adversely affect an endangered or threatened species," the "[u]nique characteristics of the geographic area;" the "degree to which the Proposed Action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources," "the effects on the quality of the human environment are likely to be highly controversial, and "the possible effects on the human environment are highly uncertain or involve unique or unknown risks." Id . at § 1508.27(b). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." Id. at § 1508.27(b)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." Pub. Serv. Co. v. Andrus , 825 F. Supp. 1483, 1495 (D. Idaho 1993); see also Nat'l Audubon Soc'y v. Hoffman , 132 F.3d 7, 18 (2d Cir.1997).	
Here, the limited scope of the EA, as discussed above, irrevocably undermines the Department's alternatives analysis. However, even taking the analysis that does exist on face value, the Department has failed to comply with NEPA. Federal agencies cannot reduce the NEPA's alternative analysis to a binary choice between granting and denying an application. See, e.g. , Save Our Cumberland Mountains v. Kempthorne , 453 F.3d 334, 345 (6th Cir. 2006). That is precisely what the Department has does here with the three alternatives set forth in the EA. The EA sets forth the proposed action as a site choice between two nearly identical plots, and a "no action" alternative. The Ninth Circuit has rejected this type of avoidance approach by agencies in the past. See Western Watersheds Project v. Abbey , 719 F.3d 1035 (9th Cir. 2013); Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d	

Appendix C Comments and Responses Northwest Environmental Defense Center, continued	
Comment	**Response**
construction and operation of the facility and the activities necessary to obtain the feedstock for the facility. The indirect impacts, in turn, are those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Id . § 1508.8(b). Here, those will the ways that human use of an area changes as a result of the Proposed Action, and the consequential effects of those changed uses on air, water, and ecosystems, including the areas where the feedstock is produced. Id. A. The Department Must Issue an Environmental Impact Statement NEPA's implementing regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its Proposed Action are "significant" and thereby require preparation of an EIS. Id . at § 1501.4. In determining whether the Proposed Action is "significant," the agency must consider the degree to which the action "may adversely affect an endangered or threatened species," the "[u]nique characteristics of the geographic area;" the "degree to which the Proposed Action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources," "the effects on the quality of the human environment are likely to be highly controversial, and "the possible effects on the human environment are highly uncertain or involve unique or unknown risks." Id . at § 1508.27(b). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." Id. at § 1508.27(b)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." Pub. Serv. Co. v. Andrus , 825 F. Supp. 1483, 1495 (D. Idaho 1993); see also Nat'l Audubon Soc'y v. Hoffman , 132 F.3d 7, 18 (2d Cir.1997).	
800, 813 (9th Cir. 1999) (per curiam) (concluding that the EIS violated NEPA when the two action alternatives considered in detail were "virtually identical"). Indeed, "the evaluation of 'alternatives' mandated by NEPA is to be an evaluation of alternative means to accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals." Van Abbema v. Fornell , 807 F.2d 633, 638 (7th Cir. 1986). As a result, the Department must not only conduct an alternative analysis that addresses the full suite of activities that will make up the proposed action, it must also explore reasonable alternatives the facility design and location."	

Appendix C Comments and Responses Oregon Department of Environmental Quality	
Comment	**Response**
Oregon has different green house gas (GHG) reporting requirements than EPA that should be acknowledged. At the top of page 36, it discusses the September 22, 2009 EPA Mandatory Reporting of GHG and explains that the threshold for reporting is 25,000 metric tons of GHG (as C02e). For Oregon, the GHG threshold is 2,500 metric tons of GHG (as C02e) as initially established in October 2008 and revised again December 2015. The rules associated with GHG reporting requirements are found in Oregon Administrative rules 340-215-0030 and 0040. See: http://arcweb.sos.state.or.us/pages/rules/oar_s_300/oar_340/340_215.html	Section 3.2.3 has been revised to include both EPA and DEQ GHG reporting requirements.
It is correct that the area is unclassifiable for PM2.5 and in 1993 part of Lake County was designated nonattainment for PM10 and is now a maintenance area as of 2006 It should be noted that the area now has a PM Advance Plan submitted September 2014 that was generated when Lakeview violated the PM2.5 standard after the 2006 standard nonattainment area designations were published. We suggest you add the PM Advance Plan to the analysis. At the time, the area met the standard. The Table on page 30 is correct that the 3 year average for 2010-2012 was 33.7 µg/m3 for the 98%ile to compare against the 24-hr standard of 35 µg/m3 and the annual average was 8.4 µg/m3 to compare with the annual standard of 12.0 µg/m3.	Section 3.2.1 of the Final EA has been revised to include a description of the PM Advance Plan.
Lakeview and Lake County have also opted into an Oregon program called a sustainment area in April 2015. The urban growth boundary of Lakeview was designated a sustainment area by the Oregon Environmental Quality Commission while maintaining its status as an area in federal attainment. The sustainment status allows more flexibility for economic development while concurrently protecting air quality Before the sustainment area designation, Lakeview like other communities that exceeded or were close to the standard were limited by rules that made it extremely difficult for DEQ to permit new or expanding sources in these air quality challenged areas. With the sustainment rules, careful analysis to control emissions from existing sources could be weighed against proposed new or expanding industrial source emissions. The sustainment area rules provide a mechanism for creating a net air quality benefit by applying emission offsets to new industrial projects. For more information on Lakeview and its sustainment designation please see: http://www.deq.state.or.us/aq/permit/docs/LSAsupplnfo.pdf"	Section 3.2.1 of the Final EA has been revised to include additional discussion on the PM Advance Plan and sustainment area. The air permit issued to Iberdrola has expired.

Appendix C Comments and Responses Oregon Department of Environmental Quality, continued	
Comment	**Response**
However, we suggest you add both 2011-2013 and 2012-2014 to your analysis. If you include the next year 2013, the 2011-2013 98%ile is much higher for the 24-hr average at 57.7 µg/m3 for the 24-hr average (57.3 µg/m3 when wildfire data is removed) compared to the standard of 35 µg/m3. The higher 3 year average prompted the community to participate in a voluntary program called PM Advance sponsored by EPA. They prepared a robust plan to address the more recent 3 year average responding to the need to return the community back to meeting the standard. In addition, EPA recognized the participation.	Section 3.2.1 of the Final EA has been revised to include the most recent ambient air monitoring data available.

Appendix C **Comments and Responses** **Oregon State Historic Preservation Office**	
Comment	**Response**
Having checked the proposed alternate location within our statewide GIS database we find that this location is also in an area of high sensitivity for archaeological resources. The database shows the alternate location has not been previously surveyed for archaeological resources, but previous surveys in an adjacent parcel did identify a number of archaeological sites. When considering alternate locations for similar projects in the past, our office has seen some level of archaeological survey conducted within the alternate locations to determine if important archaeological resources are present. This information can be useful in determining the feasibility of the alternate location, and so would be important to include in a project's EA. If the alternate location for the Red Rock Biofuels Project is selected in the EA review process, an intensive archaeological survey would be needed. This survey would identify any archaeological resources, evaluate these resources for eligibility for inclusion in the National Register of Historic Places, and determine the effect of the proposed project on archaeological sites.	Section 3.4 of the EA discusses the high potential for cultural resources and historic properties at the alternative site. If the alternative site were to be selected for the Proposed Action, the AFRL would notify the OR SHPO and continue consultation. An intensive archeological survey of the alternative site would be conducted prior to any site development activities.

Appendix C Comments and Responses Oregon Wild and Oregon Natural Desert Association	
Comment	**Response**
The EA says that GHG need to be considered if they exceed 25,000 tonnes/yr of CO2e, then refers readers to Appendix A. This Appendix is difficult to interpret. Appendix A (p 379) uses lots of strange acronyms like LDGV, LDGT, LDDT, COM BUS, etc. It expresses emissions in grams instead of tonnes. It never seems to fully disclose the cumulative emissions of CO2e. NEPA analysis is supposed to be clear and accessible to the reader. This analysis fails the test.	Appendix A has been reviewed for acronyms that are not defined and updated accordingly.
Second, biomass subsidies are not limited exclusively to residues. Biomass incentives often extend the footprint of forestry activities, so that more acres are treated or more trees are removed. This undermines the suggestion that only residues are being utilized.	Biomass subsidies and incentives are beyond the scope of the purpose and need for this project as described in Section 1.1 of the EA. The effects of forestry activities which could provide source materials for the proposed plant and connected actions are evaluated under the applicable federal and state regulations. Section 2.3.1 of the Final EA was revised to clarify that the volume of renewable biomass is based on information in the publicly available reports by Department of Energy. These Department of Energy reports include a county-by-county estimate of the volume of renewable biomass available from timber harvest, forest management activities, and sawmill residuals.
The agency should disclose and describe the full environmental impacts of the proposed action without compensatory mitigation, then describe proposed mitigation and how it would compensate for the predicted impacts. The agency should specifically describe how mitigation would operate to preclude resource impacts, and clearly differentiate between avoidance and minimization measures from mitigation. The source and certainty of mitigation funding should also be discussed in the NEPA analysis, as well as the consequences if funding and implementation are not forthcoming. This is exactly how the EPA prefers to see mitigation discussed in NEPA analyses. See EPA's 2-18-04 letter on the Biscuit Fire Salvage DEIS.	Mitigation is not required to make the finding that the project is a FONSI. The Air Force reviewed the EPA's February 18, 2004 letter to the U.S. Forest Service on the Biscuit Fire EIS. EPA's comments to the U.S. Forest Service regarding the salvage of burned timber are not applicable to this proposed action.
The EA does not clearly disclose where this material will come from nor does it describe the effects of biomass removal from the forest. The local supply of biomass is not likely sufficient to supply the project on a sustainable basis. In 2015, the Fremont-Winema National Forest produced only 38,576 "green" tons of biomass. (USFS Timber Information Manager (TIM) database, Performance Accountability System, biomass accomplishment code (BIO-NRG)). Much of this biomass was produced outside of "Southern Lake County" which is the identified working circle for this project. In 2014, only 17,492 "green" tons of biomass were produced on BLM lands throughout the entire state of Oregon. (Oregon BLM 2014 Fact Book, http://www.blm.gov/or/onlineservices/files/2014_BLM_Facts.pdf). Only a small fraction of that biomass was produced in Southern Lake County.	Section 2.2 of the Final EA has been updated to describe that biomass sources could be from private, state, or federally administered lands. The sources for biomass are not limited to the amount of biomass produced on the Fremont-Winema National Forest or Southern Lake County.

Appendix C Comments and Responses Oregon Wild and Oregon Natural Desert Association, continued	
Comment	**Response**
The EA needs to take a hard look at the climate impacts of the natural gas supply chain and other compounds produced and emitted by this biofuel refinery. This project will also use natural gas. The EA should disclose the adverse climate effects of this fossil fuel, including the methane leakage throughout the supply chain (e.g., fracking). The gasification and refining processes for this facility will produce a variety of chemical compounds. Some of these compounds will be (accidently or purposefully) emitted to the atmosphere. The EA must fully and accurately disclose the climate impacts of all the different emissions.	Section 3.2.2 of the Final EA has been revised to include a discussion on Climate Change. The proposed project meets the requirements of EPA's Renewable Fuel Standard as such the fuel is eligible to generate Renewable Fuel Identification Numbers. The carbon lifecycle analysis conducted by EPA during rulemaking includes the use of natural gas as the heat source for the process. It is outside the scope of this EA to evaluate the effects of fracking.
The project anticipates using 170,000 bone-dry tonnes of biomass per year. That biomass will be converted to fuels and other products most of which will be emitted to the atmosphere over relatively short time-scales. Approximately half of the dry weight of wood is carbon. Adding two oxygens atoms to each of those carbons results in CO2 equal to 3.67 times the weight of the carbon atoms alone. Based on this rough calculation, we estimate about 311,950 tonnes of CO2e/year will be produced by this facility. To this estimate, the EA needs to account for additional emissions from using natural gas, vehicles, machinery, emissions from land use not captured in the woody biomass delivered to the site, as well as emissions of other GHG with climate impacts far exceeding that of CO2. The biomass-gasification-to-Fischer-Tropsch pathway is likely to emit a wide range of organic molecules with potentially significant impacts on air quality and climate.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The EA needs to fully and accurately disclose the adverse effects of the biofuel facility on air quality. Lakeview has poor air quality, especially fine particulates (PM 2.5). This biofuel enterprise will likely make a bad situation worse in terms of air quality. This could have significant health impacts on sensitive populations within the local community.	Section 3.2.2 of the EA discusses the impact of the Proposed Action on regional air quality. Red Rock Biofuels received an Air Contaminant Discharge Permit on June 24, 2015 meeting the Oregon Department of Environmental Quality's rules and regulations.

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From this data and information it is clear that this project will not merely step into an existing market for biomass that can easily meet the needs of the Red Rock biofuel project, rather this project will create a new market for biomass (or greatly expand the relatively small existing local supply of biomass) in Southern Lake County. This means that as a result of this project, woody material that currently stays in the forest will be removed and delivered to Red Rock. The impacts of this woody habitat removal must be disclosed in the EA.	The analysis of the volume of biomass material needed for the 20 year operation of the proposed plant was conducted during the application for an award under the ADBPP. As described in Section 2.2 of the Final EA, biomass sources are not restricted to southern Lake County. The removal of woody material is evaluated under the applicable federal and state regulations.
The Southern Pacific Rail line that runs along the west boundary of the preferred site, does not protect the site from flooding because it was not designed to be impermeable to water.	The Department of Homeland Security's Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) through its Regional Offices. The FEMA issued a Letter of Map Revision (LOMR) on December 18, 2015 and has determined that a revision to the flood hazards depicted in the Flood Insurance Study report and/or NFIP map is warranted.
The EA failed to take a hard look at the effects of biomass removal compared to natural disturbance processes. Forest wildlife in this landscape evolved with natural forest patterns that were largely determined by the frequency, severity, and spatial pattern of fires and other disturbances. Some argue that logging mimics fire, but this is not well supported. It is important that the EA clearly describe the ecological differences between logging and natural disturbance.	The EA analyzes the potential impacts associated with the proposed project regarding the use of biomass to produce transportation fuel. Section 2.3.1 of the Final EA has been revised to clarify that the renewable biomass used in the proposed plant will be a mix of mill and harvest residues, pre-commercial thinnings, and slash and brush. The analysis of forest management activities is conducted by the U.S. Forest Service, the Bureau of Land Management, or state agencies.
Although many existing silvicultural systems have been designed to mimic stand-scale natural disturbances, McRae et al. (2001) and Palik et al. (2002) remind us that natural disturbances are inherently different from those of silviculture. One difference, of course, relates to the amount of carbon removed from the site when harvesting a forest. Removals tend to be much greater with harvesting than for fire, for example. Fire tends to create a complex mosaic of forest types and ages on the landscape. Forest harvesting, as commonly practiced, tends to simplify forest composition and structure. Crow, T.R. and A.J. Perera. 2004. Emulating natural landscape disturbance in forest management – an introduction. Landscape Ecology 19: 231-233. http://www.firescience.gov/projects/01-1-3-43/project/01-1-3-43_01_1_3_43_Deliverable_02.pdf	The EA focuses on the potential impacts associated with the proposed project regarding the use of biomass to produce transportation fuel. The evaluation of silvicultural practices is outside of the scope of analysis for the proposed project.
There are a variety of trade-offs associated with removing woody material from the forest. Road construction and use of heavy equipment fragment habitat, compact and disturb soil resulting in reduced site productivity, increased risk of erosion and water pollution, and loss of below-ground ecological processes. Reducing stand density in forests compromises habitat for a variety of wildlife that depend on relatively dense	The EA focuses on the potential impacts associated with the proposed project regarding the use of biomass to produce transportation fuel. The evaluation of road construction and habitat fragmentation is outside of the scope of analysis for the proposed project. Reducing stand density and land management activities are evaluated under the applicable federal and state regulations. The analysis done by

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forest conditions and the abundant snag habitat that is associated with more dense forests. These wildlife include pine marten, three-toed woodpecker, pileated woodpecker, black-backed woodpecker, big game, goshawk, etc. Forests in south-central Oregon are still recovering from an unsustainable liquidation of old growth forests and large trees. Excessive density reduction that continues today could delay the restoration and recruitment of large trees and desired habitat conditions. Another trade-off is that density reduction, especially canopy thinning increases hazardous fire conditions. Canopy removal makes forests hotter, dryer, and windier, and it stimulates the growth of future hazardous fuels, especially surface and ladder fuels.	federal and state agencies include consideration of old growth forests, large trees, wildlife habitat, and fire and fuels management.
Juniper is a native species that provides habitat for native species and helps store carbon. Juniper is increasing due to fire suppression, increased grazing, and CO2 enrichment in the atmosphere that allows juniper to use water more efficiently and become more drought tolerant. There are several problems with relying on juniper to supply this biofuel refinery. First, juniper is not a renewable resource because it is not replanted. The goal of restoration is to remove the trees permanently, not to regrow them. Second, the area where juniper needs to be removed is somewhat limited. There may be good reason to remove small junipers that are encroaching on key habitat areas for sensitive species such as sage grouse, but that is just a subset of the landscape. Third, rangeland restoration does not require removal of juniper. Restoration can be accomplish by killing juniper and leaving them in place. This is the preferable approach for several reasons. It avoids roads and heavy equipment on sensitive rangeland soils. And it retains scarce on-site nutrients that are locked up in the juniper trees.	The EA focuses on the potential impacts associated with the proposed project regarding the use of biomass to produce transportation fuel. The evaluation of silvicultural practices such as the removal of juniper is outside of the scope of analysis for the proposed project. The evaluation of juniper removal and the potential effects on climate change and carbon storage are evaluated by federal and state agencies as part of their regulatory requirements. All applicable science is considered, as required by law, regulation, and policy. Exhaustive reviews of every literature citation are not required by NEPA.
Oregon Wild recognizes that there is a potential for biomass collection to provide restoration benefits. Biomass proponents are trying to commercialize biomass utilization that is a by-product of all forest activities, not just those that are beneficial, this means that biomass utilization creates incentives for harmful activities like clearcutting, road building, commercial removal of large old trees, etc. While ecological benefits are possible, the applicant and the EA fail to demonstrate those benefits or provide assurances that adverse effects will be avoided/mitigated. Importantly, this EA for the Red Rock Biofuels Project fails to say how much of the feedstock might come from legitimate restoration efforts, and how much will come from harmful logging practices.	Section 2.3.1 of the Final EA was revised to clarify that the volume of renewable biomass is based on information in the publicly available reports by Department of Energy. These Department of Energy reports include a county-by-county estimate of the volume of renewable biomass available from timber harvest, forest management activities, and sawmill residuals.
The EA should carefully consider the trade-offs associated with juniper removal. One of those trade-offs involves the lost opportunity to store carbon that mitigates global climate change. Landscape scale expansion of juniper woodlands is providing an	"The EA focuses on the potential impacts associated with the proposed project regarding the use of biomass to produce transportation fuel. The evaluation silvicultural practices such as the removal of juniper is outside of the scope of

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ecosystem service (carbon storage via natural afforestation) and juniper removal erases that benefit. Campbell, J.L., R. Kennedy, W.B. Cohen, and R. Miller. 2012. Regional carbon consequences of Western Juniper encroachment in Oregon. Journal of Rangeland Ecology and Management. 65(3):223-231. http://larse.forestry.oregonstate.edu/sites/larse/files/pub_pdfs/Campbell_etal_2012.pdf ("unlike forest growth which is balanced by natural disturbance, timber harvest, and land conversion, woody encroachment is assumed to be largely one-directional with the potential result of a [significant] North American net carbon sink. … [T]he highest biomass shrubs with which juniper competes in Oregon (namely, Artemisia spp.) have an average biomass per unit crown cover of only 8% that of juniper (derived from juniper allometry of Sabin [2008], and sage allometry of Rittenhouse and Sneva [1977]). This means that even when juniper cover replaces sage cover on a one-to-one basis (as reported by Miller et al. 2005), aboveground biomass lost in shrubs is less than 8% that gained in aboveground juniper biomass. … This study illustrates the capacity of woody removal, over very small areas, to offset encroachment over very large areas …"); See also Barger, N.N., A.R. Archer, J.L. Campbell, C. Huang, J.A. Morton, and A.K. Knapp. 2011. Woody plant proliferation in North American drylands: A synthesis of impacts on ecosystem carbon balance. Journal of Geophysical Research. 116, G00K07, doi:10.1029/2010JG001506.	analysis for the proposed project. The evaluation of juniper removal and the potential effects on climate change and carbon storage are evaluated by federal and state agencies as part of their regulatory requirements. Section 2.3.1 of the Final EA was revised to clarify that the volume of renewable biomass is based on information in the publicly available reports by Department of Energy. These Department of Energy reports include a county-by-county estimate of the volume of renewable biomass available from sawmill, forest management and timber harvest residuals. "
The ultimate source of the raw material of ecosystems that support clean water, habitat for fish & wildlife, carbon storage, recreation, and quality of life. Removing the biomass from these native ecosystems comes with significant trade-offs including , degraded soil, degraded habitat, GHG emissions, polluted water, degraded recreation and scenic values, etc. These impacts need to be fully disclosed in the EA.	Section 2.3.1 of the Final EA was revised to clarify that the volume of renewable biomass is based on information in the publicly available reports by Department of Energy. These Department of Energy reports include a county-by-county estimate of the volume of renewable biomass available from sawmill, forest management and timber harvest residuals. Chapter 3 of the Final EA analyzes the potential effects of transporting renewable biomass on resources.
Also, these biomass estimates need to be adjusted for water content. The federal forest agencies are reporting biomass production accomplishments in "green" tons, while Red Rock has specified their biomass requirements in "bone dry" tons. Green biomass is about 30-50% water by weight.	The Description of the Proposed Action in the Final EA has been revised to include both values (as-received and bone dry tons).
The EA needs to take a hard look at connected actions such as logging and the climate impacts including this facility's contribution to the Social Costs of Climate Change. Since the raw material for this biofuel enterprise is derived from "connected" logging activities, NEPA requires the EA to take a "hard look" at the effects of logging-	The NEPA process evaluates the effects of the proposed action and any cumulative effects from these actions with other activities that are proposed or connected to these actions. Projects that have "independent utility" are not "connected actions." The independent utility determination is "whether each of two projects would have taken place with or without the other . . . ." Forest management and timber harvest

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related GHG emissions. (40 CFR 1508.25). The Air Force cannot avoid the mandatory requirement to consider the effects of biomass collection on forest ecosystems. According to the CEQ regulation which are applicable to all federal agencies, the scope of NEPA analyses must include "(1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification." (40 CFR 1508.25) Clearly, biomass raw material will not be supplied to this biofuel refinery unless and until logging (and possibly milling) occurs to produce the woody waste material or by-product.	activities on federal, state, and private lands are independent activities that would occur with or without the construction and operation of Red Rock Biofuels proposed plant. The Air Force's authorization of funding for Red Rock Biofuels to purchase of equipment a commercial scale renewable biofuels facility and associate infrastructure to produce jet fuel, diesel fuel, and naphtha (a gasoline blendstock). Section 2.3.1 of the Final EA has been revised to include a description of the types of renewable biomass used to produce the fuel.
"Residues" are connected to harmful logging activities. The supply of biomass residuals is most often coupled with other economic activities (e.g. logging, roads, fire suppression) which may be counter to ecological restoration objectives. The EA should fully disclose the adverse ecological effects of the activities connected to production of biomass residuals.	Section 2.3.1 of the Final EA has been updated to clarify that sources for biomass could be from private, state, or federally managed lands. The EA focuses on the potential impacts associated with the proposed project regarding the use of biomass to produce jet fuel and diesel. The production of biomass as a by-product of logging and thinning, and land management activities are evaluated under the applicable federal and state regulations. This analysis includes consideration of the amount of biomass remaining after harvest to meet requirements for ecosystem health.
The EA needs to disclose the effects of developing on a floodplain under the influence of climate change. The preferred facility development site is located within the 100 year floodplain of Goose Lake. The EA needs to account for the fact that climate change is likely to intensify the hydrologic cycle and could cause more frequent and more intense floods, relative to the historic pattern. The EA says "structures located within the Special Flood Hazard Area have a 26-percent chance of flooding during the life of a standard 30-year mortgage …" This percentage is likely to increase due to climate change.	The Final EA includes analysis the facilities proposed to be constructed within the floodplain mapped by FEMA. On December 18, 2015, FEMA approved a revision to the mapped floodplain. The Final EA has been revised to indicate that the alternative site is entirely within the 100-year floodplain. The Final EA clarifies that the tank farm would be constructed within the 100-year floodplain, and the total 43,560 square feet would not alter the historic flood patterns, intensity, or hydrologic cycle. FEMA identifies areas on the Flood Insurance Rate Map as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. FEMA's National Flood Plain Insurance Program (NFIP) clarifies the risk of a 100-year flood will happen sometime during the life of a 30-year mortgage—a 26% chance for a structure located in the SFHA.

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Disclose whether the cumulative effects of logging-related GHG emissions are consistent with emissions reduction goals established by state or federal government or international agreements. In Paris on December 12, 2015 the United Nations - Framework Convention on Climate Change agreed to a landmark climate agreement including Article 5 which says "Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4, paragraph 1(d), of the Convention, including forests." #COP21, aka Paris Agreement. http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
Biomass proponents often assert that biomass is just residue from logging or milling so it just makes energy from material that would otherwise have caused GHG emissions from decomposition or burning. This is a questionable assumption for several reasons. First, there are already markets for a lot of forest industry residues. The climate consequences of those alternative products might be similar or better than bioenergy. For instance, sawdust might end up in long-term storage in particle board used for subflooring.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
Logging related GHG emissions (and forgone opportunities for increased storage of carbon in forests) will conflict with these state, federal and international GHG reduction goals.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
Disclose the social cost of carbon as a proxy for the impacts of GHG emissions. GHG emissions from logging (and other land management activities) impose significant costs on society, such as the cost of damage caused by climate change and the costs of adapting to climate change and the cost of sequestering carbon to mitigate emissions. CEQ's draft guidance on NEPA and Climate Change recognizes that the social cost of carbon ("SCC") is a "harmonized, interagency metric that can provide decision	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis

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makers and the public with some context for meaningful NEPA review." 79 Fed. Reg. 77802, 77827. "The SCC estimates the benefit to be achieved, expressed in monetary value, by avoiding the damage caused by each additional metric ton (tonne) of carbon dioxide (CO2) put into the atmosphere. Ruth Greenspan and Dianne Callan, World Resources Institute, More than Meets the Eye: The Social Cost of Carbon in U.S Climate Policy, in Plain English (July 2011) at 1, http://pdf.wri.org/more_than_meets_the_eye_social_cost_of_carbon.pdf. The NEPA analysis should carefully disclose these social costs. The express purpose of SCC analysis is to provide an apples-to-apples basis for comparing a project's economic benefits with GHG pollution impacts (costs). Where SCC is not analyzed and disclosed, these impacts (costs) are hidden from the public and, in fact, often "paid for" by the broader environment and public in the form of degraded ecological resiliency, public health impacts, and more.	process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
See High Country Conservation Advocates v. U.S. Forest Service, — F.Supp.3d —, 2014 WL 2922751 (D. Colo. June 27, 2014) (holding that BLM's NEPA analysis of climate change impacts was inadequate, and that the EIS must provide a justification for not using the social cost of carbon as a protocol to evaluate impacts). If the agency chooses to disclose the economic and other benefits of logging, they must also disclose the social costs. See Sierra Club v. Sigler, 695 F.2d 957, 979 (5th Cir. 1983), Hughes River Watershed Conservancy v. Glickman, 81 F.3d 437, 448 (4th Cir. 1996); Columbia Basin Land Prot. Assn v. Schlesinger, 643 F.2d 585, 594 (9th Cir. 1981).	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The NEPA analysis needs to recognize the full life-cycle of forests including the ecological, hydrological and carbon-cycle value of both live and dead trees.	The Proposed Action meets the requirements of EPA's Renewable Fuel Standard and the manufactured fuel is eligible to generate Renewable Identification Numbers. EPA conducted the carbon lifecycle analyses prior to rulemaking. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process in under the Renewable Fuel Standard regulations.
Biomass has a lower energy content than fossil fuels, so using biomass as fuel will actually result in greater greenhouse gas emissions per unit of energy. This means the short-term effect of biofuels is to make climate change worse instead of better.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction

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	in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The Air Force needs to conduct a full life-cycle carbon assessment of this project, and they need to account for and mitigate the adverse climate effects caused after emissions and before regrowth of the forests where the raw materials are collected. The EA needs to recognize that simply repaying the carbon debt is not enough, because the climate effects during the payback period have not yet been mitigated. The analysis of this project needs to account for full climate parity which occurs long after the carbon debt is repaid.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
The finding related to floodplain are unfounded. The EA includes a Finding of No Practicable Alternatives to building on the floodplain. The EA does not even consider alternative locations for this facility that make much more sense from several perspectives, including economical access to biomass supplies, access to markets, etc.	The range of alternatives considered is relative to the purpose and need of the proposal. The site was evaluated based on the criteria listed in Section 2.3.1 and 2.3.2. The facilities are required to obtain a floodplain permit as described in Section 1.4.2 of the Final EA and are designed to meet Lake County's building requirements as described in Section 1.4.2.
The EA says that the Red Rock biofuel enterprise will rely on "woody biomass from local sources, to include but not limited to, commercial lumber sawmill and forest by-products…" Supplying this facility with 500 bone dry tons/day of woody biomass will have a significant impact on thousands of acres of vegetation and habitat per year in the surrounding area. But the EA limits is discussion of impacts to vegetation and wildlife to construction impacts on the relatively small footprint of the biofuel refinery. Our scoping comments highlighted the need for a broader scope of analysis. EA (p 50) says "Vegetation at the site options is largely comprised of grassland. … The primary direct impact from construction would be the cutting, clearing, and removal of existing vegetation within the construction workspace for the facility, the rail spur, and the pipeline lateral. … Most wildlife species that occur within the proposed project area are adapted to living in disturbed areas and co-existing with human activity." This is a grossly inadequate analysis of the impacts of this project on vegetation and wildlife habitat.	"The types of renewable biomass are discussed in Section 2.3.1 of the Final EA. As identified in the comment these wastes could be from sources in Oregon, California, or Nevada and are not limited to Lake County. The EA evaluated the direct, indirect, and cumulative impacts on resources from the Proposed Action. The Final EA was revised to include hauling biomass to the proposed plant from sources that meet the criteria described in Section 2.3.1. "
Forests in south-central Oregon tend to be dry and exhibit low productivity. Restoration requires only light thinning and removal of surface and ladder fuels. There is not very much vegetation on each acre to begin with and not much needs to be removed, so it is highly inefficient to collect forest residuals in this setting....The	The renewable biomass are discussed in Section 2.3.1 of the Final EA. As identified in the comment these wastes could be from sources in Oregon, California, or Nevada and are not limited to Lake County. The EA evaluated alternatives that met the purpose and need for the project as described in Section 1.1 for biomass sources

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figures below show that Lake County is not a good place to look for biomass. The EA needs to develop an alternative that relies on more economical and more sustainable sources of raw material.	that meet the criteria described in Section 2.3.1.
Global warming will reduce the steepness of the temperature gradient between the equator and poles. This is expected to slow down the jet stream and make it more sinuous. This means that weather systems (such as moist Pacific storm systems, aka "Pineapple Express") are more likely to get "stuck" (remain stationary) and deliver large amounts of precipitation over longer periods of time, thereby increasing the frequency and severity of flooding. See: http://www.vancouverobserver.com/blogs/earthmatters/climate-change-altering-jet-stream-causing-storms-get-stuck; http://climatenexus.org/learn/planetary-systems/jet-stream	This comment does not raise specific issues related to the Proposed Action or adequacy of the environmental analysis in the EA. The comment does not provide an explanation of the relevancy of the cited article to climate change. Section 3.2 of the Final EA has been revised to address climate change.
The dead wood portion of this cycle needs to be re-established to enhance biodiversity, hydrology, soil productivity, and carbon storage. The NEPA analysis needs to recognize the full life-cycle of forests including the ecological, hydrological and carbon-cycle value of both live and dead trees	The EA focuses on the potential impacts associated with the proposed project regarding the use of biomass to produce transportation fuel. The proposed project meets the requirements of the Renewable Fuel Standard. The EPA conducted a carbon life-cycle analysis during rulemaking.
CEQ regulations at 40 CFR 1500.1(b) requires all agencies to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." The draft EA (p 14) says that the project site in Lake County was chosen due to its "proximity to woody biomass feedstock sources." This is an admission that choices/ decisions have been made without completing required NEPA steps, including consideration of the environmental impacts of using the locally available raw materials, and consideration of alternative sites that might provide even better access to raw material that has fewer environmental impacts. The EA should explore alternative sources of raw material including ag waste, residues from real restoration, slash piles in high-productivity forest types. EA (p25) says "Red Rock considered other sites in Lake County that were close to available woody biomass feedstocks, the Ruby Pipeline, and other existing infrastructure…" This highlight two problems, First, the EA needs to disclose the effects of these alternatives. Second, it shows that the applicant has only considered sites in Lake County, even though more appropriate sites may be located in other counties. The applicant has excluded consideration of a full range of NEPA alternatives in violation of NEPA. After consideration of alternatives the Air Force may decide to relocate this project to another location where the raw material can be supplied more sustainably. A NEPA compliant analysis will almost certainly require consideration of a range of alternative locations that involve different sources of raw	The Air Force previously evaluated the applicant's proposed project and site and determined that Red Rock Biofuel's met the criteria for an award under the ADBPP Program. As indicated in Section 1.2, this EA evaluates the potential environmental consequences involved with meeting the Department's goal in establishing a commercially viable biofuel production capability at a specific location. NEPA, through its implementing regulations, requires Federal agencies to document, analyze, and review Proposed Actions and potential reasonable alternatives. Sections 2.3.1 and 2.3.2 of the EA describe the ADBPP's objectives, requirements and site selection criteria that were used to consider site alternatives for the Proposed Action. Section 2.3.3 describes alternatives that meet the selection standards and were analyzed in the EA. Section 2.4 discusses alternatives that were considered but eliminated from further analysis in the EA because they did not meet the standards defined in Sections 2.3.1 and 2.3.2.

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material.	
This project may have significant impacts on the human environment (e.g., air quality, floodplain, forest habitat degradation, etc.) and therefore must be analyzed in an EIS.	The Department of Defense determined that the Proposed Action warrants an Environmental Assessment with a Finding of No Significant Impact because the action will not have a significant impact on the natural and human environment, and thus not be subject to preparation of an Environmental Impact Statement. Planned mitigation is used to reduce the potential impacts below a threshold of significance or to minimize the potential environmental effects. The Air Force and other agencies use mitigation to avoid, minimize, rectify, reduce, or compensate the adverse environmental impacts associated with their actions, per 40 C.F.R. § 1508.2. As described in the EA, there are no significant environmental effects from the Proposed Action that are above a threshold of significance.
"The EA needs to disclose the potentially significant risks of rail transport of fuel products produced at this facility. Lakeview is not located in close proximity to aviation or maritime fuel markets so finished products (which are hazardous by any definition) must be transported long distance to reach end users. This project will produce fuels that may be transported to end users via rail. This may require upgrades to rail facilities. This may also involves risks of spills and accidents that need to be disclosed in the EA. There may be tribal interests in that would be adversely affected by this project including rail transport down the McCloud River"	The US Department of Transportation Federal Rail Administration is responsible for the regulation and oversight of the Lake Railway. Lake Railway and their ability to transport hazardous materials are evaluated under the applicable federal regulations. Section 3.10 has been updated to indicate that fuel products will be transported in DOT- approved tank cars. Lake Railway is responsible for emergency response plans and coordinating with first responders for materials and products shipped on their railway.

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Comment	**Response**
Cumulative regional impacts to sensitive cultural resources and forests will occur as a result of this project. It is imperative that the environmental review process consider all regional impacts associated with the proposed project.	The potential effects of past, present, and reasonably foreseeable projects are evaluated in Section 3.12 of the EA. Section 3.12 of the EA contains the cumulative effects and identifies actions other than the Proposed Action where there is a temporal or spatial overlap of environmental effects. The cumulative effects analysis area includes the Sprague, Lost, and Massacre Lakes, and Oregon's closed basin watersheds.
The Pit River Tribe does not consider an EA adequate to address the scope and scale of impacts associated with this project and requests that an Environmental Impact Statement be prepared.	The Department of Defense determined that the Proposed Action warrants an Environmental Assessment with a Finding of No Significant Impact because the action will not have a significant impact on the natural and human environment, and thus not be subject to preparation of an Environmental Impact Statement. Planned mitigation is used to reduce the potential impacts below a threshold of significance or to minimize the potential environmental effects. The Air Force and other agencies use mitigation to avoid, minimize, rectify, reduce, or compensate the adverse environmental impacts associated with their actions, per 40 C.F.R. § 1508.2. As described in the EA, there are no significant environmental effects from the Proposed Action that are above a threshold of significance.
The EA fails to adequately address: Full analysis of project alternatives that include impact analysis mapping for cultural resources, flood plains, hydrology, wildlife, and spill modeling assessment.	The Air Force previously evaluated the applicant's proposed project and site and determined that Red Rock Biofuel's met the criteria for an award under the ADBPP Program. As indicated in Section 1.2, this EA evaluates the potential environmental consequences involved with meeting the Department's goal in establishing a commercially viable biofuel production capability at a specific location. NEPA, through its implementing regulations, requires Federal agencies to document, analyze, and review Proposed Actions and potential reasonable alternatives. Sections 2.3.1 and 2.3.2 of the EA describe the ADBPP's objectives, requirements and site selection criteria that were used to consider site alternatives for the Proposed Action. Section 2.3.3 describes alternatives that meet the selection standards and were analyzed in the EA. Section 2.4 discusses alternatives that were considered but eliminated from further analysis in the EA because they did not meet the standards defined in Sections 2.3.1 and 2.3.2. Chapter 3 of the EA focuses on the potential impacts associated with the Proposed Action and alternative, in comparison to the No Action Alternative.
Formal processes for organized negotiations with the Pit River Tribe and the California SHPO to satisfy Section 106 Consultation Process and National Historic Preservation for cultural, historical and archeological resources.	Section 3.4 and Chapters 5 and 7 of the EA document the Air Force's consultation efforts with the ACHP, the OR SHPO and federally listed Native American Tribes with historic interest in the project site beginning in February 2014, in accordance with the National Historic Preservation Act Section 106.

Appendix C Comments and Responses Pit River Tribe, continued	
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	A MOA was executed with provisions to mitigate adverse effects to cultural resources in the APE. The MOA also lays out a Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan, which includes defined procedures in the event human remains are discovered. The Burns Paiute Tribe, The Fort Bidwell Indian Community, the Klamath Tribes, and the Pit River Tribes are all concurring parties to this MOA. Due to the Area of Potential Effect (APE) for cultural resources being located entirely in Oregon, the Air Force did not consult with the California SHPO. The APE was properly delineated with regard to the scope of the Proposed Action in accordance with the NHPA Sec 106. The APE does not include cultural resources found in regional forests
Tribal, state, and local permits or approvals required for the project	Section 1.4.2 of the EA lists the permits, approvals or regulations that apply or may apply to the Proposed Action.
Regional "assessment and quantitation" of impacts to forests and cultural resources during forest materials extraction processes.	The effects of forestry activities which could provide source materials for the proposed plant and connected actions are evaluated under the applicable federal and state regulations.
Classification and transport of "Hazardous Fuels".	Lake Railway and their ability to transport hazardous materials are evaluated under the applicable federal regulations. Section 3.9 has been updated to indicate that fuel products will be transported in DOT- approved tank cars.
Public Safety, Emergency Response Planning, coordination protocols and interagency agreements	Section 1.4.3 of the Final EA has been updated to clarify that the proposed biomass plant will have an emergency response plan prior to operation of the facility. The Emergency Response Plan will be coordinated with first responders and the Local Emergency Planning Committee. Lake Railway is responsible for emergency response plans and coordinating with first responders for materials and products shipped on their railway. Section 2.3.5
Threatened and endangered species; impacts to wildlife, migratory birds, fish (including federal and state listed threatened and endangered species like the Goose Lake Red Band Trout, Modoc Sucker, Goose Lake Lamprey), and mammals such as beaver along the North Fork of the Pit River.	Section 3.4.3 of the final EA has been revised to evaluate the potential impacts to a priority list of birds protected under the Migratory Bird Treaty Act. The analysis was based on the breeding season for the bird species protected under the Act. The analysis includes the effects of the Proposed Action and the no action alternative on federally threatened, endangered, proposed and candidate wildlife, fish and plants and their habitats, including federally designated critical habitat, and on wildlife, fish, and plant species. The US Fish and Wildlife Service determined that no federally listed species or critical habitat occurs within the Project area. Chapter 7 of the EA includes a copy of the consultation letter and USFWS response.

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Comment	**Response**
Potential for contamination of waterways, hydrologic systems, wetlands, and Waters of the United States	The project will be constructed and operated consistent with the permits described in Section 1.4.2 of the EA. The potential for generating construction-related and operational impacts and other constituents of concern will be avoided through the use of best management practices (BMPs) and the implementation of the Erosion and Sediment Control Plan (ESCP). As described in Section 3.3.3 of the EA, lacks surface water features onsite and connectivity to surface water features in the vicinity of the site that could convey contamination to waterways, hydrologic systems, wetlands, and Waters of the United States.
Mitigation strategies and floodplain impacts	The Final EA includes analysis of the facilities proposed to be constructed within the floodplain mapped by FEMA. On December 18, 2015, FEMA approved a revision to the mapped floodplain. The Final EA has been updated to clarify that a portion of the biomass storage and handling area, tank farm and stormwater detention basin would be constructed within the 100-year floodplain, and the total 43,560 square feet would not alter the historic flood patterns, intensity, or hydrologic cycle. Providing a forecast of flooding potential of the site is part of the analysis conducted by FEMA. The proposed facilities are either constructed above the floodplain or have a dike constructed that prevents the flooding of the facility.
Overall large scale impacts to surface and groundwater resources if derailment spills of jet, diesel, naphtha, or other hazardous chemical occurs.	The US Department of Transportation Federal Rail Administration is responsible for the regulation and oversight of the Lake Railway. Railway operations and the potential effects from train derailment are evaluated under the applicable federal regulations.

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Chapter 3, page 59 lines 20-23: In a letter to the Environmental Quality Commission from the Town of Lakeview and County Commissioners says; "We did discuss expanding the area to a larger boundary but decided not to create a larger boundary because the existing zoning requirements would not allow large industry to locate outside the urban growth boundary as an outright use. Additionally, any sources that might locate outside the urban growth boundary would likely not have a significant impact of particulate matter at the monitor." So, if you stayed out of the UGB and in the County the project would likely not have a significant impact but that is not what you want to do. The projects application to the Town and County for entrance into the UGB you will now impact our air quality. When you submitted your application to Oregon DEQ the project was out of the UGB and now the project wants in to the UGB. This should require another permit or an updated one.	Red Rock Biofuels received an Air Contaminant Discharge Permit from Oregon Department of Environmental Quality on June 24, 2015. A new or revised air permit will not be required upon annexation of the property into the Urban Growth Boundary. Section 3.2.2 of the Final EA was revised to include discussion on the Urban Growth Boundary.
1Chapter 3, page 36, lines 6-9: The project will be over the 25,000 metric tons per year. The review report from the Oregon DEQ for 'Standard Air Containment Discharge Permit" states the project will be over that 25,000 metric tons per year, in fact it will be 272,719 tons per year. I believe the project has a responsibility to do an EIS not a FONSI. CEQ, 2014 as you know is guidance for all federally proposed actions that involve Climate change and GHG. As stated in CEQ, 2014 " project should consider the extent to which a proposed action and its reasonable alternatives contribute to climate change through GHG emissions and take into account the ways in which a changing climate over the life of the proposed project may alter the overall environmental implications of such actions." Because according to CEQ, 2014, "Climate change can increase the vulnerability of a resource, ecosystem, human community, or structure, which would then be more susceptible to climate change and other effects and result in a proposed action's effects being more environmentally damaging."	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
DEQ permit is for using wood waste for the biofuels plant. But on many occasions and on video staff at Red Rock Biofuels have said they have no contracts with the Forest Service to date and they will be using just gas from the pipe line. The projects DEQ permitted from the State of Oregon is not for gas, just wood waste. This is the "Bait and Switch" concept that Red Rock Biofuels has deceived the People of Lake County.	The proposed project meets the requirements of EPA's Renewable Fuel Standard as such the fuel is eligible to generate Renewable Fuel Identification Numbers. EPA conducted a carbon lifecycle analysis during rulemaking. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations. The fuel is not eligible to generate Renewable Fuel Identification Numbers using natural gas as a feedstock and there are no plans of using natural gas as a feedstock except in upset conditions. The Air Contaminant Discharge Permit issued by DEQ on June 24, 2015 includes the option to use natural gas as a feedstock as an alternate operating scenario. This

Appendix C Comments and Responses Sarah Bunten, continued	
Comment	**Response**
I believe the project has a responsibility to do an EIS not a FONSI.	would only be utilized in the unlikely event of a major feedstock supply interruption. The Department of Defense determined that the proposed action warrants an Environmental Assessment with a Finding of No Significant Impact because the action will not have a significant impact on the natural and human environment, and thus not be subject to preparation of an Environmental Impact Statement. Planned mitigation is used to reduce the potential impacts below a threshold of significance or to minimize the potential environmental effects. The Air Force and other agencies use mitigation to avoid, minimize, rectify, reduce, or compensate the adverse environmental impacts associated with their actions, per 40 C.F.R. § 1508.2. As described in the EA, there are no significant environmental effects from the proposed action that are above a threshold of significance.

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Recommend adding COMs/CEMs and having these monitors provide real-time data to the public. Show long term commitment by developing plans to install pollution control devices for all emission sources so that no critical emission will be directly discharged into the air. Show long term commitment by developing plans to use efficient control devices such as HE multicones and ESPs.	Oregon Department of Environmental Quality (ODEQ) issued an Air Contaminant Discharge Permit to Red Rock Biofuels on June 24, 2015 and is required to follow all permit conditions. The permit requires Red Rock Biofuels to have CEM to monitor NOx emissions. CEM data is provided to ODEQ. The use of multiclones and ESP's are beneficial for projects combusting or incinerating biomass; the proposed biofuels facility does not include the combustion or incineration of biomass.
"First SORO is concerned that the DEQ will only measure the HAPS emissions coming from the stack and will not measure the other emissions caused by the operation from the chip storage piles, the site mechanical and chemical operations, the biomass delivery truck supply emissions and the railroad train jet fuel emissions. The project will greatly increase the HAPS inventory for the area and cause a great increase in green house gases and ozone depletion. "	Section 3.2.3 discusses both stack and fugitive sources of HAPs. Section 3.1 of the Final EA has been revised include additional discussion of greenhouse gases. Table 3.5 summarizes both criteria and HAP emissions. Section 3.2.3 has been revised to include additional discussion of greenhouse gas emissions.
SORO also feels that the project will greatly negatively impact the air quality in the Lakeview basin which has never yet met the EPA PM2.5 standard.	Section 3.2.2 of the Final EA discusses the impact of the Proposed Action on regional air quality. Red Rock Biofuels received an Air Contaminant Discharge Permit on June 24, 2015 meeting the Oregon Department of Environmental Quality's rules and regulations.
SORO sees no evaluation of the MTBA and ESA for wildlife impacts in the site area or in the areas to be harvested for feedstock and along the Supply and Shipment Railroad. The Goose Lake basin and surrounding feedstock areas are of unique importance to the global wildlife habitat especially the birds in the Pacific Flyway. Therefore, these impacts must be researched.	The EA analyzed the potential effects on the resources listed in Section 1.1. Section 3.4 of the EA includes analysis of the potential direct, indirect, and cumulative impacts on biological resources such as vegetation, migratory birds, fish and wildlife species that are found in the Klamath/Goose Lake Basin of the Eastern Cascades Slope and Foothills Ecoregion.
I see no evidence of any investigation of the seismic risks which are prevalent in the Goose Lake basin or consultation with the Oregon Department of Geology and mineral industries. There is no evaluation of seismic hazard maps for the area or soil type analyses. It is well substantiated that this area is on a volcanic plate as is evidence by numerous hot springs in the area. The plant site is obviously in a high hazard earthquake zone. And there is a strong probability of major seismic events. A 6.0 magnitude factor even the 9.0 factor should be evaluated for a mega quakes and require a plan with a sufficient plant design safety factor to protect plant , the site and the surrounding area from chemical damage to the surrounding soil and aquifer.	Section 3.7.2 identifies geologic, soils, and seismic conditions that could affect or be affected by the Proposed Action. Figure 3.3 shows the presence of a north-south trending fault, the Goose Lake Fault, approximately 1,000 to 1,500 feet to the east of the Preferred Site. Section 3.7.1 discusses the construction of the biomass plant facilities and the pipeline which would meet 2012 International Building Code, adopted as part of the 2014 Oregon Structural Specialty Code in July 2014. The seismic design of the pipeline and rail spur would be in accordance with U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration and

Appendix C Comments and Responses Save our Rural Oregon, continued	
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	Federal Railroad Administration regulations, respectively. The building standards would help in avoiding or reducing potential risks from geologic and seismic hazards as well as adverse proposed action impacts related to geology, soils, and seismicity.
The site is in a unique wildlife and bird habitat area which effects the whole Goose Lake basin and must be properly protected from the risk of highly probable seismic events.	Section 3.7.2 of the Final EA identifies geologic, soils, and seismic conditions that could affect or be affected by the Proposed Action. Figure 3.3 shows the presence of a north-south trending fault, the Goose Lake Fault, approximately 1,000 to 1,500 feet to the east of the Preferred Site. Section 3.7.1 discusses the construction of the biomass plant facilities and the pipeline which would meet 2012 International Building Code, adopted as part of the 2014 Oregon Structural Specialty Code in July 2014. The seismic design of the pipeline and rail spur would be in accordance with the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration and Federal Railroad Administration, respectively. The building standards would help in avoiding or reducing potential risks from geologic and seismic hazards as well as adverse Proposed Action impacts related to geology, soils, and seismicity.
There will not only be a danger to human health from emissions but to the birds and wildlife in the area. (This area is unique wildlife and bird habitat area. Clear cutting and biomass gathering (strip mining) process used for the project will totally deforest and devastate the vegetation of Lakeview and the surrounding areas making the area totally barren thereby causing massive soil erosion and loss of the area's natural wildlife and vegetation habitats.	The EA focuses on the potential impacts associated with the Proposed Action, in comparison to the No Action Alternative. Section 1.3 discusses the scope of the analysis and includes the rationale for which resources are analyzed in detail. The effects of forest management and vegetation treatments that could provide source materials for the proposed plant and connected actions are evaluated under the applicable federal and state regulations.
It is doubtful that fuel supply from nearby forests will be sufficient to sustain the project for its 20 year life because of these desert forests are not very dense. Since biomass sources are scarce in the area the fuel supply will always require trucking subsidies (since biomass trucking cannot break even if the mileage is greater than 30 miles away.)	The EA focuses on the potential impacts associated with the Proposed Action, in comparison to the No Action Alternative. The sources of biomass meet Federal Land Policy and Management Act of 1976 Section 103 wastes and are discussed in Section 2.2 of the EA. The effects of logging and thinning that could provide source materials for the proposed plant and connected actions are evaluated under the applicable federal and state regulations.
The document analysis is only site specific and does not evaluate the damage that biomass logging and thinning will do to the forests in the 100's of miles surrounding the plant from which the feedstock will come.	The EA focuses on the potential impacts associated with the Proposed Action, in comparison to the No Action Alternative. The sources of biomass are discussed in Section 2.2 of the EA that meet the Federal Land Policy and Management Act of 1976 Section 103 wastes. The effects of logging and thinning that could provide source materials for the proposed plant and connected actions are evaluated under the applicable federal and state regulations.
My long term research of biomass projects reveals that when these projects run out of woody biomass they often revert to other forms of biomass including organic plant material, animal waste land fill wastes treated municipal and industrial waste. Some	The Proposed Action is a biomass to fuel project that meets the requirements of the Renewable Fuels Standard and is specific to woody biomass. Section 2.3.1 of the Final EA has been revised to describe the types of the renewable biomass used at the

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projects even burn old tires as fuel for so call green energy sources.	proposed plant. Section 2.3.1 of the Final EA was revised to clarify that the volume of renewable biomass is based on information in the publicly available reports by Department of Energy. These Department of Energy reports include a county-by-county estimate of the volume of renewable biomass available from timber harvest, forest management activities, and sawmill residuals.
Since the project will require forest biomass from federal lands, it is incumbent upon the federal lands management agencies work cooperatively and create a stand alone forest supply assessment for the 20 year lifespan this project. At a minimum, DoD/Red Rock needs to release their own private supply assessment that must have been developed	Section 2.3.1 of the Final EA was revised to clarify that the volume of renewable biomass is based on information in the publicly available reports by Department of Energy. These Department of Energy reports include a county-by-county estimate of the volume of renewable biomass available from timber harvest, forest management activities, and sawmill residuals.
I conclude the sufficient feedstock for the project cannot possibly be met though Red Rock's association with the Collins sawmill and its timberlands alone. It requires resources from federal and state lands in 3 states to be viable. As another commentator said: "This complicates things, as each department, bureau, region and state has their own policies and initiatives, their own legal mandates, and all too often they are incongruent with regional land use planning and coordinated response to proposed projects. This project has immense regional forest and land use implications."	The types of renewable biomass are described in Section 2.3.1 of the Final EA. This section also includes a discussion on the estimated volume of residual sawmill, forest management, and timber harvest activities available as renewable biomass. As identified in the comment these wastes could be from sources in Oregon, California, or Nevada. The EA focuses on the potential impacts on biological resources associated with the Proposed Action, in comparison to the No Action Alternative. Section 3.4.3 of the EA includes the potential impacts on biological resources from the Proposed Action. The policies and initiatives developed by federal and state agencies in relation to land use planning is outside of the scope of this EA.
The applicant's plan and assurance of financial ability to retire the facility when the project is dissolved in 20 years or even sooner. I see no evidence of such a plan and no assurance of the company's engineering and financial ability to properly retire the facility. Proper retirement of the site facility with its over 100 acres of chip pile storage, chemical waste ponds, chemical production plant and many other dirty and polluting facilities would require a quality environmentally sound plan to minimize environmental impacts to the surrounding Lake County basin and Goose Lake. The plan would require proper pumping out polluted waste ponds, demolishing the site facilities, excavating the ground under the plant facilities and hauling them off to a remote waste collection site.(which should be filled over with clean dirt.) The plant site then, should also be filled over with clean dirt. The DEQ has such a plan it is using to detoxify the old Oregon Tech facility above Klamath Falls.	As indicated in the FONSI, DoD's funding for this effort is used to purchase biorefinery equipment. Any future retirement or disposition of the equipment or facility will be the responsibility of the private owner, and subject to all applicable federal, state and local regulations. Reclamation of the site would be conducted in accordance with the State of Oregon, Lake County, and the Town of Lakeview's requirements in place when the plant closed. The requirements of a reclamation plan at a date 20 years in the future is a matter of speculation and beyond the scope of this EA. As the economic viability or the financial aspects for the project are not part of the Air Force's NEPA decision making process, a business plan is not provided in the EA.

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There is also mention of uranium, and apparently past mining and/or processing. How much contamination it there? Disturbance and deforestation will increase potential soil erosion in wind that could contain uranium. Also, are trees in the area contaminated with uranium, and if so, how does the Red Rock project increase the potential for human exposure to radioactive materials in air, water, etc.?	There is no mention of uranium in the EA because neither the preferred site or the alternate site evaluated in the EA were former mine sites or used for processing minerals such as uranium. EPA is responsible for the management of Superfund sites including establishing post reclamation land uses. Section 3.9 of the EA discusses hazardous materials including the potential impact from the proposed biofuels plant during construction and operation.
NEPA requires that a hard look is taken at conflicting viewpoints, and rigorous review of science. This DEA is a self-serving near-zero analysis document. It greatly fails to consider a panoply of current scientific information- ranging from pollutant hazards to impacts on native vegetation communities. It is written as if the material will just magically appear out of thin air.	During the NEPA process, the Air Force took a hard look at the potential effects from the Proposed Action as described in Section 1.1 of the EA. Chapter 3 of the EA analyzes the potential effects on resources including cumulative and irreversible and irretrievable effects (see Sections 3.12 and Section 3.13 of the Final EA.)
The DEA admits the construction of the project impacts wetlands. It is within the 100 year floodplain of Goose Lake. Climate change is anticipated bring more extreme weather events, Though the lake is drying, extremes in weather could result in flooding of this toxic site and its rail spurs, pipeline, etc. This could also contaminate native American burial sites. Please review Ruby pipeline cultural materials - there are very high density sites in the Lakeview area. Pollution of the Lake and wetlands will further harm the sensitive aquatic biota habitats and populations. This includes materials infiltrating ground water, or entering drainages during high water flows. It also includes pollutants deposited on surface waters, wetlands and the lake bed from the air pollution from this plant.	As described in Section 1.4.2 of the EA, the proposed biofuels plant site, construction, and operation are consistent with the US Army Corps of Engineers requirements for a Section 404 Clean Water Act Nationwide Permits #14 and #12, Linear Transportation Projects and Utility Line Activities, because project activities would result in the loss of less than 0.5 acre of waters of the US. The proposed biofuels plant site, construction, and operation are consistent with the State of Oregon's 401 permit requirements. These permits including the 401 National Pollutant Discharge and Elimination System Stormwater Construction General Permit No. 1200-C would be required prior to the initiation of construction activities of the pipeline and the biofuels facility. The 1200-C permit regulates stormwater runoff from the facility construction, and a Stormwater Pollution Prevention Plan outlines the sediment and erosion control best management practices that would minimize potential impacts to surface waters.
The Project is likely to increase forest health problems, increase tree mortality, and make the lands less likely to recover from disturbance- thus making the project even less sustainable.	As described in Section 2.3.1 of the Final EA describes the types of renewable biomass to be used by the proposed biomass facility. These renewable biomass sources are residual materials from sawmills, forest management actives and timber harvest.

[1] Wildlands Defense submitted an original letter on January 30, 2016 and a replacement letter on February 4, 2016. Comments from both letters were considered and responses are included in this matrix.

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Comment	**Response**
Myriad Watershed, Water Quality and Water Quantity Concerns The plant will use water in development and operation. Deforestation will greatly exacerbate the continued loss of surface water and flows into Goose Lake and other areas. Water will be used for dust abatement at logging sites, and in many other ways. Watersheds are likely to unravel as denuded hillsides was away and as streams entrench and downcut - resulting in loss of water-holding ability. The Lake is dying. So are the biota with it. Grazing exacerbates erosion of watersheds and other adverse effects of this proposal. There is no information on the current health and impacts of grazing disturbance across the BLM, Forest, state and private lands where deforestation may take place.	"As described in the EA, the proposed biomass plant would include raw water treatment and wastewater treatment. Raw water treatment would use potable water from the Lakeview municipal water supply to provide utility water and firewater for the plant. Process discharge water would be sent to the Lakeview municipal wastewater treatment plant. The proposed biofuels plant site, construction, and operation are consistent with the State of Oregon, Lake County, and the Town of Lakeview's planning and zoning requirements. The evaluation of forest management activities and the potential effects on biological resources, including rare and aquatic species, are evaluated by federal and state agencies as part of their regulatory requirements."
Be located in a commercially-viable location; Have proximity to required resources and/or markets; Have access to multi-modal transportation infrastructure... It is uncertain if this is commercially viable even with subsidies because there is no systematic and thorough analysis of the volume of biomass from public lands that would be needed vs. what is sustainable. The massive subsidies for siting this plant in this distant location shows it is not economically/commercially viable.	Section 2.3.1 of the Final EA was revised to clarify that the volume of renewable biomass is based on information in the publicly available reports by Department of Energy. These Department of Energy reports include a county-by-county estimate of the volume of the renewable biomass available from private, federal, and state lands.
Impacts will be irreversible, particularly in the face of climate change and alien weeds that thrive in zones of disturbance from deforestation and/or livestock grazing. Exotic weeds cheatgrass and medusahead caused by deforestation and continued livestock grazing will choke the ravaged lands. Entire watersheds and ranges are highly likely to become wastelands.	Chapter 3 of the EA addresses the potential irreversible and irretrievable impacts from the Proposed Action. The term irreversible is defined as "a loss of future options and applies primarily to the effects of nonrenewable resources, such as mineral or cultural resources or to those factors, such as soil productivity that are renewable only over long periods of time". The evaluation of the potential effects from forest management activities and livestock grazing are evaluated by federal and state agencies as part of their regulatory requirements.
The DEA provides information on only a little of what will take place with this project. It ignores much of what is inextricably linked to and connected with it. The project will result in an altered and expanded infrastructure footprint beyond the pipeline and plant facility itself. This includes road upgrades or new roads/trails, for clearcutting and "harvest", and much more.	Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. This includes the Proposed Action and connected actions. The evaluation of the potential effects from forest management activities and livestock grazing are evaluated by federal and state agencies as part of their regulatory requirements. As described in Section 2.3.1 of the Final EA discusses the types of renewable biomass that would be used by the proposed plant. These types of renewable biomass are residual materials from sawmills, forest management and

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
	timber harvest activities.
Providing a full and detailed environmental baseline is essential to understand the irreversible and irreparable damage that the facility will cause to public lands and the natural world. This is crucial for understanding the lack of resiliency of forests and other vegetation types disturbed, altered, and/or destroyed by this massive deforestation scheme, and that will also suffer from the air and water pollution, and potential toxic or other chemicals released from the Red Rock facility under various foreseeable ""feedstock"" alternatives.	Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. This includes the Proposed Action and connected actions. The evaluation of the potential effects from forest management activities and livestock grazing are evaluated by federal and state agencies as part of their regulatory requirements. As described in Section 2.3.1 of the Final EA discusses the types of renewable biomass that would be used by the proposed plant. These types of renewable biomass are residual materials from sawmills, forest management and timber harvest activities.
Air, water pollution, loss of wildlands habitat, other resource pollution and depletion will affect multiple western states. Oregon, Nevada and eastern California, at a minimum. The existing very poor air quality from dust, mining pollutants, grazing and disturbance, etc. - in local and regional areas must be fully assessed.	Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the Proposed Project and Alternatives, consistent with the requirements of NEPA.
This includes all aspects of tree killing/removal and all associated forest activity, road upgrades and use, hauling, skidding, machinery operation, or any other aspect of killing and amassing sufficient trees to use in a biomass plant over a prolonged period of time. And again, how long will it be until the supply of ""feedstock"" runs out? WHAT will it cost to transport materials to the plant, and what will the greenhouse gas and other emissions associated with that be? What is the greenhouse gas footprint of the plant? Of the War Planes burning the fuel? This includes the massive deforestation loss of carbon sequestration and other climate amelioration benefits that would result from massive tree removal of forested vegetation required to feed the plant. This includes the climate change effects of natural gas burning (and development activities), and the calamitous effects of its production and burning on the natural environment. EPA is requesting that FERC consider effects of natural gas: http://www.eenews.net/energywire/2016/02/04/stories/ I 060031773	Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. This includes the Proposed Action and connected actions. The Final EA in Section 3.1.2 has been updated to include greenhouse gas and climate change analysis. The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. As described in Section 2.3.1 of the Final EA describes the types of renewable biomass that would be used by the proposed plant.

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This includes all aspects of the proposed biomass facility site development, materials use, processing, fuels production and hauling, transportation to a military site where it will be used, biomass use in fuel for War Planes, etc. It also includes all impacts of any supposed ""mitigation"" for this massive inter-connected biomass-gas (potential future gas and/or gas and toxic waste) burning site.	
Full and detailed risk assessments for all aspects of potential damage to the environment must also be provided.	Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. This includes the Proposed Action and connected actions. A detailed risk assessment is not required based on the scope of the decision and the potential environmental effects from the Proposed Action.
Baseline Studies and Full Analysis of Ground and Surface Water Must Be Conducted ·Assessment Must Include Strains on Aquifers and Sustainability, Pollutants and Surface and Ground Water Infiltration Goose Lake is already greatly depleted - and the native fauna that depend on the water in the area are under great stress and already on the verge of extirpation and/or extinction. The plant itself is located by Thomas Creek and in the 100 year floodplain. Pollutants may infiltrate ground and surface water and increase threats to aquatic species habitats. The DEA greatly fails to address the species that are at risk, and the seriousness of the existing threats to them.	Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. As described in the EA, the proposed biomass plant would include raw water treatment and wastewater treatment. Raw water treatment would use potable water from the Lakeview municipal water supply to provide utility water and firewater for the plant. Process discharge water would be sent to the Lakeview municipal wastewater treatment plant. Section 3.12 of the EA contains the cumulative effects and identifies actions other than the Proposed Action where there is a temporal or spatial overlap of environmental effects. The cumulative effects analysis area includes the Sprague, Lost, and Massacre Lakes, and Oregon's closed basin watersheds. The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. The EA analyzed the potential effects on the resources listed in Section 1.1. Chapter 3 of the EA includes analysis of the potential direct, indirect, and cumulative impacts on biological resources, and the US Fish and Wildlife Service determined that no federally listed species or critical habitat occurs within the Project area. Chapter 7 of the EA includes a copy of the consultation letter and USFWS response.
This includes rare endemic aquatic species already under great stress. See species information and accounts in the following: http://www.dfw.state.or.us/conservationstrategy/docs/document_pdf/b-eco_nb.pdf	Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential

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http://www.dfw.state.or.us/conservationstrategy/docs/document_pdf/b-eco_nb.pdf https://www.jstor.org/stable/pdf/40983224.pdf?seg=1#page_scan_tab_contents We describe the current distribution of native and non-native fishes in the Goose Lake basin, Oregon, with comparisons to prior unpublished surveys. We employed a generalized random tessellation stratified design to achieve a spatially-balanced sampling distribution across the drainage, including samples representative of both public and private lands. We collected all 9 native Goose Lake fishes, including 4 endemic fishes and the endangered Modoc Sucker. Two native fish species, the Modoc Sucker and the Pit Sculpin, were rarely encountered. The Modoc Sucker was limited to the upper Thomas Creek drainage: however, we documented a range expansion from that known at the time of listing in 1985. We collected the Pit Sculpin from only 2 sampling locations, indicating that the Oregon distribution of Pit Sculpins has compacted in the past 50 y. We also documented the apparent expansion of 2 non-native fishes, Fathead Minnow and Brown Bullhead, in the drainage. Within the Goose Lake fish assemblage, we describe 3 species groups that are correlated with land use and physical habitat parameters. The results of this study provide a baseline to assess trends in fish community structure over time and under different climatic conditions, measure the effects of restoration projects, and guide future restoration efforts. http://www.pitriveralliance.net/resource/fishwi Id.html	environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. The US Fish and Wildlife Service determined that no federally listed species or critical habitat occurs within the Project area. Chapter 7 of the EA includes a copy of the consultation letter and USFWS response.
A detailed hard look must be taken at habitat quality and quantity, habitat fragmentation, status of local and regional populations, threats to local and regional populations. This includes sage-grouse and sagebrush-dependent species, too. The linked and connected deforestation will disturb sage-grouse and threatens habitat; and populations in many ways. This includes road disturbance, elevated wildfire risk, weed invasion of treated lands with weeds choking deforested areas and spreading (including due to livestock use) into sage habitats. See Belsky and Gelbard 2000, Chuong et al. 2015.	Chapter 3 of the EA provides factual information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. The US Fish and Wildlife Service determined that no federally listed species or critical habitat occurs within the Project area. Chapter 7 of the EA includes a copy of the consultation letter and USFWS response. All applicable science is considered, as required by law, regulation, and policy.
There is greatly insufficient scientific information and analysis provided to support the information in the Table of Environmental Impacts, as well as the Table of Environmental Consequences in the DEA. This applies to air quality, water resources, biological resources, cultural resources and land use. There is no scientific and/or rational basis supporting the conclusions of minimal to near-non-existent impacts, short duration, etc. There is no adequate mitigation for the serious pollution	Consistent with its obligations under both NEPA and the Endangered Species Act, should the subject area change in a way that could substantially affect the conclusions drawn in existing environmental impact assessment documents, the Air Force would re-assess the planned biomass plant operations and conduct additional resource consultations, as appropriate.

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concerns, and biological and cultural harms that will be caused.	
Further, it is also essential that a full analysis of the "mitigation" of the Ruby pipeline impacts be provided prior to any additional development being associated with it. The effectiveness (or lack thereof) of the mitigation, must be included in the Red Rock project analysis. There is a strong federal nexus here, too.	Construction and reclamation of the Ruby Pipeline were completed in 2011. As described in Section 3.12, the contribution of past actions such as the Ruby Pipeline have been taken into account in the existing environment descriptions.
Direct, indirect and cumulative impacts related to this facility and the Ruby pipeline must be fully assessed, including the proliferation of development and adverse environmental damage in the pipeline's aftermath that is taking place across the Great Basin and other affected regions. So must the cumulative environmental impacts of the pipeline disturbance itself - as well as all the connected ensuing separate and piecemeal EAs, EISs and the development and disturbance associated with/and or facilitated by the gas line. How many ancillary/spur pipelines have now been built off Ruby? Where? What is the footprint? How many more are likely? The Ruby line spawned expanded new significant adverse environmental impacts and environmental degradation and fragmentation since the out-dated Ruby EIS analysis.	Construction and reclamation of the Ruby Pipeline were completed in 2011. As described in Section 3.12, the contribution of past actions such as the Ruby Pipeline have been taken into account in the existing environment descriptions. At this time there are no additional ancillary or spur pipelines proposed for development within the cumulative impact boundary for the proposed project. It is not within the scope of this analysis to speculate on additional connections to the Ruby Pipeline.
There is great concern that many areas of the pipeline have not been rehabbed as promised, have become weedlands, had much greater adverse environmental effects, etc. Funds that were supposed to result in mitigation for affected wildlife and wild lands have not been used in the area.	Construction and reclamation of the Ruby Pipeline were completed in 2011. As described in Section 3.12, the contribution of past actions such as the Ruby Pipeline have been taken into account in the existing environment descriptions. It is not within the scope of this analysis to speculate on how the Ruby Pipeline mitigation funds were expended.
The Ruby pipeline is having a long-lasting serious adverse impacts on the sagebrush and western juniper wild lands, watersheds and wildlife habitats across the region. A whole series of spurs have tom up and fragmented habitats, and provide the fuel source for gold mines and other facilities with massive environmental footprints. OTHER gas plants must be assessed, too, as all of this combined with the biomass plant and gas line air pollution, and adverse connected land and habitat disturbance effects, must be considered.	Construction and reclamation of the Ruby Pipeline were completed in 2011. As described in Section 3.12, the contribution of past actions such as the Ruby Pipeline have been taken into account in the existing environment descriptions. Section 3.12 includes the reasonably foreseeable projects where there is a temporal or spatial overlap with potential effects from the Proposed Action. It is not within the scope of this analysis to speculate on additional connections with the Ruby Pipeline that may provide fuel to other gas plants, gold mines, or other facilities.
Serious adverse impacts of all existing and foreseeable Ruby-associated developments must be considered by Red Rock. So must the impacts of fracking and environmental damage in Colorado, Wyoming and the sources of the gas for the pipeline and this spur. This must be evaluated under all Red Rock plant foreseeable scenarios. These scenarios include: biomass plus gas, biomass being prohibitively expensive and eating itself out of house and home quickly, potential conversion of biomass in whole or in part to toxic waste, or simply turning the facility into a gas plant.	Construction and reclamation of the Ruby Pipeline were completed in 2011. As described in Section 3.12, the contribution of past actions such as the Ruby Pipeline have been taken into account in the existing environment descriptions. Section 3.12 includes the reasonably foreseeable projects where there is a temporal or spatial overlap with potential effects from the Proposed Action. The EA for the proposed project has analyzed scenarios that meet the purpose and need of the project as described in Section 1.1 of the EA.

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Forest and Wildland Fire Synthesis, John Muir Project, April 2015 Don't Blame the Beetles: Bark beetles may have devastated western forests. but that may not mean more severe fires, Carswell, Science, October 2014 Fuel Reduction Practices and Their Effects on Soil Quality, Busse et. al., United States Department of Agriculture, February 2014 Reassessment of the Use of Fire as a Management Tool in Deciduous Forests in Eastern North America, Matlack, Conservation Biology, October 2013 The Watershed Impacts of Forest Treatments to Reduce Fuels and Modify Fire Behavior, Rhodes, Pacific Rivers Council, February 2007"	The references were reviewed and considered.
"Increasing the Gender Gap: The Impacts of the Bioeconomy and Markets in Environmental Services on Women, Global Forest Coalition, May 2013 State of Practice for Emerging Waste Conversion Technologies, RTI International, October 2012 Biomass Electricity: Clean Energy Subsidies for a Dirty Industry. Biomass Accountability Project, June 2011 Letter to Senator Stabenow showing how few jobs are created by biomass incinerators, October 2009 Assessment of Materials Management Options for the Massachusetts Solid Waste Master Plan Review, Tellus Institute, 2008 The Viability of Advanced Thermal Treatment of MSW in the UK, Fichtner Consulting Engineers Limited, 2004"	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.

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"Woodsmoke: Regulatory Failure is Damaging Public Health, Robinson, Air Quality and Climate Change, November 2014 PM I Air Pollution is Most Harmful, China Daily, October 2013 Outdoor Air Pollution a Leading Environmental Cause of Cancer Deaths, World Health Organization, October 2013 NASA Map Illustrates Air Pollution Mortality Rates, Earth Observatory, September 2013 Air Pollution and the Gut: Are Fine Particles Linked to Bowel Disease? Environmental Health News, September 2013 Air Pollution and Early Deaths in the United States, Caiazzo et. al., Atmospheric Environment, September 2013 Letter to US Senator Ron Wyden from 85 Organizations Concerned with Biomass Health Impacts, June 2013 Lessons on Drought and Pollution from the Forgotten Three Billion: An Indiana Case Study on Using Biomass Crops for Generating Electricity, Kristin Shrader-Frechette and B.N. Kunycky, University of Notre Dame, March 2013 Comments on Proposed Biomass Energy and Waste-to-Energy Moratorium Bylaw, Greenfield, MA, American Lung Association in Massachusetts, March 2013 Biomass Energy in Pennsylvania: Implications for Air Quality. Carbon Emissions, and Forests, Partnership for Policy Integrity for The Heinz Endowments, December 2012 Human Health Effects of Biomass Incinerators, Congressional Briefing, September 2012 Emissions from forest fires, biomass burning worse than thought. July 2012 Testimony on H.648 Vermont Renewable Energy Portfolio Standards, April 2012 Proposed Biomass Plant is a Health Threat, by Marc J. Yacht, MD, Tampa Bay Times, 2012 American Lung Association in Vermont comments on biomass, Rebecca Ryan, December 2011 Saving Lives and Reducing Health Care Costs: How Clean Air Rules Benefit the Nation, Trust for America's Health and Environmental Defense Fund, November 2011 Second Opinion: The Medical Profession Diagnoses Biomass Incineration, Therese Vick, Blue Ridge Environmental Defense League, November 2011 Pediatrician Worried about Biomass Air Pollution, Nonna Kreilein, MD, August 2011 Air Pollution Linked to Learning and Memory Problems. Depression, Sun et. al.,	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.

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Science Daily, July 2011 American Lung Association Public Policy on Energy, American Lung Association, June 2011 Discriminatory Health Impacts of Biomass Incinerator Proposal for Port St. Joe, Florida, NAACP, May 2011 Air Pollution May Trigger Heart Attacks, WebMD Health News, February 2011 Biomass is Dirty Business, Alec Kalla, 2011 Cancer: an old disease, a new disease or something in between?, David and Zimmerman, Nature Reviews, October 2010 Latinos: ""Stop Attacks On Protecting Our Children's Health"",Voces Verdes, October 2010 Letter to President Obama and Congress opposing biomass incinerator in Valdosta. Georgia, Valdosta-Lowndes NAACP, September 2010 Biomass Incinerators: Separating Fact from Fiction, Dr. Tom Tennotto, Coalition Against Chemical Trespass, American Chronicle, July 2010 The Price of Pollution, Michigan Network for Children's Environmental Health, June 2010 American Academy of Family Physicians Opposes Biomalis Burning, Douglas Henley, MD, April 2010 Black infant mortality in Gadsden County. Florida, Edward Holifield, MD. February 2010 Complex Mixtures of Air Pollutants: Characterizing the Cancer Risk of Polycylic Organic Matter, Lewtas. Environmental Health Perspectives. 1993 Residential Wood Combustion Study. U.S. Environmental Protection Agency. Air and Toxics Division. August 1984 Biomass and Particulate Matter, Environmental Protection Agency"	

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"Enviva's Wood Pellet Mill in Ahoskie. North Carolina Threatens Endangered Ecosystems and Wildlife, Dogwood Alliance, August 2013 Tree Plantations in the South to Generate Energy in the North: A new threat to communities and forests, World Rainforest Movement, February 2013 Barking Up the Wrong Tree? Forest Sustainability in the Wake of Emerging Bioenergy Policies, Jody M. Endres, Vermont law Review, January 2013 The Use of Whole Trees in Wood Pellet Manufacturing, Dogwood Alliance, November 2012 Sustainable Biomass: A Modem Myth, Rachel Smolker et. al., Biofuel watch, September 2012 Ecology of Dead Wood in the Southeast, Forest Guild, January 2012 Beaver Wood Energy Wood Supply, Timothy Maker, Vermont Public Service Board, December 2011 Fueling a Biomass: Why Burning Trees for Energy Will Harm People. The Climate, and Forests, Greenpeace, November 2011 Southern Forest Futures Report, U.S. Department of Agriculture, May 2011 Wood-Based Bioenergy: The Green Lie, Global Forest Coalition, May 2010 Massachusetts' Forest at the Crossroads, Massachusetts Forest Watch, September 2009 The Survival of the Emerald Ash Borer in Wood Chips, Roberts, Michigan State University Extension, February 2006 Don't Log the Forests for the Fuel: A Position Paper on the Potential Environmental and Economic Impacts of the Cellulosic Ethanol Industry in the Southern United States, Quaranda, Dogwood Alliance Ecological and Social Impacts of Fast Growing Timber Plantations and Genetically Engineered Trees, Carman et. al., Dogwood Alliance"	The comment does not provide any explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.
Wood Bioenergy: Green Land Grabs for Dirty ""Renewable"" Energy, Global Forest Coalition and Biofuelwatch, October 2013 A Foreseeable Disaster: The European Union's agroenergy policies and the global land and water grab, Transnational Institute, FDCL, and Econexus for Hands off the Land Alliance, July 2013	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.
Scorched Earth references the need for Red Rock to release a private assessment document to address the sources of the biomass and the sustainability. Any assessment certainly must be revealed, and full public scrutiny and analysis must take place in an EIS process. There must be full analysis related to public lands, and from federal agencies, as well - prior to any plant being built. This process must be re-	Red Rock Biofuels has provided the Air Force with information necessary to make a reasoned decision on the Proposed Action. The evaluation of forest management activities and the potential effects on carbon storage and wildlife are evaluated by federal and state agencies as part of their regulatory requirements.

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initiated, and must include a full public airing of assessment of biomass "sustainability" and the promises made by the developers in seeking the massive tax dollar subsidy.	
Prior to the issuance of the ACDP require long term commitment by requiring that Red Rock set aside sinking funds for replacing all the wood stoves in the Lakeview air shed to allow for the increased emissions from Red Rock.	Red Rock Biofuels received an Air Contaminant Discharge Permit from the Oregon Department of Environmental Quality on June 24, 2015 meeting the requirements of Oregon Department of Environmental Quality and the Clean Air Act.
Full updated analysis and consultation with all applicable state and federal agencies must take place.	Section 1.4 in the Final EA reflects the public participation as well as the interagency coordination and consultation that has occurred.
No information is provided on where the "feedstock" will originate. and the impacts on the environment of such exploitation.	The types of renewable biomass are discussed in Section 2.3.1 of the Final EA describes the types of renewable biomass that would be used by the proposed plant. The introduction to the Final EA discloses these residual materials could be from private, federal, or state managed lands.
"Air Quality Impacts Are A Serious Concern There are very serious existing air quality concerns in Lakeview and the surrounding area. See https:/naw.lclark.edu/live/news/27853-nedc-files-petition-to-redesignate-lakeview-as . The following petition discusses air quality impacts. ""A coalition of regional and national conservation organizations and concerned citizens submitted a petition to the U.S. Environmental Protection Agency (EPA) on September 15, 2014, asking the agency to redesignate Lakeview, Oregon as nonattainment based on the area's repeated violations of the federal, health-based, standard for ambient air quality. In order to avoid a redesignation to nonattainment and skirt the strict controls associated with it, Lakeview and the Oregon Department of Environmental Quality (DEQ) have proposed various buffer programs that would allow continued development in the area. Yet these programs fail to require emissions reductions from existing industrial sources, leaving the area with ongoing PM2.5 problems without adequate nonattainment controls. ""It is clear from EPA's data that Lakeview is not a borderline violator of the Clean Air Act,"" said Marla Nelson of the Northwest Environmental Defense Center. ""Because Lakeview has consistently violated the federal standard, it should properly be redesignated to nonattainment."" Despite the fact that Lakeview is currently facing major air quality problems, two large-scale biofuel energy facilities are being proposed:	Section 3.2.1 of the Final EA has been revised to include additional discussion on the PM Advance Plan and sustainment area. The air permit issued to Iberdrola has expired.

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• DEQ has authorized construction of a 24-megawatt biomass electrical generation facility by Iberdrola Renewables Red Rock Biofuels has proposed a $70 million venture in Lakeview that will annually convert 140,000 tons of juniper trees into 14 million gallons of jet fuel ... All of these impacts must be assessed under a full range of project and plant development and/or conversion scenarios. The complete environmental footprint of the deforestation and watershed impacts of this proposal must be fully assessed."	
Despite the fact that Lakeview is currently facing major air quality problems, two large- scale biofuel energy facilities are being proposed: • DEQ has authorized construction of a 24-megawatt biomass electrical generation facility by Iberdrola Renewables Red Rock Biofuels has proposed a $70 million venture in Lakeview that will annually convert 140,000 tons of juniper trees into 14 million gallons of jet fuel ... All of these impacts must be assessed under a full range of project and plant development and/or conversion scenarios. The complete environmental footprint of the deforestation and watershed impacts of this proposal must be fully assessed.	Section 3.12 includes analysis of cumulative impacts for projects where there is a temporal or spatial overlap in potential environmental effects. The potential effects of past, present, and reasonably foreseeable projects are evaluated in Section 3.12 of the EA. This includes projects where there is a potential temporal or spatial overlap in potential environmental effects. Iberdrola Renewables announced in October 2011 that its 26.8-megawatt (MW) biomass power project at Collins Pine Co.'s Fremont sawmill in Lakeview was put on hold indefinitely, due to lack of a power purchase agreement. The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements.
How Much Loss of Forested Vegetation Has Already Taken Place in The Affected Landscape? How Depleted, Degraded and Fragmented Are the Forests? Please provide detailed mapping and analysis of the existing footprint of deforestation from all of these causes. Please do this over a proper cumulative effects area- in the minimal ""cumulative effects analysis"", the DEA looks at only a tiny area, in abject violation of NEPA. How have the projects, and the continued imposition of livestock grazing disturbance, affected micro-climate, weed expansion (including flammable invasive annual weeds like cheatgrass and medusahead that greatly alter fire cycles and doom native ecosystem? What is the existing degree of habitat alteration, fragmentation and loss from these agency projects? From similar projects on state and/or private lands? How much more will this project make this?	Section 3.12 of the EA contains the cumulative effects and identifies actions other than the Proposed Action where there is a temporal or spatial overlap of environmental effects. The cumulative effects analysis area includes the Sprague, Lost, and Massacre Lakes, and Oregon's closed basin watersheds. The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements.
Loss of surface water flows will be worsened. Many of these areas contain livestock-grazing degraded watersheds that have lost the capacity to retain and slowly release water and flows. There is also agricultural diversion and ground water pumping combined with climate change and other effects. The plant pollutants and other Red	Section 3.12 of the EA contains the cumulative effects and identifies actions other than the Proposed Action where there is a temporal or spatial overlap of environmental effects. The cumulative effects analysis area is the Lower and Middle Thomas Creek, and Crane Creek-Frontal Goose Lake watersheds.

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Rock-linked impacts will fall into and pollute ever-more diminished surface waters - resulting in potentially even more harmful concentrations.	
The article also notes the area's great importance to the Pacific Flyway -and thus migratory birds. Pollution and damage to the environment from the plant emissions and potential pollution, and especially the massive deforestation that will take place, threatens this already highly damaged ecosystem even further.	The references cited in the comment were reviewed and considered by the Air Force during their decision process. Section 3.4.3 of the EA analyzed potential effects on biological resources including vegetation, neotropical migratory birds, and threatened and endangered species. Cumulative impacts are analyzed in Section 3.12 of the EA and the analysis includes the "contribution of past and present actions on the environment has been taken into account in the existing environmental condition descriptions (affected environment). Existing conditions reflect the aggregate impact of all prior and ongoing human actions and natural events that have affected the environment, and serves as the baseline for analyzing the effects of future actions."
"The DEA admits numerous very important watersheds are present, but no information is provide on how this project and using biomass as ""feedstock"" from them, will actually impact them: • Lake County contains all or parts of twelve different watersheds, including Little Deschutes, • 19 Beaver-South Fork, Lower Crooked, Williamson, Sprague, Lost, Silver, Summer Lake, Lake • 20 Abert, Warner Lakes, Guano, and Goose Lake (EPA, 2013). The Little Deschutes, Beaver-South • 21 Fork, and Lower Crooked watersheds form part of the larger Deschutes Basin, a major tributary • 22 to the Columbia River Basin to the north. The Williamson, Sprague, and Lost watersheds form • 23 part of the Klamath River Basin, which drains southwest into northern California and to the • 24 Pacific Ocean. The Silver, Summer Lake, Lake Abert, Warner Lakes, Guano and Goose Lake • 25 watersheds are all endorheic, or closed, basins, and have no outflow under normal conditions. If watersheds are ""endorheic"" pollutants will further accumulate in the local area, and add to the water and air quality problems further. What aquatic and terrestrial species inhabit these watersheds, and how will all activities linked to this proposal impact them? What species have been proposed for ESA listing? How will this	"The EA analyzed the potential effects on the resources listed in Section 1.1. Chapter 3 of the EA includes analysis of the potential direct, indirect, and cumulative impacts on surface water, groundwater and wetlands. As stated in the EA, the potential effects on water resources are negligible due to the lack of surface water on the Preferred Site and the lack of connectivity to surface and groundwater. Section 3.12 of the EA contains the cumulative effects and identifies actions other than the Proposed Action where there is a temporal or spatial overlap of environmental effects. The cumulative effects analysis area includes the Sprague, Lost, and Massacre Lakes, and Oregon's closed basin watersheds. Section 3.4.3 of the EA analyzed potential effects on biological resources including threatened and endangered species. During consultation for the project, the US Fish and Wildlife Service determined that no federally listed species or critical habitat occurs within the Project area. Chapter 7 of the EA includes a copy of this consultation letter along with the response from the USFWS. "

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project move species closer to ESA listing? Pollutants will affect these, and Nevada and California watersheds (and airsheds)."	
There also appear to be numerous other developments and disturbances taking place in the Lakeview area their full disturbance footprint and impact on the environment and cumulative effects must be fully assessed. http://www.andersonengineering.com/Lakeview%20Geothermal%20Project%20EA%20April%202012.pdf	Section 3.12 of the Final EA includes the geothermal wells and pipeline where there is potential overlap with the Proposed Action.
GREC Biomass Plant: Report to the County Manager Regarding Noise, Wolf, September 2013	The comment does provide any context with respect to the article. The article was reviewed and considered. Section 3.8.1 of the EA discusses noise impacts. Table 3.11 lists the allowable noise levels regulated under OAR 340-35-035.
How Much Energy Is Required to Exploit and Produce Fuel, and for this Project? Please provide detailed analysis of how much energy is required in all aspects of plant construction, operation and exploitation of forest products, gas and any other foreseeable substance that may be burned over the life of the facility. Please include any activities and other operations that may be harvesting wood for this plant.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
There is only minimal and self-serving information provided to the public in the DEA. Language is often is very confusing and unclear. NEPA documents are supposed to be written so that the public can understand them. This one fails abysmally. Portions of the DEA are laden with confusing jargon, perhaps covering up the fact that the document is only revealing PART of the connected, linked and very foreseeable components of this grossly subsidized deforestation scheme. The facility may also be converted to burning hazardous or other waste incineration in the future - after the land is ravaged and laid bare.	The Air Force prepared the EA analysis of projected environmental impacts associated with the proposed project and alternatives in a manner consistent with the requirements of NEPA. Chapter 3 of the EA provides information on the current conditions of various environmental resources and includes analysis of potential impacts from the proposed project and alternatives. Section 3.12 of the EA contains the cumulative effects and identifies actions other than the Proposed Action where there is a temporal or spatial overlap of environmental effects. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. Section 2.3.1 of the Final EA describes the types of renewable biomass that would be used in the proposed plant. There are no plans for the Red Rock Biofuels plant to

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	burn hazardous materials or incinerate wastes in the future. Biomass subsidies are beyond the scope of the purpose and need for this project as described in Section 1.1 of the EA.
Additional Concerns about Ruby Pipeline and disturbance footprint/cumulative effects on the region: WildLands Defense carries forward all of the comments submitted by environmental groups as part of the Ruby pipeline process. This includes the comments submitted by WLD's Fite when with Western Watersheds Project. The gas line itself greatly fragmented sage-grouse and western juniper species habitats in remote wild land areas. Since the line was punched through the region, including along the highly controversial route from Wyoming through northern Utah, across north-central Nevada, and on south of Sheldon and then heading north towards Lakeview toward Malin, Oregon - several very harmful new gas pipeline spurs have been built to facilitate massive foreign gold mine exploitation of sage-grouse and other wildlife habitats, disrupt and deplete very scarce surface waters (being ever-more depleted across the region as result of environmental degradation, climate change, and irrigation, mining drawdown and other impacts). This mining pollutes the air including with mercury from processing that settles out far from the mine source, and generally eats the heart out of new areas of the Great Basin. Plus, despite El Paso (owner at the time) protestations that the Ruby gas line would not be used for export, these are now shone to be false as current proposals would do just that.	"The Air Force reviewed all of the attachments provided by Wildlands Defense. Construction and reclamation of the Ruby Pipeline were completed in 2011. As described in Section 3.12, the contribution of past actions such as the Ruby Pipeline have been taken into account in the existing environment descriptions. Section 3.12 includes the reasonably foreseeable projects where there is a temporal or spatial overlap with potential effects from the Proposed Action. The export of gas from the Ruby Pipeline by the pipeline operator is outside of the scope of analysis for the proposed project. "
We are Attaching our recent comments on a BLM deforestation project in the Virginia Range. Please fully incorporate these comments, and concerns raised in the comments into these Red Rock comments. We request that all scientific information on forested vegetation (example, Lanner The Pinyon Pine), historical information and other records and concerns raised in these Virginia Range comments be fully addressed in this current Red Rock Lakeview process.	The Air Force reviewed the scoping comments submitted on the BLM's Carson City District Office Virginia Range Vegetation Treatment Project. Based on publically available information, the potential direct and indirect effects from the proposed Red Rock Biofuels plant are not relevant to the Proposed Action.
The 24-hour National Ambient Air Quality (NAAQS) for fine particulate matter (PM2.5) is 35 micrograms per cubic meter (µg/m3). From 2011-2013, ambient air in Lakeview averaged 56µglm3 -the fifth worst in the nation. In 2013 alone, fine particulate in the ambient air in Lakeview was more than two times the federal standard at 94 µg/m3.	The Clean Air Act considers the effects of air pollution on human health and the environment. An Air Contaminant Discharge Permit was issued to Red Rock Biofuels on June 24, 2015 by the Oregon Department of Environmental Quality which demonstrates compliance with the Clean Air Act.

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PM 2.5 can accumulate deep in the respiratory system and is associated with numerous adverse health effects including premature death, increased hospital admissions and emergency room visits, and development of chronic respiratory diseases such as asthma. PM 2.s also causes visibility impairment, adverse effects on vegetation and ecosystems, and physical damage to property.	
"The Petition includes serious concerns about effects of particulate matter on vegetation: 1. In addition, particulate matter contributes to adverse effects on vegetation, ecosystems, climate, and causes damage to and deterioration of property. Id. at 61,209. Specifically, excess levels of particulate nitrate and sulfate can lead to acidifying deposition to foliage, accelerated weathering of leaf and cuticular surfaces, increased permeability of leaf surfaces to toxic materials, water, and disease agents, increased leaching of nutrients and foliage, and altered reproductive processes. Id. at 61,209. Ultimately these impacts weaken trees and render them susceptible to other stresses. Id. PM deposited on terrestrial and aquatic ecosystems contributes to adverse impacts on species shifts, loss of diversity, and alteration of native fire cycles. Id. Ambient particles impact climate by scattering and absorbing radiation, changing the number and size distribution of cloud droplets, and altering the amount of ultraviolet solar radiation penetrating through the atmosphere to ground level. Id. Finally, PM nitrates and sulfates that deposit on materials may cause physical damage to and deterioration of property. Id."	The Clean Air Act considers the effects of air pollution on human health and the environment. An Air Contaminant Discharge Permit was issued to Red Rock Biofuels on June 24, 2015 by the Oregon Department of Environmental Quality which demonstrates compliance with the Clean Air Act.
Human Health Concerns raised in the Non Attainment Petition include: Increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing; Decreased lung function; Aggravation of heart and lung diseases; Cardiovascular symptoms; Cardiac arrhythmias; Heart attacks ; Respiratory symptoms Asthma attacks; Premature death; Bronchitis A hard look must be taken at all of these serious health concerns in relation to this polluting Red Rock biomass to War Plane fuel plant	The Clean Air Act considers the effects of air pollution on human health and the environment. An Air Contaminant Discharge Permit was issued to Red Rock Biofuels on June 24, 2015 by the Oregon Department of Environmental Quality which demonstrates compliance with the Clean Air Act.
Allow for development within the time frame necessary to meet the Program objectives.	The Department evaluated the suitability of the proposed project consistent with the ADBPP criteria as part of Red Rock Biofuels application for an award under the ADBPP.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
THERE is no evidence provided that conditions for suitability for biomass in DEA section 2.3.1 are met, FULL review of the public lands element of this proposal must take place to understand the validity of these claims. There is very little forest on private lands. We can readily foresee agencies being forced to write erroneous environmental documents based on false claims by the politicians who are behind the massive subsidies for this boondoggle project. The biomass material will HAVE to come from federal land in order for there to be a sufficient volume	The types of renewable biomass are discussed in Section 2.3.1 of the Final EA describes the types of renewable biomass that would be used by the proposed plant. As identified in the comment, these wastes could be from sources in Oregon, California, or Nevada and are not limited to Lake County. The evaluation of forest management activities and the potential effects are evaluated by federal and state agencies as part of their regulatory requirements. Biomass subsidies are beyond the scope of the purpose and need for this project, as described in Section 1.1 of the EA.
There are very serious rare aquatic and terrestrial species concerns with all aspects of this project, and the damage that will be done to habitats by radical deforestation, pollution and other effects.	The EA analyzed the potential effects on the resources listed in Section 1.1. Chapter 3 of the EA includes analysis of the potential direct, indirect, and cumulative impacts on biological resources, and the US Fish and Wildlife Service determined that no federally listed species or critical habitat occurs within the Project area. Chapter 7 of the EA includes a copy of the consultation letter and USFWS response.
The discussion of "irreversible and irretrievable impacts" ignores the pollutant particles that will rain down on the land, or infiltrate the waters and water tables. It ignores potential human health and diseases that will not be curable from the pollutants. It ignores the devastating losses to forested vegetation and wild lands, irreversible exotic weed invasions in the wake of project disturbance, and the native biota that rely upon them.	The Environmental Protection Agency delegates responsibility of certain aspects of the Clean Air Act to the States. Red Rock Biofuels received an Air Contaminant Discharge Permit from the Oregon Department of Environmental Quality on June 24, 2015 meeting the requirements of Oregon Department of Environmental Quality and the Clean Air Act.
US Environmental Protection Agency emissions inventories and peer-reviewed scientific studies demonstrate that biomass energy facilities emit high levels of carbon dioxide and nearly all of the same air pollutants as a coal-fired plant, such as asthma-inducing particulate matter and carcinogenic Volatile Organic Compounds.	The Environmental Protection Agency delegates responsibility of certain aspects of the Clean Air Act to the States. The Proposed Action meets the requirements of the Clean Air Act by obtaining an Air Contaminant Discharge Permit. An Air Contaminant Discharge Permit was issued to Red Rock Biofuels on June 24, 2015 by the Oregon Department of Environmental Quality. The Clean Air Act considers the impacts of air pollution emissions on human health and the environment. For clarification, the proposed project does not include the combustion or incineration of biomass.
All of this in a near-non-attainment area where air quality is only likely to worsen as livestock grazing promotes cheat, medusahead and more frequent range fires; deforestation results in earlier and longer fire seasons and flammable exotic weed proliferation~ public lands welfare ranching and other livestock grazing churns up dust that contributes to air pollution.	The Environmental Protection Agency delegates responsibility of certain aspects of the Clean Air Act to the States. The Proposed Action meets the requirements of the Clean Air Act by obtaining an Air Contaminant Discharge Permit. An Air Contaminant Discharge Permit was issued to Red Rock Biofuels on June 24, 2015 by the Oregon Department of Environmental Quality. The Clean Air Act considers the impacts of air pollution emissions on human health and the environment.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
Biomass energy also consumes a constant supply of trees, the logging of which can degrade and compact forest soils and also cause erosion, silting fisheries and drinking watersheds. Note that these impacts occur from a plant that solely produces biomass. Now add into this mix natural gas, and potentially trash and toxic materials that are foreseeable pollutants in ground and surface water, in soils, on vegetation, and affecting local and regional residents as well as sensitive aquatic and terrestrial biota.	The evaluation of forest management activities and the potential effects on carbon storage and wildlife are evaluated by federal and state agencies as part of their regulatory requirements. The EA focuses on the potential impacts associated with the proposed project regarding the use of biomass to produce jet fuel and diesel. These biomass sources must meet the criteria listed in Section 2.3.1 of the EA. The effects on air quality from the proposed plant emissions are described in Section 3.1 of the EA and the potential effects on biological resources are described in Section 3.4 of the EA.
There must be a full assessment of how livestock grazing and desertification affects all BLM, Forest service, state and private lands in the footprint of the 'feedstock" deforestation zone. Grazing amplifies the adverse effects of climate change on ecological processes. See Beschta et al. 2012, 2014. Providing a full and detailed environmental baseline is essential to understand the irreversible and irreparable damage that the facility will cause to public lands and the natural world. This is crucial for understanding the lack of resiliency of forests and other vegetation types disturbed, altered, and/or destroyed by this massive deforestation scheme, and that will also suffer from the air and water pollution, and potential toxic or other chemicals released from the Red Rock facility under various foreseeable "feedstock" alternatives.	The evaluation of the potential effects from forest management activities and livestock grazing are evaluated by federal and state agencies as part of their regulatory requirements.
How difficult will it be, and what will the costs be, to "rehab" sites, and what will the scale of irreversible impacts be? How will the serious adverse effects of livestock grazing disturbance be dealt with as deforestation and heavy equipment disturbance tears apart the land? Please include required removal of livestock grazing from all lands deforested for "feedstock" for this project for several decades.	The evaluation of the potential effects from forest management activities and livestock grazing are evaluated by federal and state agencies as part of their regulatory requirements. Chapter 3.13 of the EA also addresses the potential irreversible and irretrievable impacts from the Proposed Action. The term irreversible is defined as “a loss of future options and applies primarily to the effects of nonrenewable resources, such as mineral or cultural resources or to those factors, such as soil productivity that are renewable only over long periods of time”.
Deforestation will create hotter-drier more weed-prone sites. Recovery is likely to be very poor, and the ability of deforestation-disturbed systems to recover while suffering under climate stress will be significant. Aggressive flammable exotic invasive grasses will choke the landscape. See Jones et al. 2013 review of deforestation and other public lands ""treatment"" projects. This all combined will also advance desertification -resulting in loss of sustainable perennial water flows. It will result in extensive use of herbicides and other harmful chemicals as weeds proliferate in the wake of "treatments". ALL of these impacts must be assessed. Grazing amplifies all of these impacts.	The evaluation of the potential effects from forest management activities and livestock grazing are evaluated by federal and state agencies as part of their regulatory requirements. Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA.

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Compliant with ""renewable biomass"" as defined in Section 103 of the Federal Land Policy and Management Act of 1976 (43 USC §1702) that: Renewable or recurring organic matter originating from non-Federal or Indian tribal lands held in a Federal trust or subject to restrictions against alienation imposed by the U.S. including: There is no indication that deforesting mature and old growth western juniper and other very ancient and slow growing trees is in any way ""renewable"". There is a grave threat of highly flammable cheatgrass and medusahead infestation that will follow deforestation once sites are disturbed by heavy equipment; become hotter, drier and windier due to loss of shade: are disturbed chronically by livestock grazing and trampling activity. All of these effects will be exacerbated by climate change. Complete EIS level analysis is necessary to understand whether or not ANY additional tree loss in this region is renewable. The area has already been significantly impacted by past logging, fires, ""treatments"" for livestock forage, and various forms of human development.	The evaluation of the potential effects from forest management activities and livestock grazing are evaluated by tribal, federal, and state agencies as part of their regulatory requirements. As described in Section 2.3.1 of the Final EA, the types of renewable biomass that would be used in the proposed plant residual materials from sawmills, forest management and timber harvest activities. Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. The Final EA has been revised to include analysis of greenhouse gases and climate change in Section 3.2. Section 3.12 of the EA contains the cumulative effects and identifies actions other than the Proposed Action where there is a temporal or spatial overlap of environmental effects. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA.
Roads and heavy equipment use in rugged, steep, rocky, mountainous wild land settings will result in soil erosion in wind and water, water pollution, loss of sustainable perennial flows and surface waters, loss of important and sensitive aquatic biota, loss and fragmentation of important and sensitive terrestrial biota, etc.	The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. Direct and indirect impacts are addressed in Chapter 3. This analysis for each resource includes the transport of renewable biomass to the proposed plant site as applicable.
There will be immense adverse impacts to lands ravaged for "woody biomass" for this scheme. This natural gas and biomass plant will pollute airsheds and destroy scenic vistas, harm human health, contaminate ground and surface waters and vegetation through deposition of pollutants; far from the source.	The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. Direct and indirect impacts are addressed in Chapter 3. This analysis for each resource includes the transport of renewable biomass to the proposed plant site as applicable.
The project borders three states. Using a 75 mile radius, the Fremont-Winema in Oregon and Modoc National Forest in California are at risk. As are the Hart Mountain- Sheldon National Antelope Refuges in Oregon/Nevada and the Modoc National Wildlife Refuge in California. There are also three large BLM districts in three states"". Thus, the Red Rock Project will have a very significant pollution and resource damage and exploitation footprint across the region. There are different state laws and regulations that the air pollution, water pollution and other environmental impacts will be examined under and regulated by to various degrees.	The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. As described in Section 2.2 of the EA, the proposed biomass facility is designed to use biomass from sources that are compliant with “renewable biomass”. Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites. This approach provides information on both the existing conditions and the potential environmental impacts from the proposed project and alternatives, consistent with the requirements of NEPA. This includes the Proposed Action and connected actions.

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Broad Range of Baseline Studies on Sensitive Species, Air Quality, Water, Wild Lands are Essential The project is connected to radical deforestation and disturbance of public wild land ecosystems. Multiple year intensive studies for all species of native plants and animals impacted by, and within the footprint, of the massive deforestation must be conducted.	The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. As described in Section 2.3.1 of the Final EA describes the types of renewable biomass that would be used by the proposed plant which are residual materials from sawmills, forest management and timber harvest activities.
There also appear to be numerous other developments and disturbances taking place in the Lakeview area their full disturbance footprint and impact on the environment and cumulative effects must be fully assessed. http://www.andersonengineering.com/Lakeview%20Geothermal%20Project%20EA%20 April%202012.pdf	Section 3.12 of the EA addressing cumulative impacts has been revised to include the geothermal wells and pipeline project which was completed in 2014.
Deforestation will create hotter-drier more weed-prone sites. Recovery is likely to be very poor, and the ability of deforestation-disturbed systems to recover while suffering under climate stress will be significant. Aggressive flammable exotic invasive grasses will choke the landscape. See Jones et al. 2013 review of deforestation and other public lands "treatment" projects. This all combined will also advance desertification -resulting in loss of sustainable perennial water flows. It will result in extensive use of herbicides and other harmful chemicals as weeds proliferate in the wake of "treatments". ALL of these impacts must be assessed. Grazing amplifies all of these impacts.	The evaluation of the potential effects from forest management activities is evaluated by federal and state agencies as part of their regulatory requirements. As described in Section 2.2 of the EA, the proposed biomass facility is designed to use biomass from sources that are compliant with “renewable biomass”. Chapter 3 of the EA provides information on the current conditions of resources and includes analysis of potential impacts from the proposed project and alternative sites.

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Comment	**Response**
"The Draft document presents information in a misleading manner. It falsely claims ""no federal lands are affected by the proposal"". ""The purpose of the Advanced Drop-In Biofuel Production Project (ADBPP) Environmental Assessment (EA) is to assess the environmental impact of a proposed Federal action to support the design, construction and/or retrofit, validation, qualification and operation of a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE) capability. Specific to the project, no federally owned or federally designated tribal lands are affected by this effort"". This statement is false. A vast land area that will be deforested - with soils left to erode, disturbed soil and vegetation will become invaded by aggressive exotic weeds (with impacts amplified by livestock grazing disturbance), the watersheds will be ravaged and streams choked with sediment. There will be loss of sustainable flows from destroying forested cover both at a micro-site level and across the region will have enormous adverse impacts to native animals already under great stress from desertification and over-use and loss of surface and ground water."	Section 3.2.3 of the Final EA has been revised to include an evaluation of the potential for increased fugitive dust and vehicle traffic to haul biomass to the proposed facility. A cumulative effects analysis including consideration of pertinent past, present, and reasonably foreseeable future projects is included in Section 3.12 of the EA. This analysis includes data and information from a variety of sources including field data, GIS mapping, field inventories, and other planning documents. Section 2.2 in the Final EA has been revised to remove the statement "no federal lands".
These impacts, and air quality, are likely to worsen under climate change effects on Great Basin ecosystems. See Comer et al. 2012, Great Basin Rapid Ecological Assessment.	Section 3.2.3 of the Final EA has been revised to include analysis of greenhouse gas emission and climate change.
How many miles of roads will be built? How many miles upgraded? How will these activities impact water quality and quantity runoff into streams? How will they result in changed site micro-climate, changed site climate, etc.'? What will the cumulative effects on watersheds and species be- given that there already has been a tremendous amount of logging, cutting and other human disturbances to these habitats including ubiquitous livestock grazing. See Fleischner 1994, describing some of the serious adverse effects of grazing. See WLD and DGR Virginia Mountains comments, describing serious adverse effects of deforestation in arid wild lands.	The only permanent road constructed in relation to the proposed project is the driveway accessing the plant site. Section 3.10 of the Final EA analyzed the potential effects from the project traffic hauling biomass materials. The EA analyzed the potential effects on the resources listed in Section 1.1. Chapter 3 of the EA includes analysis of the potential direct, indirect, and cumulative impacts on surface water, groundwater and wetlands. The cumulative effects analysis area includes the Sprague, Lost, and Massacre Lakes, and Oregon's closed basin watersheds. As described in Section 3.12 of the EA, the cumulative effects analysis considers the "contribution of past and present actions on the environment has been taken into account in the existing environmental condition descriptions (affected environment). Existing conditions reflect the aggregate impact of all prior and ongoing human actions and natural events that have affected the environment, and serves as the baseline for analyzing the effects of future actions."
Further, the potential loss of human life and damage done by use of this fuel. The use of fuel derived from the death of ancient forests in War Planes is not examined.	The use of biomass derived fuel and activities by the Department of Defense that could result in the loss of human life are beyond the scope of the EA. The EA focuses on the potential impacts associated with the proposed project, in comparison to the

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	No Action Alternative.
There is significant public concern that it is a bait and switch - and the plant will burn natural gas and/or other or potentially toxic waste and gas - after massive federal subsidies are exhausted, and the trees are destroyed in a grossly unsustainable manner. These are very slow growing arid forests. They are not resilient in the face of this extensive disturbance. They have a "natural" recovery rate of centuries. But recovery from this massive exploitation will be highly unlikely.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. This project does not include combustion or incineration of biomass as part of the process. Section 2.2 has been updated to include discussion on the availability of biomass within the project area.
After this quickly takes place, the plant is likely to be switched to rely solely on natural gas. Many a plant claimed to be built for "Biomass" in the past - has, after the forests are quickly leveled, been converted to burn hazardous waste and/or toxic material in the place of wood.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. This project does not include combustion or incineration of biomass as part of the process. Section 2.2 has been updated to include discussion on the availability of biomass within the project area.
Please fully assess all of the significant adverse environmental effects as described in the scientific studies and reports found at this link: http://www.energyjustice.net/content/biomass-library-scientific-reports HUMAN HEALTH (Peer Reviewed Studies) Particulate and Gaseous Emissions from the Combustion of Different Biofuels in a Pellet Stove, Vicente et. al., Atmospheric Environment, November 2015 Ambient Particulate Matter Air Pollution Exposure and Mortality in the NIH-AARP Diet and Health Cohort, Thurston et. al., Environmental Health Perspectives, September 2015 Biomass Burning Emissions and Potential Air Quality Impacts of Volatile Organic Compounds and Other Trace Gases From Temperate Fuels Common in the United States, Gilman et. al., Atmospheric Chemistry and Physics, August 2015 Reducing the Negative Human-Health Impacts of Bioenergy Crop Emissions Through Region-Specific Crop Selection, Porter et. al., Environmental Research Letters, May 2015 Ethanol Refining May Release More of Some Pollutants Than Previously Thought, American Geophysical Union, Science Daily, May 2015	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the articles, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.

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Long-Term Exposure to Air Pollution May Pose Risk to Brain Structure, Cognitive Functions, Beth Israel Deaconess Medical Center, Science Daily, April 2015 Real-Time Chemical Composition Analysis of Particulate Emissions from Woodchip Combustion, Kortelainen et. al., American Chemical Society, January 2015 Autism Spectrum Disorder and Particulate Matter Air Pollution before, during, and after Pregnancy, Raz et. al., Environmental Health Perspectives, December 2014 Emissions of Fine Particle Fluoride from Biomass Burning, Jayarathne et. al., Environmental Science and Technology, October 2014 Release of Chlorine and Sulfur during Biomass Torrefaction and Pyrolysis, Saleh et. al., American Chemical Society, May 2014 Air Pollution from Incinerators and Reproductive Outcomes, Candela et. al., Epidemiology, November 2013 Short-term exposure to particulate matter constituents and mortality in a national study of U.S. urban communities, Krall et. al., Environmental Health Perspectives, August 2013 Strong Link Between Diabetes and Air Pollution Found in National U.S. Study, Brownstein, Science Daily, September 2010 Reducing The Staggering Costs Of Environmental Disease In Children, Trasande and Liu, Health Affairs, 2008 Air Pollution Combustion Emissions: Characterization of Causative Agents and Mechanisms Associated with Cancer, Reproductive, and Cardiovascular Effects, Lewtas, Science Direct, August 2007 Cancer Risk Assessment, Indicators, and Guidelines for Polycyclic Aromatic Hydrocarbons in the Ambient Air, Bostrom et. al., Environmental Health Perspectives, 2002 Measurements of new particle formation and ultrafine particle growth rates at a clean continental site, Weber et. al., Journal of Geophysical Research Atmospheres, February 1997	
FORESTS (Peer Reviewed Studies) Forest Soil Carbon is Threatened by Intensive Biomass Harvesting, Achat et. al., Nature, October 2015 Quantifying Consequences of Removing Harvesting Residues on Forest Soils and Tree Growth, Achat et. al.. Science Direct, July 2015 Testing Predictions of Forest Succession Using Long-Term Measurement: 100 Years of Observation in the Oregon Cascades, Harmon and Pabst, Journal of Vegetation Science, February 2015	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the Proposed Action of constructing a biomass plant to use the types of renewable biomass described in Section 2.3.1 of the Final EA.

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Bet-hedging Dry-Forest Resilience to Climate Change in the Western USA based on Historical Forest Structure, Baker and Williams, Frontiers in Ecology and Evolution, January 2015 Mineral Soil Carbon Pool Responses to Forest Clearing in Northeastern Hardwood Forests, Petrenko et. al., Global Change Biology, September 2014 Tropical Forest Wood Production: A Cross Continental Comparison, Banin et. al., Journal of Ecology. May 2014 Nutritional Hotspots and the Secret Life of Forests, Kluberet. et al. Science Findings, May 2014 Consequences of Biodiversity Loss for Litter Decomposition Across Biomes, Handa et. al., Nature, May 2014 Large trees drive forest aboveground biomass variation in moist lowland forests across the tropics, Slik et. al., Global Ecology and Biogeography, July 2013 Traditional Forest Management Reduces Fungal Diversity, Abrego-Antia and Salcedo- Larralde, Science Daily, July 2013 If we build habitat, will they come? Woody debris structures and conservation of forest mammals, Sullivan et. al., October 2012 Forests Store 40% of U.S. Fossil Fuel Carbon Emissions, Xiao et al., Science Daily, April 2011 Forest Biomass and Bioenergy: Opportunities and Constraints in the Northeastern United States, Cary Institute of Ecosystem Studies, February 2011 Carbon changes in conterminous US forests associated with growth and major disturbances, Zheng et al., Environ Ress. Lett., 2011 A Large and Persistent Sink in the World's Forests, Pan et al., Science, 2011 Trees Filter More Pollutants Than Thought, National Science Foundation, Science Express, October 2010 Effect of Policy-Based Bioenergy Demand on Southern Timber Markets: A Case Study for North Carolina, Science Direct, July 2010 Old-growth forests as global carbon sinks, Luyssaert et al., Nature, September 2008	
WATER (Peer Reviewed Studies) The Hidden Costs of Electricity: Comparing the Hidden Costs of Power Generation Fuels, Geoff Keith et. al., Synapse Energy, September 2012 The Water Footprint of Energy from Biomass: A Quantitative Assessment and Consequences of an Increasing Share of Bio-energy in Energy Supply, Gerbens-Leenes et. al., Science Direct, August 2008	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.

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ASH (Peer Reviewed Studies) Reuse of Woody Biomass Fly Ash in Cement-Based Materials, Berra et. al., Construction and Building Materials, February 2015 Effect of Waste Incineration and Gasification Processes on Heavy Metal Distribution, Wu, Ling, Zeng, Fuel Processing Technology, September 2014 From waste to raw material-the route from biomass to wood ash for cadmium and other heavy metals, Narodoslawsky and Obenberger, Science Direct, August 1995	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the articles, it appears these articles do not pertain to the Proposed Action of constructing a biomass plant to use the types of renewable biomass described in Section 2.3.1 of the Final EA.
No Proof of Harm: A Citizen Science Investigation, Breathe Clean Air Group, May 2015	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.
LAND USE (Peer Reviewed Studies) Limits to Sustainable Use of Wood Biomass, Abolins and Gravitis, Sustainable Development, Knowledge Society, and Smart Future Manufacturing Technologies World Sustainability Series, April 2015 Comparing Bioenergy Production Sites in the Southeastern US Regarding Ecosystem Service Supply and Demand, Meyer et. al., PLOS, March 2015 Existing Cropland Could Feed Four Billion More by Dropping Biofuels and Animal Feed, Cassidy et. al., Environmental Research Letters, August 2013	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the Proposed Action of constructing a biomass plant to use the types of renewable biomass described in Section 2.3.1 of the Final EA.
WILDFIRE (Peer Reviewed Studies) Fire Severity Unaffected by Spruce by Spruce Beetle Outbreak in Spruce-Fir Forests in Southwestern Colorado, Andrus et. al., Ecological Society of America, October 2015 Does Wildfire Likelihood Increase Following Insect Outbreaks in Conifer Forests? Meigs et. al., Ecosphere, July 2015 Area Burned in the Western United States is Unaffected by Recent Mountain Pine Beetle Outbreaks, Hart et. al., PNAS, February 2015 The Role of Defensible Space for Residential Structure Protection During Wildfires, Syphard et. al., International Journal of Wild/and Fire, October 2014 Ten Years of Vegetation Assembly After a North American Mega Fire, Abella et. al. Global Change Biology, September 2014 Historical. Observed. and Modeled Wildfire Severity in Montane Forests in the Colorado Front Range, Sherriff et. al., PLOS One, September 2014 Severity of an Uncharacteristically Large Wildfire, the Rim Fire, in Forests with Relatively Restored Frequent Fire Regimes, Lydersen et. al., Forest Ecology and Management, September 2014 Recent Mountain Pine Beetle Outbreaks. Wildfire Severity, and Post fire Tree	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the Proposed Action of constructing a biomass plant to use the types of renewable biomass described in Section 2.3.1 of the Final EA. The renewable biomass sources for the Proposed Action would be residual materials from sawmills, forest management activities such as pre-commercial thinning, forest restoration and fuels treatments, and timber harvests.

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Comment	**Response**
Regeneration in the U.S. Northern Rockies, Harvey et.al., PNAS, June 2014 Is Fire Severity Increasing in the Sierra Nevada, California, USA? Hanson and Odion, International Journal of Wildland Fire, September 2013 Spatially extensive reconstructions show variable-severity fire and heterogeneous structure in historical western United States dry forests, Williams and Baker, Global Ecology and Biogeology, 2012 Recovery After Severe Fire in the Klamath-Siskiyou: What Happens Without Planting?, Houston et. al., Fire Science Brief, May 2009 Objectives and Considerations for Wildland Fuel Treatment in Forested Ecosystems of the Interior Western United States, Reinhardt et. al., Forest Ecology and Management, September 2008 Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests, Rhodes and Balcer, Open Forest Science Journal, 2008 Modify Wildfire Behavior -- the Effectiveness of Fuel Treatments, Carey and Schumann, National Community Forestry Center, April 2003	
CLIMATE (Peer Reviewed Studies) Thinning Combined with Biomass Energy Production May Increase. Rather Than Reduce. Carbon Emissions, DellaSala and Koopman, Geos Institute, November 2015 Influence of Different Tree-Harvesting Intensities on Forest Soil Carbon Stocks in Boreal and Northern Temperate Forest Ecosystems, Clarke et. al., Forest Ecology and Management, September 2015 Rethinking Forest Carbon Assessments to Account for Policy Institutions, Macintosh et. al., Nature Climate Change, June 2015 Life Cycle Impacts of Biomass Electricity in 2020: Scenarios for Assessing the Greenhouse Gas Impacts and Energy Input Requirements of Using North American Woody Biomass for Electricity Generation in the UK, Stephenson and MacKay, Department of Energy and Climate Change, July 2014 Wood Not So Green a Biofuel? Logging may have greater impact on carbon emissions than previously thought, Buchholz, Friedland, et. al., Global Change Biology-Bioenergy, June 2013 Biofuels and Climate Change Mitigation: A CGE Analysis Incorporating Land-Use Change, Timilsina and Mevel, Environmental and Resource Economics, May 2013 Climate impacts of a large-scale biofuels expansion, Hallgren et. al., Geophysical Research Letters, April 2013 The outcome is in the assumptions: analyzing the effects on atmospheric C02 levels of increased use of bioenergy from forest biomass, Holtsmark, Global Change	This comment does not raise specific issues related to the Proposed Action or adequacy of the environmental analysis in the EA. The comment does not provide an explanation of the relevancy of the cited article to climate change. Section 3.2.3 of the Final EA has been revised to address climate change.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
Biology, 2012 Large-scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutral, Schulze et. al., Global Change Bioenergy, 2012 Biomass Fuel Harvesting in the Northern Forest: Effects on Stand Structural Complexity and In Situ Forest Carbon Storage, Keeton et. al, University of Vermont, December 2012 Biogenic vs. geologic carbon emissions and forest biomass energy production, Gunn, Ganz, Keeton, Global Change Bioenergy, May 2012 Correcting a Fundamental Error in Green house Gas Accounting Related to Bioenergy, Haber) et. al., Science Direct, February 2012 Factors contributing to carbon fluxes from bioenergy harvests in the U.S. Northeast: an analysis using field data, Mika and Keeton, Global Change Bioenergy, January 2012 Serrano-Ortiz et. al., Forest Ecology and Management, December 2011 Forest Health Versus Global Warming: Fuel Reduction Like to Increase Carbon Emissions, Oregon State University, Science Daily, December 2011 Zero. One. or In Between: Evaluation of Alternative National and Entity-Level Accounting for Bioenergy, Bird et. al., GCB Bioenergy, October 2011 Regional carbon dioxide implications of forest bioenergy production, Hudiberg et. al., Nature Climate Change, July 2011 Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis, Clark et. al., Oregon State University. May 2011 Forest carbon or forest bioenergy? Assessing trade-offs in GHG mitigation, McKechnie et. al., April 2011 Carbon Dioxide Emissions from Biomass Combustion, Cherubini et. al., Global Change Bioenergy. March 2011 Effects of forest fire on carbon emissions, climate impacts often overestimated, Oregon State University, Science Daily. February 2010 Fixing a Critical Climate Accounting Error, Searchinger et. al. Science, October 2009	
Biomassacre: How logging Australia's native forests for bioenergy harms the climate. wildlife, and people, Markets for Change. April 2013 Dirtier than Coal: Why government plans to subsidies burning trees are bad news for the planet, Royal Society for the Preservation of Birds, Friends of the Earth, Greenpeace, November 2012 The Use of Whole Trees in Wood Pellet Manufacturing, Dogwood Alliance, November 2012	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from woody biomass using a Fischer-Tropsch process.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
The Carbon Footprint of Electricity from Biomass: A Review of the Current State of Science and Policy, Synapse Energy. June 2012 Nothing Neutral Here: Large-scale biomass subsidies in the UK and the role of the EU ETS. Carbon Trade Watch, May 2012 Biomass Supply and Carbon Accounting for Southeastern Forests, National Wildlife Federation, February 2012 Southeast biomass has carbon spike before long-term carbon benefits, Southern Environmental Law Center, February 2012 Climate Scientists Debunk Carbon Neutrality of Biomass Power, Searchinger, Harmon, Moomaw. February 2011 EPA Scientific Advisory Board Carbon Dioxide Accounting for Emissions from Biogenic Sources, Environmental Protection Agency. 2011 The New Biomassters: Synthetic biology and the next assault on biodiversity and livelihoods, Smolker, Emsting, Rhugani, ETC Group, October 2010 Manomet Study Underestimates Biomass Impacts, Massachusetts Forest Watch, July 2010 Review of the Manomet Biomass Sustainability and Carbon Policy Study, Clean Air Task Force, July 2010 Biomass Sustainability and Carbon Policy Study, Manomet Center for Conservation Sciences, June 2010 Clearcut Disaster: Carbon Loophole Threatens U.S. Forest, Environmental Working Group, June 2010. Letter from 90 scientists to Congressional leaders urging that biomass global warming emissions be accounted for properly. May 2010	
Biomass is alarming to many people, because it often is a subsidized smokescreen for future waste burning. The analysis must consider the pollution from the plant as proposed, and from any potential conversion. Plants that have been built initially promising to burn wood have been turned into a toxic material burning/incineration/fuel site. For example, sites that burn tires, railroad ties, and hazardous substances.	The proposed project is a woody biomass to fuel project using the pyrolysis (gasification in the absence of oxygen) to Fischer-Tropsch (F-T) process. This process does not include combustion or incineration as part of the process.
Pollutants Will Worsen Early Snowmelt - and Feed into Climate Change Effects Biomass pollutants will be deposited on snow. This represents dark material that will hasten snow melt, exacerbating the serious adverse effects of climate change on native ecosystems. This will be coupled with the hotter, drier more weed-prone sites	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
created by the massive deforestation, increased roading/road footprint, and other effects of biomass exploitation of wild lands.	of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
Biomass—biofuel production is not renewable energy nor is it carbon neutral-- It has been proven by much research that biomass is not carbon neutral (especially in desert areas such as Lakeview): "Forests store carbon from the atmosphere. When burned, all the carbon that has been sequestered is instantly released back into the atmosphere. If trees grow back on those sites it would take multiple decades or longer to sequester an equivalent amount of carbon". This especially true in this high desert area where it takes over 125 years to grow saw logs.	Section 3.2.2 of the Final EA has been revised to include an analysis of the impacts of the Proposed Action on climate change. The analysis was conducted in accordance with the December 2014 Draft guidance document issued by the Council on Environmental Quality. The proposed project meets the requirements of the Renewable Fuel Standard which includes a carbon lifecycle analysis on the net effect of using woody biomass as a feedstock for the Fischer-Tropsch synthesis process and has determined that the fuel produced represents a significant reduction in GHGs compared to conventional fuel production. The manufacturing of fuels using woody biomass as a feedstock using the Fischer-Tropsch process is a default process under the Renewable Fuel Standard regulations.
ECONOMICS (Peer Reviewed Studies) The Effect of an Incinerator Siting on Housing Appreciation Rates, Kiel and McLain, Journal of Urban Economics, 1995	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from renewable biomass as described in Section 2.3.1 of the Final EA using a Fischer-Tropsch process.
Dangerous Co-location of Gas Line and Railroad, Proximity to Community, and Transport Accident/De-railment Risks The DEA states: A 0.36-mile-long rail spur would be constructed off of the lake County Railroad to transport finished fuel products to market. Loading zones positioned for loading railcars would also be developed. Jn addition, a natural gas pipeline lateral would be extended from the Ruby Pipeline approximately 3 miles south of the Preferred Sire and approximately 3.5 miles south of the Alternative site within the right-of-way for the railroad. A risk analysis of what would take place must be assessed. This includes serious risks to workers and the community if there was an accident - with the mix of gas and highly volatile jet fuel, must be conducted.	The Proposed Action is based on best available science and complies with laws, regulations and the applicable Lake County comprehensive plans (EA, Section 1.4.3). Chapter 3 of the EA analyzes the potential effects of the rail spur and the natural gas pipeline. Section 3.12 of the EA analyzes the potential cumulative impacts.
Have appropriate zoning for the construction/operation of an IBPE and sufficient distance from non-compatible zoning: residential, commercial, public parks and non-industrial areas;	The proposed biofuels plant site, construction, and operation are consistent with the State of Oregon, Lake County, and the Town of Lakeview's planning and zoning requirements. The proposed biomass plant is required to prepare an Emergency

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
There is not sufficient distance due to the dangerous substances involved - natural gas harmful biomass production gases and the final fuel product. If an accident happens, there could be a massive explosion, toxic material released near town, etc.	Response Plan prior to operation of the facility.
This facility and the new gas pipeline are inextricably linked and connected to radical deforestation. The removal and destruction of forests, habitats for aquatic and terrestrial biota, and massive watershed impacts, here will be highly significant. This will also result in additional infrastructure footprint increases and/or upgrades involving roads and other intrusions in the public wild environment. There are serious air and water pollution concerns and human hea[l]th hazards. This project will have calamitous effects on wildlife, watersheds, and public use and enjoyment across a vast area of public lands.	The proposed biomass plant and the 3-mile natural gas pipeline were analyzed in Chapter 3 of the EA. This included the potential direct and indirect effects on resources that are listed in Section 1.1. The resources analyzed in detail in the EA included transportation, socioeconomics, water, air quality, and wildlife. The proposed project does not require modifications to roads.
Biofuel must come from an acceptable feedstock: The following are site selection criteria related to these objectives: Minimize natural and human environmental impacts; Compliant with ""renewable biomass"" as defined in Section 103 of the Federal Land Policy and Management Act of 1976 (43 USC §1702) that: Renewable or recurring organic matter originating from non-Federal or Indian tribal lands held in a Federal trust or subject to restrictions against alienation imposed by the U.S. including: Uses forest byproducts that are removed as a preventative treatment to: reduce forest fire fuel and risk, reduce or contain disease or insect infestation, or restore ecosystem health; Otherwise used for higher-value products; and Harvested in accordance with applicable law and land management plans and required for old growth maintenance, restoration and management in accordance with Section 102 sub-section (e) paragraphs 2 through 4 and the large tree retention sub-section (0 of the Health Forest Restoration Act (16 USC §6512). There is no certainty that ANY of these above are indeed is the case. In fact, clearcutting/removing trees for biomass is likely too INCREASE fire risk by result in hotter, direr, weedier windier sites with earlier and longer fire seasons. There is great and raging debate over ""ecosystem health"". ""treatments"" and deforestation often has serious adverse irreversible ecological outcomes. See Jones et al. 2013, See WLD and DOR comments on…	The types of renewable biomass are discussed in Section 2.3.1 of the Final EA describes the types of renewable biomass that would be used by the proposed plant. As identified in the comment these wastes could be from sources in Oregon, California, or Nevada and are not limited to Lake County. The evaluation of the potential effects from clearcutting, removing trees, ecosystem health, and the risk of wildfire are evaluated by federal and state agencies as part of their regulatory requirements.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
Much of the Lakeview landscape consists of very rugged and/or rocky terrain. Removal of forested vegetation at a scale necessary for biomass production will result in major disturbance, major bulldozing, and destruction of cultural sites and materials as well as profound loss for sensitive and important wildlife species and watersheds - likely forever if weeds move in - of the habitat required by many species of native wildlife. This includes cavity nesting migratory birds, raptors, bats, and many other wildlife species. This includes rare endemic aquatic species already under great stress.	Section 2.3.1 of the Final EA has been revised to more clearly describe the types of renewable biomass that would be used by the proposed plant. The renewable biomass sources for the Proposed Action would be residual materials from sawmills, forest management activities such as pre-commercial thinning, forest restoration and fuels treatments, and timber harvests. The EA analyzed the potential effects on the resources listed in Section 1.1. Chapter 3 of the EA includes analysis of the potential direct, indirect, and cumulative impacts on resources including cultural and biological resources such as migratory birds, fish and wildlife species.
Cesium 137 in Wood Ash: Results of Nationwide Survey, Stewart Farber	The comment does not provide an explanation of the relevancy of the cited articles. Upon review of the article, it appears these articles do not pertain to the production of fuel from renewable biomass described in Section 2.3.1 of the Final EA using a Fischer-Tropsch process.
The gas pipeline and the plant poses a hazard and safety risk for the human residents and communities, as well as a risk to health by increasing the pollutant load in an area very close to non-attainment of air quality conditions. Under all proposed and foreseeable development scenarios, what will the pollutants released be? What will their effects to native biota, including aquatic species, and humans be? What will the risk of explosions and releases of toxic material, uncontrolled natural gas fires, uncontrolled gas or other fires breaking out and consuming the fuel - generating massive fireballs that could kill people in the community and/or lead to uncontrolled wild lands fires? This includes in all phases of development, operation and radical deforestation of broad areas of the landscape.	The proposed biofuels plant site, construction, and operation are consistent with the State of Oregon, Lake County, and the Town of Lakeview's planning and zoning requirements.
We are very concerned that there is no e-mail address for submitting public comments. This serves to limit public involvement in this highly controversial project. This project involves a complex and multi-faceted proposal inextricably connected to public lands. The comment period should be re-opened, and information posted on BLM and US Forest Service websites.	The Air Force received 14 comment letters during the 30 day public comment period. Several of the comment letters were received via email as well as letters delivered via the U.S. Postal Service. Posting of the EA on the BLM and US Forest Service web sites is not required because activities on these agencies' lands which could provide source materials for the Red Rock Biofuels proposed plant and connected actions are evaluated under the applicable federal and state regulations and outside the scope of this EA.
We are very concerned that this biomass facility is really a subsidy to Colorado in particular (to keep gas production activity going there during a gas glut), as Colorado politicians were ardent supporters of the Ruby line. We are very concerned that this is just a huge government subsidy to the gas industry at a time of low prices. Please provide detailed and adequate economic analysis of all aspects of the costs and subsidies with this proposal, and the degree to which any and	As indicated in the FONSI, DoD's Title III funding for this effort will be used primarily to purchase biorefinery equipment. As the economic viability or the financial aspects for the project are not part of the Air Force's NEPA decision making process, a business plan is not provided in the EA.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
all aspects of it subsidized by taxpayers. This includes "harvest" of trees used in biomass in any form.	
There is no real range of reasonable alternatives. Such alternatives include protection of forest and wild land values through conservation initiatives, and enhancing the local economy based on tourism or restoration of sagebrush in burned or other depleted lands, not subsidized clearcutting of forests, and a polluting fuel plant harmful to human health. There is no consideration of alternative fuel project siting – much closer to sources where fuel would be used thus greatly reducing risk of accidents in transport, and using fuel that is truly wood mill or other "waste" – rather than wasting arid forests in a completely unsustainable manner. Those alternatives include the military putting any facility like this close to where there are forests that would not be so greatly damaged, where "waste" truly wood be used, and/or where much more infrastructure is in place. For example, when locating War Planes on military bases, a range of bases are considered in the military analyses we have reviewed in the past.	The range of alternatives considered that meet the purpose and need of the proposed action as described in Chapter 1 of the EA. Conservation initiatives, tourism, and land restoration efforts are outside of the purpose and need of the proposed action. Sections 2.3.1 and 2.3.2 of the EA describe the ADBPP's objectives, requirements and site selection criteria that were used to consider site alternatives for the proposed action. Section 2.3.3 describes alternatives that meet the selection standards and were analyzed in the EA. Section 2.4 discusses alternatives that were considered but eliminated from further analysis in the EA because they did not meet the standards defined in Sections 2.3.1 and 2.3.2.
Cultural sites and artifacts will be exposed to erosion, crushed and damaged by heavy equipment engaged in massive deforestation and expanded roading/road footprints. Culturally significant areas will be destroyed. Pollution from the plant will poison wild lands, waters, habitats and very important cultural sites. As was shown in the cultural studies for the Ruby pipeline, the entire area surrounding Lakeview contains a wealth of cultural sites of great significance.	Section 3.5 of the EA indicates that the Proposed Action could cause adverse impacts to historic and cultural resources. Section 3.5 and Chapters 5 and 7 of the EA discuss and document the AF's consultation efforts with the ACHP, the OR SHPO and local Native American Tribes in accordance with the National Historic Preservation Act Section 106. A MOA was executed to mitigate adverse effects to archeological resources on the project site. The MOA also lays out a Treatment Plan, Construction Monitoring Plan and Unanticipated Discoveries Plan, which will govern how cultural resources are treated during construction activities.
This raises the dangers of the derailment prone railway, and a highly significant environmental impact. Dangerous Co-location of Gas Line and Railroad, Proximity to Community, and Transport Accident/De-railment Risks The DEA states: A 0.36-mile-long rail spur would be constructed off of the lake County Railroad to transport finished fuel products to market. Loading zones positioned for loading railcars would also be developed. Jn addition, a natural gas pipeline lateral would be extended from the Ruby Pipeline approximately 3 miles south of the Preferred Sire and approximately 3.5 miles south of the Alternative site within the right-of-way for the railroad. A risk analysis of what would take place must be assessed. This includes serious risks to workers and the community if there was an accident - with the mix of gas and highly volatile jet fuel. must be conducted.	Lake Railway and their ability to transport hazardous materials are evaluated under the applicable federal regulations. Section 3.10 has been updated to indicate that fuel products will be transported in DOT- approved tank cars. Lake Railway is responsible for emergency response plans and coordinating with first responders for materials and products shipped on their railway.
Project Violates DEA Site Selection Criteria The following are site selection criteria related to these objectives:	The Air Force previously evaluated the applicant's proposed project and determined that Red Rock Biofuel's met the criteria for an award under the ADBPP Program.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
Minimize natural and human environmental impacts; The project does NOT minimize natural and human environmental impacts. It relies on massive deforestation, exacerbates climate change effects, relies on polluting fracked natural gas. Releases an unrevealed toxic soup of processing chemicals, is highly dangerous, destroys irreplaceable cultural sites, lays waste to wild lands and wildlife habitats, threatens ground and surface water with pollution and depletion, threatens native aquatic and terrestrial species, etc. Compliant with "renewable biomass" as defined in Section 103 of the Federal Land Policy and Management Act of 1976 (43 USC §1702) that: Renewable or recurring organic matter originating from non-Federal or Indian tribal lands held in a Federal trust or subject to restrictions against alienation imposed by the U.S. including: There is no indication that deforesting mature and old growth western juniper and other very ancient and slow growing trees is in any way "renewable". There is a grave threat of highly flammable cheatgrass and medusahead infestation that will follow deforestation once sites are disturbed by heavy equipment; become hotter, drier and windier due to loss of shade; are disturbed chronically by livestock grazing and trampling activity. All of these effects will be exacerbated by climate change. Complete EIS level analysis is necessary to understand whether or not ANY additional tree loss in this region is renewable. The area has already bee significantly impacted by past logging, fires, "treatments" for livestock forage, and various forms of human development. Uses forest byproducts that are removed as a preventative treatment to: reduce forest fire fuel and risk, reduce or contain disease or insect infestation, or restore ecosystem health; Otherwise used for higher-value products; [There is no indication that this is the case. This alone shows there is need for complete and integrated analysis at the level of an EIS- as any operation here must rely to a very large extent on deforestation on BLM and Forest Service lands. There is no indication and analysis demonstrating that this will be the case. This shows a clear nexus with public land sand public lands management that must be assessed in an EIS prior to finalization of any analysis for the facility. There is no assessment of what a higher value product might be, and alternative uses for any trees killed on public lands]. Harvested in accordance with applicable law and land management plans and required for old growth maintenance, restoration and management in accordance with Section 102 sub-section (e) paragraphs 2 through 4 and the large tree retention sub-	Sections 2.3.1 and 2.3.2 of the EA describe the ADBPP's objectives, requirements and site selection criteria that were used to consider site alternatives for the Proposed Action. The evaluation of the potential effects from forest management activities are evaluated by federal and state agencies as part of their regulatory requirements. Section 2.3.1 of the Final EA describes the types of renewable biomass that would be used in the proposed plant.

Appendix C Comments and Responses Wildlands Defense, continued	
Comment	**Response**
section (f) of the Health Forest Restoration Act (16 USC §6512).i) ii) [There is no indication and analysis demonstrating that this will be the case. This shows a clear nexus with public land sand public lands management that must be assessed in an EIS prior to finalization of any analysis for the facility]. Renewable organic plant material to include trees, algae, or other microorganisms grown for the specific purpose of converting into energy; and Waste materials including crop residues (including cobs, stover, bagasse and other residues); vegetative waste (including wood wastes and [ed: comment cuts off mid-sentence]	

Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
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January 6, 2016

Mr. James Neely
Air Force Research Laboratory
Wright-Patterson Air Force Base
, Ohio 45433

RE: SHPO Case No. 14-0042
Red Rock Biofuel Plant
CRS/Potentially unearthing significant cultural resources
40S 20E 3, 21, 22, 27, 34, Lakeview, Lake County

Dear Mr. Neely:

Thank you for providing our office the link to the Environmental Analysis (EA) compiled for the Red Rock Biofuels Project, so that we were able to read through the final project analysis. While we have been involved in consultation regarding cultural resources with the current preferred location for the biofuels plant, we were not previously aware that an alternate location was being considered for the biofuels plant. Having checked the proposed alternate location within our statewide GIS database we find that this location is also in an area of high sensitivity for archaeological resources. The database shows the alternate location has not been previously surveyed for archaeological resources, but previous surveys in an adjacent parcel did identify a number of archaeological sites.

When considering alternate locations for similar projects in the past, our office has seen some level of archaeological survey conducted within the alternate locations to determine if important archaeological resources are present. This information can be useful in determining the feasibility of the alternate location, and so would be important to include in a project's EA. If the alternate location for the Red Rock Biofuels Project is selected in the EA review process, an intensive archaeological survey would be needed. This survey would identify any archaeological resources, evaluate these resources for eligibility for inclusion in the National Register of Historic Places, and determine the effect of the proposed project on archaeological sites.

We look forward to continuing our consultation with you on the Red Rock Biofuels Project, and hope we will hear from you directly if any changes are later made to the project location. Please feel free to contact me at your convenience if you have any questions.

Sincerely,

Ross Curtis

Ross Curtis
SHPO Archaeologist
(503) 986-0676
ross.curtis@oregon.gov

Lilliann Watah
501 Chiloquin Blvd
P.O. Box 436
Chiloquin, Oregon 97624
January 01/08/2016

Dear Mr. Neely;

In response to your request for comment on the Lakeview Biomass Plant. The area is a highly culturally significant area, and The Klamath Tribes cannot support the destruction of our cultural sites, and there for cannot support this project without on and off project mitigation. Please feel free to contact our department at the number listed below, and speak to our department director Mr. Perry Chocktoot at 541)783-2219 Ext. 178

Thank you
Lilliann Watah
Cultural Resource Site Protection Specialist

FROM: Paul Fouch, President of Save Our Rural Oregon 8017 Hwy 66 Klamath Falls, OR 97601| 541-884-4324 | pmfouch@gmail.com

TO: DoD, Air Force Research Laboratory

ATTN: James Neely, james.neely@us.af.mil
CC: warren.assink@wpafb.af.mil

DATE: January 26, 2016

SUBJECT: **Version #1 Save Our Rural Oregon's** Public comments on the Environmental Assessment document as sent out by DoD-Title III program for the Red Rock Biofulels Company—due Feb. 5, 2016

Save Our Rural Oregon a nonprofit, public benefit corporation whose primary purpose is to maintain the historical usage of Southern Oregon and Klamath county resources (farmlands and natural environments) to enhance their scenic beauty, rural atmosphere including wildlife habitats, wetlands, migratory bird flyways, and agricultural lands. I am making the following comments on the Red Rock Biofuels ACDP to the DOD for SORO which represents approximately 500 members and supporters.

SORO members are strongly against the approval of the Environmental Assessment document as sent out by DoD-USAF-Title III program for the Red Rock Biofulels Company and unanimously support the comments of Northwest Environmental Defense Center , Oregon Wild's comments, Wild Earth Guardians, Beyond Toxics and other environments groups If more time was given for the comment period, SORO could prove with substantial research data that the negative impacts of the project to the air quality and environment of Lakeview and the biomass supply area far outweigh any positive net benefits

SORO feels that the assessment should not be approved because of the following overall impact area concerns:

--We feel that: **There is minimal public benefit** from the project and engineers from Aerospace companies like Boeing conclude there is really little need for biofuel for jet fuel because it is so inefficient to produce and the quantity is so limited. The negative environmental impact to the forests, wild life habitat and the general environment in Lake County and the surrounding areas in Southern Oregon, Northern California and Nevada will far outweigh any benefits to the economy, the taxpayer and outdoorsmen. One commentator said: "The Department of Defense is subsidizing Red Rock Biofuels, of Ft. Collins, Colorado $75 million to annually create 18 million gallons of highly volatile jet, naphtha"—all at taxpayers expense! I conclude that the damage to environmental resources will far outweigh any public and economic benefits.

--**The document analysis is only site specific** and does not evaluate the damage that biomass logging and thinning will do to the forests in the 100's of miles surrounding the plant from which the feedstock will come. There will not only be a danger to human health from emissions but to the birds and wildlife in the area. (This area is unique wildlife and bird habitat area. Clear cutting and biomass gathering (strip mining) process used for the project will totally deforest and devastate the vegetation of Lakeview and the surrounding areas making the area totally barren thereby causing massive soil erosion and loss of the area's natural wildlife and vegetation habitats. . It has been proven by forest management that in this area and similar areas in Southern Oregon that it will take 100's of years to grow trees back to the point where saw logs can be harvested. And in many areas they won't grow back at all. It has been proven by much research that biomass is not carbon neutral (especially in desert areas such as Lakeview). There appears to be no requirement to reforest the area so only scrub plants

and grass will grow back. Therefore, the wildlife habitat and oxygen producing ability of the forests will be lost forever. As Oregon Wild has stated, juniper is not a weed in Southern Oregon but is required to prevent soil erosion and maintain the water shed and wildlife habitats. (These trees take up to 1000 years to grow.) A private forester has told me that juniper is needed for shade for seedlings in his tree farms.

--Biomass—biofuel production is not renewable energy nor is it carbon neutral-- It has been proven by much research that biomass is not carbon neutral (especially in desert areas such as Lakeview): "Forests store carbon from the atmosphere. When burned, all the carbon that has been sequestered is instantly released back into the atmosphere. If trees grow back on those sites it would take multiple decades or longer to sequester an equivalent amount of carbon". This especially true in this high desert area where it takes over 125 years to grow saw logs.

--It is doubtful that fuel supply from nearby forests will be sufficient to sustain the project for its 20 year life because of these desert forests are not very dense*.

--Since biomass sources are scarce in the area the fuel supply will always require trucking subsidies (since biomass trucking cannot break even if the mileage is greater than 30 miles away.)

SORO also feels that the assessment should not be approved because the following site specific concerns: First SORO is concerned that the DEQ will only measure the HAPS emissions coming from the stack and will not measure the other emissions caused by the operation from the chip storage piles, the site mechanical and chemical operations, the biomass delivery truck supply emissions and the railroad train jet fuel emissions.

SORO also feels that the project will greatly negatively impact the air quality in the Lakeview basin which has never yet met the EPA PM2.5 standard. During the summer there will be wild fires.. Research has shown that biomass harvesting causes more wildfires than no harvesting at all. The project will greatly increase the HAPS inventory for the area and cause a great increase in green house gases and ozone depletion. SORO's environmental engineer has warned me about projects like this that will contribute to an increase in ozone depletion: " I recall the Oregon DEQ telling me and others that Oregon avoided exceeding the EPA ozone air quality standard by not having very many ozone monitors (I think at that time Oregon DEQ only had 2 and they were located such as to not be where the high ozone concentrations occurred). Sometimes high ozone concentrations occur a long distance from the NOx and hydrocarbon emission sources and need hot temperatures."

In addition, SORO sees no Red Rock plan to implement the following SORO requirements. (Although Oregon DEQ ACDP requirements are the most lax of any state in the US, The EPA's Clean Air Act requires that they work toward fulfilling the more strict clean air act requirements in this situation because Lakeview has the worst air quality in the US.—refer to the *San Joaquin Valley* requirements as a precedent.) SORO would like to see plans for implementing the following air quality requirements at the Red Rock production facility:

-Install overall site COMs (opacity monitors)
Actual emission records should be made real time and put on line on a website with public access. In that way the public (and SORO) could access the data real time and put out SORO website alerts and email alerts to have citizens limit their physical activities outside or stay inside –this could be similar to the Klamath City schools red sign alerts at schools when pollution exceeds a healthy level. The above implementations should be required anyway because the SIP has invoked a backup plan to require CEM's for industry and eliminate the use of wood stoves. This has resulted from the violations of EPA 35 ugm standards in 2013. SORO feels continuous emission monitors are justified because: Using CEMs and COMs to force continuous compliance should aid greatly in protecting public health and eliminate the need for costly source and performance testing. Note: SORO has already checked on the public process to implement this request with the EPA.

-Develop plans to install CEMs in processes that emit the most lethal toxics such as PM2.5 on HAPPS

-Show long term commitment by developing plans to install pollution control devices for all emission sources so that no critical emission will be directly discharged into the air.

- Show long term commitment by developing plans to use efficient control devices such as HE multicones and ESPs.

-Prior to the issuance of the ACDP require long term commitment by requiring that Red Rock set aside sinking funds for replacing all the wood stoves in the Lakeview air shed to allow for the increased emissions from Red Rock.

SORO see no plan to control pollution during startup and shutdown operations During startup, shutdown, and other upset conditions caused by burning wet, dirty, frozen fuel and other factors will produce multi-fold higher PM emissions.

Other comments: SORO sees no evaluation of the MTBA and ESA for wildlife impacts in the site area or in the areas to be harvested for feedstock and along the Supply and Shipment Railroad. The Goose Lake basin and surrounding feedstock areas are of unique importance to the global wildlife habitat especially the birds in the Pacific Flyway. Therefore, these impacts must be researched.

Other global factors effecting the environmental impacts of the project.

--**The applicant's previous experience**, if any, in constructing and operating similar facilities
This information has not been divulged and could have a tremendous impact on the quality of the design and operation of the facility to minimize the environmental impact both at the site and in the feedstock gathering area.
My research on Red Rock and their financial investment firm backers Flagship Ventures ! SORO research indicates that Red Rock is a brand new company out of Ft. Collins, Colo. whose main purpose is to thin forests and produce biomass to prevent wildfires. Financially supported by Flagship Ventures a large venture capital firm from Mass. who has diverse investments including Pharmaceuticals and Medical company investments.
Without further information on Red Rock credential, my conclusion is that there would be a huge statistical risk of inferior project quality to protect the Lake County environment.

--**The applicant's plan and assurance of financial ability to retire the facility** when the project is dissolved in 20 years or even sooner.
I see no evidence of such a plan and no assurance of the company's engineering and financial ability to properly retire the facility. Proper retirement of the site facility with its over 100 acres of chip pile storage, chemical waste ponds, chemical production plant and many other dirty and polluting facilities would require a quality environmentally sound plan to minimize environmental impacts to the surrounding Lake County basin and Goose Lake. The plan would require proper pumping out polluted waste ponds, demolishing the site facilities, excavating the ground under the plant facilities and hauling them off to a remote waste collection site.(which should be filled over with clean dirt.) The plant site then, should also be filled over with clean dirt. The DEQ has such a plan it is using to detoxify the old Oregon Tech facility above Klamath Falls.

*--**The applicant's plan to obtain woody biomass feedstock for the 20 year duration of the project**

I conclude the sufficient feedstock for the project cannot possibly be met though Red Rock's association with the Collins sawmill and its timberlands alone. It requires resources from federal and state lands in 3 states to be viable. As another commentator said:

"This complicates things, as each department, bureau, region and state has their own policies and initiatives, their own legal mandates, and all too often they are incongruent with regional land use planning and coordinated response to proposed projects. This project has immense regional forest and land use implications.
Since the project will require forest biomass from federal lands, it is incumbent upon the federal lands management agencies work cooperatively and create a stand alone forest supply assessment for the 20 year lifespan this project. At a minimum, DoD/Red Rock needs to release their own private supply assessment that must have been developed"

My long term research of biomass projects reveals that when these projects run out of woody biomass they often revert to other forms of biomass including organic plant material, animal waste land fill wastes treated municipal and industrial waste. Some projects even burn old tires as fuel for so call green energy sources.

The applicant's evaluation of the site seismic risks

I see no evidence of any investigation of the seismic risks which are prevalent in the Goose Lake basin or consultation with the Oregon Department of Geology and mineral industries. There is no evaluation of seismic hazard maps for the area or soil type analyses. It is well substantiated that this area is on a volcanic plate as is evidence by numerous hot springs in the area. The plant site is obviously in a high hazard earthquake zone. and there is a strong probability of major seismic events. A 6.0 magnitude factor even the 9.0 factor should be evaluated for a mega quakes and require a plan with a sufficient plant design safety factor to protect plant , the site and the surrounding area from chemical damage to the surrounding soil and aquifer.

.The site is in a unique wildlife and bird habitat area which effects the whole Goose Lake basin and must be properly protected from the risk of highly probable seismic events.

More Conclusions.

I conclude that the damage to environmental resources will far outweigh any public and economic benefits. I feel that the site location and feedstock supply area are simply misallocated and will cause too environmental impact problems. For example Lakeview will never be able to meet the EPA's PM2.5 standard and other air quality standards, there is not a sufficient supply of feedstock in this desert area and the transporting in and out of volatile chemicals will endanger residents in all of Southern Oregon.

Paul Fouch, PE President of Save Our Rural Oregon
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FROM: Paul Fouch, President of Save Our Rural Oregon 8017 Hwy 66 Klamath Falls, OR 97601| 541-884-4324 | pmfouch@gmail.com
TO: DoD, Air Force Research Laboratory
ATTN: James Neely, james.neely@us.af.mil
CC: warren.assink@wpafb.af.mil
DATE: April 16, 2015

RE: Red Rock Biofuels - NEPA compliance

Dear Mr. Neely:

Save Our Rural Oregon a nonprofit, public benefit corporation whose primary purpose is to maintain the historical usage of Southern Oregon and Klamath county resources (farmlands and natural environments) to enhance their scenic beauty, rural atmosphere including wildlife habitats, wetlands, migratory bird flyways, and agricultural lands. I am making the following comments on the Red Rock Biofuels NEPA evaluation for SORO which represents approximately 500 members and supporters.

SORO members are strongly against the project for the Lakeview and unanimously support Oregon Wild's comments. (Please refer to Oregon Wild's comments sent to you on March 30.) If more time was given for the comment period, SORO could prove with substantial research data that the negative impacts of the project to the environment and economy of Lakeview and the biomass supply area far outweigh any positive net benefits.

SORO's main concern is that the clear cutting and biomass gathering (strip mining) process used to gather the biomass fuel for the operation will totally deforest and devastate the vegetation of Lakeview and the surrounding areas making the area totally barren thereby causing massive soil erosion and loss of the area's natural wildlife and vegetation habitats. It has been proven by forest management that in this area and similar areas in Southern Oregon that it will take 100's of years to grow trees back to the point where saw logs can be harvested. And in many areas they won't grow back at all. It has been proven by much research that biomass is not carbon neutral (especially in desert areas such as Lakeview): "Forests store carbon from the atmosphere. When burned, all the carbon that has been sequestered is instantly released back into the atmosphere. If trees grow back on those sites it would take multiple decades or longer to sequester an equivalent amount of carbon"

As Oregon Wild has stated, juniper is not a weed in Southern Oregon but is required to prevent soil erosion and maintain the water shed and wildlife habitats. A private forester has told me that juniper is needed for shade for seedlings in his tree farms.

Since biomass sources are scarce in the area the fuel supply will always require trucking subsidies (since biomass trucking cannot break even if the mileage is greater than 30 miles away.)

The project will greatly negatively impact the environment especially the air quality. Research has shown that biomass harvesting causes more wildfires than no harvesting at all. The project will greatly increase the HAPS inventory for the area and cause a great increase in green house gases and ozone depletion. SORO's environmental engineer has warned me about projects like this that will contribute to an increase in ozone depletion: " I recall the Oregon DEQ telling me and others that Oregon avoided exceeding the EPA ozone air quality standard by not having very many ozone monitors (I think at that time Oregon DEQ only had 2 and they were located such as to not be where the high ozone concentrations occurred). Sometimes high ozone concentrations occur a long distance from the NOx and hydrocarbon emission sources and need hot temperatures."

Final Note: SORO taxpayers do not want a project like this to be located in our area that has to be totally subsidized to be build and operate. If the Lakeview location is so great why give Red Rock any subsidies at all? They should be willing to build and operate the plant on their own finances in Lakeview?

Paul Fouch, PE President of Save Our Rural Oregon
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CENTER for BIOLOGICAL DIVERSITY Because life is good.

February 4, 2016

Via Federal Express

James Neely
Warren Assink
AFRL/RXME
Building 653, Rm 215
WPAFB Ohio 45433

Re: Draft Environmental Assessment and Finding of No Significant Impact Red Rock Biofuels LLC Woody Biomass Refinery, Lake County, Oregon

Dear Messrs. Neely and Assink:

The Center for Biological Diversity ("Center") submits the following comments on the Draft Environmental Assessment ("EA") and Finding of No Significant Impact ("FONSI") prepared by the Air Force for the proposed Red Rock Biofuels facility in Lakeview, Oregon (the "facility"). The Center is a non-profit organization with offices throughout the United States and more than 990,000 members and online activists. The Center's mission is to ensure the preservation, protection and restoration of biodiversity, native species, ecosystems, public lands and waters and public health. In furtherance of these goals, the Center's Climate Law Institute seeks to reduce U.S. greenhouse gas emissions and other air pollution to protect biological diversity, the environment, and human health and welfare. Specific objectives include securing protections for species threatened by global warming, ensuring compliance with applicable law in order to reduce greenhouse gas emissions and other air pollution, educating and mobilizing the public on global warming and air quality issues, and ensuring proper consideration of the direct and indirect impacts of biomass utilization and biofuels production on air quality, forest habitat, and the climate.

As discussed below, the EA fails to satisfy the requirements of the National Environmental Policy Act ("NEPA") and implementing regulations. Among other things, the EA fails to provide any meaningful disclosure of the facility's greenhouse gas emissions and neglects to assess their significance. The EA also fails to assess the potential indirect effects on area forests and biological resources associated with creating a massive source of new demand for woody biomass. Finally, the EA fails to assess a reasonable range of alternatives that might accomplish the Air Force's (and Congress's) objectives in a less environmentally damaging way. The EA and FONSI must be revised, or the Air Force must prepare an environmental impact statement ("EIS"), before moving ahead with any action related to the facility.

Alaska · Arizona · California · Florida · Minnesota · Nevada · New Mexico · New York · Oregon · Vermont · Washington, DC
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I. Statutory and Regulatory Background

The National Environmental Policy Act is the United States' "basic national charter for protection of the environment." 40 C.F.R. § 1500.1.[1] Congress enacted NEPA "[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; [and] to enrich the understanding of the ecological systems and natural resources important to the Nation." 42 U.S.C. § 4321. NEPA demands, "to the fullest extent possible . . . the policies, regulations, and public laws of the United States . . . be interpreted and administered in accordance with" its principles. *Id.* § 4332(1).

NEPA requires agencies to take a hard look at the environmental impacts of proposed actions and fully disclose these impacts to the public before proceeding. "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b). This process "is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." *Id.* § 1500.1(c). Agencies must "integrate the NEPA process . . . at the earliest possible time to insure that planning and decisions reflect environmental values." *Id.* § 1501.2. "Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." *Id.* §§ 1500.1(b), § 1502.24.

To accomplish these goals, NEPA requires that agencies prepare an environmental impact statement for all "major federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). "The primary purpose of an [EIS] is to serve as an action-forcing device to insure that the policies and goals defined in [NEPA] are infused into the ongoing programs and actions of the Federal Government." 40 C.F.R. § 1502.1. Environmental impact statements "shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made." *Id.* § 1502.2(g); *see also id.* § 1502.5.

Major federal actions "include new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies" and "new or revised agency rules, regulations, plans, policies, or procedures." *Id.* § 1508.18(a).

To determine whether an action will have a significant impact on the environment, an agency may first prepare an environmental assessment. *Id.* § 1501.4. Significance "requires considerations of both context and intensity." *Id.* § 1508.27.

[1] Air Force NEPA regulations (32 C.F.R. Part 989) are intended to "achieve and maintain compliance with NEPA and the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA (40 CFR Parts 1500 through 1508, referred to as the 'CEQ Regulations')." 32 C.F.R. § 989.1(b).

Context "means that the significance of an action must be analyzed in several contexts such as society as a whole . . . the affected region, the affected interests, and the locality." *Id.* § 1508.27(a). Intensity "refers to the severity of the impact." *Id.* § 1508.27(b).

Determining the significance of an impact requires a consideration of several specific factors, including the following: "Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial"; "The degree to which the proposed action affects public health or safety"; "The degree to which the effects on the quality of the human environmental are likely to be highly controversial"; "The degree to which the possible effects on the human environment are highly uncertain of involve unique or unknown risks"; "Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulative impact on the environment"; "The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act"; and "Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment." *Id.* § 1508.27(b).

An EA must "briefly provide sufficient evidence and analysis for determining whether to prepare an [EIS] or a finding of no significant impact" and include "brief discussions of the need for the proposal, or alternatives" and "the environmental impacts of the proposed action and alternatives." *Id.* § 1508.9. The purpose of the EA is to assist the agency in determining whether the project may significantly affect the environment and therefore require a full EIS. 42 U.S.C. § 4332(2)(c); 40 C.F.R. § 1508.9; 32 C.F.R § 989.14(c)(1).

Agencies can avoid preparing an EIS only if the action will have "no significant impact" on the environment. *See* 40 C.F.R. §§ 1501.4(e), 1508.13. If an agency determines that a project will not have a significant impact on the environment, it must prepare a Finding of No Significant Impact ("FONSI"). *Id.* § 1508.13. The FONSI must "present[] the reasons why an action, not otherwise excluded, will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared." *Id.*

II. The EA Fails to Adequately Disclose, Evaluate, and Propose Mitigation for the Facility's Emissions of Greenhouse Gases and Other Air Pollutants.

Although individual sources of greenhouse gas ("GHG") emissions may seem insignificant, climate change is a problem driven by the cumulative impacts and effects of numerous emissions sources. Indeed, "the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis" agencies must conduct under NEPA. *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008) . One source or one small project may not appear to have a significant effect on climate change, but the combined impacts of many sources are dramatically affecting and will continue to affect the climate as a whole. NEPA requires

accurate scientific and factual information regarding this and other impacts. *See* 40 C.F.R. §§ 1500.1(b), 1502.24.

As the EA acknowledges, the Council on Environmental Quality ("CEQ") issued revised draft guidance for assessment of greenhouse gas emissions in December 2014 ("NEPA GHG Guidance").[2] Because climate change is the result of cumulative greenhouse gas emissions from a wide range of projects, the NEPA GHG Guidance "recommends agencies use the projected GHG emissions and also, when appropriate, potential changes in carbon sequestration and storage, as the proxy for assessing a proposed action's potential climate change impacts."[3] The guidance also acknowledges that projects like this one—which may influence forest management activities across the wide area from which woody biomass feedstocks are drawn—may require analysis, among other things, of "net GHG emissions and carbon stock changes that would occur with and without implementation of the anticipated vegetation management practice. The analysis should take into account the GHG emissions (biogenic and fossil), carbon sequestration potential, and the net change in carbon stocks that are relevant in light of the proposed actions and timeframes under consideration."[4] Finally, as the EA recognizes, the guidance recommends that NEPA documents contain "quantitative analysis and disclosure" of greenhouse gas emissions for projects with direct annual emissions exceeding 25,000 metric tons carbon dioxide equivalent ("CO_2e") per year.[5]

The EA here satisfies none of NEPA's requirements. Indeed, the document is devoid of any meaningful disclosure of GHG emissions, whether direct or indirect, and fails entirely to analyze the significance of these emissions. The proposed FONSI[6] likewise is stated in entirely conclusory terms and fails to set forth any rational explanation that would support a conclusion that the facility's greenhouse gas emissions may be considered less than significant.

A. The EA Fails to Provide Any Disclosure or Analysis of the Significance of the Facility's GHG Emissions.

As the Review Report for the final Air Contaminant Discharge Permit ("ACDP") for the facility shows, the project has the potential to emit a total of 247,407 metric tons CO_2e per year—nearly ten times the disclosure and analysis threshold identified in the NEPA GHG Guidance.[7] The bulk of these emissions—more than 168,000 metric tons CO_2e per year—are from fossil fuel sources, namely natural gas combustion in the

[2] EA at 28.
[3] NEPA GHG Guidance at 8.
[4] *Id.* at 13.
[5] EA at 28; *see* NEPA GHG Guidance at 17-18.
[6] *See* EA at x.
[7] Oregon Dept. of Envtl. Quality, Standard Air Contaminant Discharge Permit Review Report, Permit No. 19-0016-ST-01 at 28 (June 24, 2015) (hereafter "ACDP Review Report") (attached).

gasifier heater and auxiliary boiler.[8] The facility also will emit more than 68,000 metric tons CO_2e per year from the amine unit, which removes CO_2 from the woody biomass syngas stream and vents it directly to the atmosphere.[9] Finally, combustion and use of the fuels produced by the facility—7.2 million gallon (MMgal) of jet fuel, 7.2 MMgal of diesel fuel, and 3.6 MMgal of naphtha[10]—will result in additional indirect GHG emissions.

The EA does not explain its rationale for declining to quantify, disclose, and analyze the significance of these emissions. At best, the EA contains two vague, contradictory statements regarding the quantity of GHG emissions from the facility. The document acknowledges that the facility has the potential to emit more than 25,000 metric tons CO_2e per year, but on the same page states that "[a]t the expected generation levels the total annual emissions at the preferred site is expected to be below 25,000 metric tons of CO_2e which is the reference point suggested per revised draft CEQ guidance for a quantitative analysis and disclosure of GHG emissions (CEQ, 2014)."[11] The EA does not explain the inconsistency between these two statements, nor does it explain the dramatic inconsistency between the latter assertion and the figures in the ACDP Review Report, which are nearly ten times higher than the CEQ "reference point" of 25,000 metric tons CO_2e per year.[12] Indeed, the latter assertion—that annual emissions are "expected to be below 25,000 metric tons of CO_2e"—appears to be false. These contradictory and inconsistent statements fail to demonstrate that the Air Force has taken a "hard look" at the facility's impacts, rationally evaluated their significance, and discussed potential mitigation measures for those impacts. Without this "hard look," the EA cannot serve its statutory and regulatory purpose under NEPA.

B. The Air Force Cannot Ignore Biomass-Derived GHG Emissions.

The facility's enormous fossil fuel emissions aside, the Air Force cannot rationally ignore direct emissions from the amine unit or indirect emissions from fuel combustion on the basis that these emissions result from processing and combustion of woody biomass feedstocks. Biomass and fossil CO_2 are indistinguishable in terms of their

[8] *Id.* at 5, 28.
[9] *Id.* at 6, 28.
[10] *Id.* at 4.
[11] EA at 36.
[12] At times the EA appears to rely on references to the ACDP in place of disclosure of the facility's impacts. *See, e.g.*, EA at 28. This is improper. Disclosure and analysis in another non-NEPA document cannot satisfy the Air Force's NEPA responsibilities; it is the responsibility of the Air Force, not the Oregon Department of Environmental Quality, to assess the significance of the facility's greenhouse gas emissions under NEPA. The ACDP does not conduct a significance analysis, and the state agency that prepared the ACDP has no authority under NEPA or applicable regulations to conduct a significance analysis. And, as discussed above, the EA contradicts the ACDP Review Report in any event.

atmospheric forcing effects.[13] Claims that biomass and fossil CO_2 should be analyzed differently thus turn entirely on "net" carbon cycle effects, particularly the possibility that new growth will resequester carbon emitted from combustion, and/or the possibility that biofuels production and combustion might "avoid" emissions that would otherwise occur. But even if these net carbon cycle effects are taken into account, emissions from biomass processing and combustion can increase atmospheric CO_2 concentrations for decades to centuries depending on feedstocks, biomass harvest practices, and other factors. Multiple studies have shown that it can take a very long time to discharge this so-called "carbon debt" associated with bioenergy and biofuels production, even where fossil fuel displacement is assumed, and even where "waste" materials like forest residuals are used as feedstocks.[14] One study, using realistic assumptions about initially increased and subsequently repeated bioenergy harvests of woody biomass, concluded that the resulting atmospheric emissions increase may even be permanent.[15]

These same principles apply to the forest-derived woody biomass that would be used as biofuel feedstock in the Red Rock facility. For example, forestry residues (such as the "slash" left behind from logging operations) typically take years to decades to decompose, and use of these materials for bioenergy or biofuels therefore can incur a

[13] U.S. EPA Science Advisory Board, *Science Advisory Board Review of EPA's Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources* 7 (Sept. 28, 2012) (hereafter "SAB Panel Report") (Docket No. EPA-HQ-OAR-2013-0602-0165) (attached); *Center for Biological Diversity, et al. v. EPA*, 722 F.3d 401, 406 (D.C. Cir. 2013) ("In layman's terms, the atmosphere makes no distinction between carbon dioxide emitted by biogenic and fossil-fuel sources").

[14] *See, e.g.*, Stephen R. Mitchell, et al., *Carbon Debt and Carbon Sequestration Parity in Forest Bioenergy Production*, Global Change Biology Bioenergy (2012) ("Mitchell 2012"), doi: 10.1111/j.1757-1707.2012.01173.x (attached); Ernst-Detlef Schulze, et al., *Large-scale Bioenergy from Additional Harvest of Forest Biomass is Neither Sustainable nor Greenhouse Gas Neutral*, Global Change Biology Bioenergy (2012), doi: 10.1111/j.1757-1707.2012.01169.x at 1-2 (attached); Jon McKechnie, et al., *Forest Bioenergy or Forest Carbon? Assessing Trade-Offs in Greenhouse Gas Mitigation with Wood-Based Fuels*, 45 Environ. Sci. Technol. 789 (2011) (attached); Anna Repo, et al., *Indirect Carbon Dioxide Emissions from Producing Bioenergy from Forest Harvest Residues*, Global Change Biology Bioenergy (2010) ("Repo 2010"), doi: 10.1111/j.1757-1707.2010.01065.x (attached); Manomet Center for Conservation Sciences, Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources (2010), available at https://www.manomet.org/publications-tools/sustainable-economies/biomass-sustainability-and-carbon-policy-study-full-report.

[15] Bjart Holtsmark, *The Outcome Is in the Assumptions: Analyzing the Fffects on Atmospheric CO_2 Levels of Increased Use of Bioenergy From Forest Biomass*, Global Change Biology Bioenergy (2012), doi: 10.1111/gcbb.12015 (attached).

significant carbon debt period.[16] Recent studies also have shown that intensive harvest of logging residues that otherwise would be left to decompose on site can deplete soil nutrients and retard forest regrowth as well as reduce soil carbon sequestration.[17] One could argue that if logging residues otherwise would be burned in the open, using those same materials for bioenergy or biofuels might result in a very short carbon payback period. This may be theoretically accurate, but for at least three reasons it cannot simply be assumed. First, unlike conversion of residues to biofuels, broadcast and pile burning of logging slash does not tend to consume all of the material; a significant portion may remain uncombusted on site. According to Forest Service research, fuel consumption in slash piles can range as low as 75%.[18] Combustion factors for broadcast understory burning of coarse woody debris can be as low as 60%.[19] Second, open burning of slash is not a universal practice, nor is it universally permissible; rather, it depends on local conditions, including weather and relevant forest management and air quality regulations. And third, the facility operator would have to verify that specific materials in this category both (a) result from logging operations that would have occurred regardless of any economic influence exerted by the presence of a nearby biomass facility, and (b) otherwise could have and would have been burned in the open if not used for bioenergy at combustion efficiencies approaching 100%. All of these factors require site-specific analysis and careful monitoring and verification (including documentation of timber harvest operations and practices and chain-of-custody verification of the source of materials), none of which is provided for in any extant permit related to this facility.

Biomass and biofuels proponents often argue that using non-merchantable trees and understory materials from thinning operations intended to reduce wildfire severity offsets or even reduces net greenhouse gas emissions. Several studies, however, have demonstrated that thinning forests and burning the resulting materials for bioenergy can result in a loss of forest carbon stocks and a transfer of carbon to the atmosphere lasting many years. Because it is impossible to know in advance whether wildfire will occur in a

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[16] EPA has acknowledged that forestry residues, for example, may take 10-15 years to decompose if not used for bioenergy. Deferral for CO_2 Emissions From Bioenergy and Other Biogenic Sources Under the Prevention of Significant Deterioration (PSD) and Title V Programs: Proposed Rule, 76 Fed. Reg. 15249, 15259/1 (March 21, 2011). Other studies have shown that larger "residues" may take much longer to decompose. *See generally* Repo 2010, supra note 14.

[17] David L. Achat, et al., *Forest soil carbon is threatened by intensive biomass harvesting*, Scientific Reports 5:15991 (2015), doi:10.1038/srep15991 (attached); D.L. Achat, et al., *Quantifying consequences of removing harvesting residues on forest soils and tree growth – A meta-analysis*, 348 Forest Ecology & Mgmt. 124 (2015) (attached).

[18] Colin C. Hardy, *Guidelines for Estimating Volume, Biomass, and Smoke Production for Piled Slash*, U.S. Dept. of Agriculture, Forest Service, Pacific Northwest Research Station, Gen. Tech. Rep. PNW-GTR-364 (1996) (attached).

[19] *See* Eric E. Knapp et al., Fuel Reduction and Coarse Woody Debris Dynamics with Early Season and Late Season Prescribed Fire in a Sierra Nevada Mixed Conifer Forest, 208 Forest Ecology & Mgmt. 383 (2005) (attached).

thinned stand, thinning operations may remove carbon that never would have been released in a wildfire; one recent study concluded, for this and other reasons, that thinning operations tend to remove about three times as much carbon from the forest as would be avoided in wildfire emissions.[20] Another report from Oregon found that thinning operations resulted in a net loss of forest carbon stocks for up to 50 years.[21] Under basic physical mass balance principles, that carbon stock loss represents an equivalent increase in atmospheric carbon. Another report found that even light-touch thinning operations in several Oregon and California forest ecosystems incurred carbon debts lasting longer than 20 years; even where carbon payback times were shorter than two decades, the study's conclusions depended on ecosystem-specific characteristics.[22] These studies also indicate that payback times depend heavily on local characteristics, such as forest type and wildfire behavior; as a result, emissions resulting from gasification of this category of materials cannot simply be ignored.

The Air Force thus cannot assume that biomass-related CO_2 emissions from the facility have no effect on the climate. As EPA's Science Advisory Board panel on biogenic CO_2 emissions recently concluded, biomass cannot be considered a priori "carbon neutral."[23] Rather, a full and scrupulously accurate life-cycle analysis is essential to understanding the atmospheric implications of converting biomass to liquid fuel.[24]

C. The EA Unjustifiably Omits Any Discussion of Methane Leakage.

The proposed facility includes a new natural gas pipeline, to be built as a lateral from the Ruby Pipeline.[25] Natural gas consists predominantly of methane, which is a powerful greenhouse gas that contributes substantially to global climate change. Its global warming potential is approximately 34 times that of carbon dioxide over a 100 year time frame and at least 86 times that of carbon dioxide over a 20 year time frame.[26]

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[20] John L. Campbell, et al., *Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions?* Front. Ecol. Env't (2011), doi:10.1890/110057 (attached).
[21] Joshua Clark, et al., *Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis*, Final Report (Ore. State Univ. College of Forestry May 25, 2011) (attached).
[22] Tara Hudiburg, et al., *Regional carbon dioxide implications of forest bioenergy production*, Nature Climate Change (2011), doi: 10.1038/NCLIMATE1264 (attached).
[23] SAB Panel Report, *supra* note 13 at 18.
[24] *See id.*; *see also generally* Timothy D. Searchinger, et al., *Fixing a Critical Climate Accounting Error*, 326 Science 527 (2009) (attached); see also Mitchell 2012, *supra* note 14 at 9 (concluding that management of forests for maximum carbon sequestration provides straightforward and predictable benefits, while managing forests for bioenergy production requires careful consideration to avoid a net release of carbon to the atmosphere).
[25] EA at ii.
[26] Intergovernmental Panel on Climate Change, Chapter 8: Anthropogenic and Natural Radiative Forcing in Contribution of Working Group I to the Fifth Assessment Report of

Leakage of natural gas can occur from both transmission and distribution infrastructure.[27] The EA must assess the potential for fugitive methane leakage and upset releases from construction and operation of the new natural gas lateral.

D. The EA Must Address the Significance of Potential Leaks and Upsets Resulting in Emissions of Toxic Chemicals

Biomass gasification produces not only synthesis gas, but also various organic compounds collectively described in the literature as "tars"; one of the primary constituents of these "tars" is benzene, a known hazardous chemical.[28] The ACDP Review Report acknowledges the possibility of fugitive emissions of benzene and other hazardous chemicals from equipment leaks and upsets,[29] but the EA fails to address the potential significance of these releases and their effects on the health and safety of facility workers and others.

E. The EA Understates the Number of, and Resulting Emissions from, Truck Trips.

The EA estimates that the facility will generate 40-50 truck trips per day.[30] The ACDP Review Report, however, discloses that the facility will generate up to 65 truck trips per day.[31] The EA must be revised to include accurate truck trip and emissions estimates. Furthermore, the EA contains no disclosures or analysis of significance related to emissions hotspots (from idling on-site or at traffic intersections) that may be created or exacerbated in and around Lakeview as a result of increased truck traffic associated with the facility. The EA must be revised to correct these inconsistencies and omissions.

III. The EA Fails to Adequately Disclose, Evaluate, and Propose Mitigation for the Facility's Potential Effects on Forest Resources and Habitat.

The EA's discussion of biological resources is limited to resources occurring on the two alternative project sites. As a result, the EA omits any discussion of impacts that could occur as a result of increased demand for woody biomass materials from the forests anticipated to provide facility feedstocks. Absent a feedstock supply assessment, it is

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the Intergovernmental Panel on Climate Change at 714 (Table 8.7) (2013) (excerpt attached); Shindell, Drew, *Improved Attribution of Climate Forcing to Emissions*, 326 Science 716 (2009) (attached).

[27] Howarth, R. W. *A bridge to nowhere: methane emissions and the greenhouse gas footprint of natural gas*, 2(2) Energy Science and Engineering 47, 49 (2014) (attached).

[28] Sergejs Osipovs, *Sampling of benzene in tar matrices from biomass gasification using two different solid-phase sorbents*, 391 Analytical and Bioanalytical Chemistry 1409, 1410-11 (2008), doi:10.1007/s00216-007-1809-7 (attached).

[29] *See* ACDP Review Report at 40.

[30] EA at 20; *see id.* at 388 (calculating "delivery truck" emissions based on 50 trips/day).

[31] ACDP Review Report at 4, 5.

impossible to conclude that the facility will not have any significant impact on nearby forest resources related to increased demand.

The EA anticipates that the facility will use 170,000 bone dry tons ("bdt") of woody material per year.[32] Biomass yields from forestry operations vary, but one study estimated that thinning operations for wildfire severity reductions must remove about 12.5 bdt per acre in order to be economically feasible.[33] At this level, the facility potentially could result in an additional 13,600 acres of thinning operations per year, with attendant impacts on biological resources, forest habitat, water quality, soil compaction, and equipment emissions. Again, these potential impacts cannot be ignored and must be addressed in the context of a feedstock supply assessment, which must include a description of current and anticipated forestry operations on the private and public lands within an economically realistic radius of the facility.[34]

IV. The EA Fails to Consider a Reasonable Range of Alternatives and/or Defines the Project's Objectives Too Narrowly.

The EA focuses on only two project alternatives, consisting of alternative sites for construction of the same basic facility. This does not satisfy NEPA's requirement for analysis of a reasonable range of alternatives.

NEPA requires that agencies "(r)igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). "The Air Force must analyze reasonable alternatives to the proposed action and the 'no action' alternative in all EAs and EISs, as fully as the proposed action alternative." 32 C.F.R. § 989.8(a); *see also id.* § 989.14(e) ("The alternatives section of an EA and an EIS are similar and should follow the alternatives analysis guidance outlined in § 989.8."). "'Reasonable' alternatives are those that meet the underlying purpose and need for the proposed action and that would cause a reasonable person to inquire further before choosing a particular course of action. Reasonable alternatives are not limited to those directly within the power of the Air Force to implement. They may involve another government agency or military service to assist in the project or even to become the lead agency." 32 C.F.R. § 989.8(b).

A rigorous review of alternatives is considered the "heart" of environmental analysis under NEPA. *See* 40 C.F.R. § 1502.14. According to CEQ regulations, agencies must "use the NEPA process to identify and assess the reasonable alternatives to

[32] EA at 11.
[33] Gary Nakamura, *Harvesting forest biomass reduces wildfire fuel*, 50 California Agriculture 13, 15 (1996) (attached).
[34] Although not discussed in the main body of the EA, the 2011 Long-Range Strategy for the Lakeview Federal Stewardship Unit (listed as an EA reference) specifically anticipates that construction of a biomass facility will help facilitate thinning projects in surrounding forests. *See id.* at 6. The strategy does not, however, assess the additional demand for woody biomass feedstocks created by the Red Rock facility in the context of other potential sources of demand or any resulting change in forest management.

proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 40 C.F.R. § 1500.1(e). "NEPA's requirement that alternatives be studied, developed, and described both guides the substance of the environmental decisionmaking and provides evidence that the mandated decsionmaking process has actually taken place." *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (citation omitted).

An agency cannot avoid analyzing a reasonable range of alternatives by "defin[ing] the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action," rendering NEPA analysis "a foreordained formality." *Nat'l Parks & Conservation Ass'n v. BLM*, 606 F.3d 1058, 1070 (9th Cir. 2010) (quoting *Friends of Southeast's Future v Morrison*, 153 F.3d 1059, 1066 (9th Cir 1998); accord *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991); *City of New York v. United States Dep't of Transp.*, 715 F.2d 732, 743 (2d Cir. 1983).

The EA describes the purpose and need of the Air Force's action not in terms of *building* any particular facility, much less this particular facility, but rather in terms of *providing support* for *any* facility that can supply a particular quantity of drop-in biofuels that meet Air Force specifications:

> The Air Force DPA Title III Program is therefore interested in establishing the commercial-scale manufacture and supply of drop-in replacement biofuels for aviation and marine diesel applications. . . . The purpose of the Proposed Action is the design, construction and/or retrofit, validation, qualification, and operation of a domestic commercial-scale IBPE that meets a requirement of at least 15.6 million gallons per year neat (100% pure, unblended) biofuel capacity. The IBPE will be capable of producing drop-in liquid transportation fuels targeted for military operational use, and as such, must be approved and certified MILSPEC JP-5, JP-8 and/or F-76 equivalents by the time the IBPE becomes operational.[35]

The "Program Objectives" section of the EA similarly describes the general characteristics of a facility meeting DPA Title III requirements, but does not identify any objectives that would require funding only of this specific facility.[36]

Accordingly, the purpose and need of the specific Air Force action under review here is therefore to provide funding for a facility that can produce a particular quantity of biofuels that meet Air Force specifications. Alternatives, therefore, should not be limited just to different locations for this specific facility; rather, the EA must include alternatives that would direct support to other, alternative biofuels facilities that could potentially meet the Air Force's requirements with fewer adverse impacts.

[35] EA at vii.
[36] *Id.* at 11-13.

As a threshold matter, it is not clear that the Red Rock facility satisfies the stated purpose and need. As described by the Air Force, the DPA Title III program requires production of at least 15.6 million gallons per year of "drop-in" biofuels, i.e., biofuels that can be blended directly with other fuels and used in aviation applications. This facility, however, will have a maximum capacity of only 14.2 million gallons of jet fuel and diesel fuel.[37] If the facility actually is intended to have a higher capacity, in line with DPA Title III requirements, not only the EA, but also the ACDP and other permits, will likely require revision.

More generally, the Red Rock facility hardly even qualifies as a "biofuels" facility; indeed, the facility could make—and in fact is specifically *designed* to make—the same Fischer-Tropsch fuels directly from natural gas with far lower GHG emissions.[38] Adding woody biomass gasification to the process simply decreases overall efficiency, increases GHG emissions, and entails a range of other impacts from long-distance truck trips to increased removal of biomass from nearby forests. More critically, there is simply no guarantee that the fuels produced from the facility will even be "biofuels" at all, and no assessment in the EA as to what quantity, if any, of the total fuels produced at the facility will be derived from biomass as opposed to natural gas. Again, it is far from clear that this facility satisfies the requirements of the DPA Title III program.

Even if the Air Force could support its determination that the facility satisfies the purpose and need of the DPA Title III program, the EA would still be deficient under NEPA. The EA must contain an alternatives analysis sufficient to inform the Air Force as to whether this is the facility it should be investing in, or whether there are any other less environmentally damaging facilities that might be able to meet the EA's (and the Air Force's) stated objectives. As drafted, the EA effectively presents the Air Force's decision to invest in this facility as a foregone conclusion by analyzing a far too narrow range of alternatives. Accordingly, the EA (or EIS, if one is required following preparation of an adequate EA) must explore other reasonable alternatives for investment.

Alternatively, but for the same reasons, to the extent the Air Force views the purpose and need of this project as advancing construction of the Red Rock Biofuels facility in particular, the Air Force has defined the project objectives too narrowly and placed too much weight on Red Rock Biofuels' private interests. Although an agency's NEPA analysis must "acknowledge private goals" related to a project's purpose and need, this is "a far cry from mandating that those private interests define the scope of the proposed project." *National Parks Conservation Ass'n*, 606 F.3d at 1070. The views of Congress, as expressed in the agency's "statutory authorization to act" and other enactments, take precedence over private interests. *Id.* (citing *Citizens Against*

[37] ACDP Review Report at 4. Although the facility will also produce 3.6 million gallons of naphtha annually, naphtha does not appear to meet Air Force requirements for "drop-in" biofuels without further refining.
[38] ACDP Review Report at 47 ("A Red Rock Biofuels engineering study shows that less carbon dioxide will be vented if natural gas is used as feedstock").

Burlington, 938 F.2d at 196). Again, the congressional authorization at issue here, as expressed in the DPA Title III program, does not direct the Air Force to support this particular facility or relieve the Air Force of its responsibility under NEPA to ensure that all reasonable alternatives consistent with congressional direction are evaluated.

V. Conclusion

For the foregoing reasons, the EA for the Red Rock Biofuels facility fails to comply with NEPA. The Air Force must either revise the EA and FONSI to comply with NEPA and applicable regulations or proceed directly to preparation of an EIS.

Please include these comments and the reference documents provided in PDF format on the enclosed CD-ROM in the administrative record for this proceeding. Thank you for your consideration of these comments.

Sincerely,



Kevin P. Bundy
Senior Attorney

Encl.: CD-ROM containing PDF copies of references cited (see attached list)

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(Included in PDF format on enclosed CD-ROM)

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ELEVEN AUTONOMOUS BANDS

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ATT: James A. Neely, Program Manager
Defense Production Act (DPA) Title III
Manufacturing and Industrial Technologies Division
Materials and Manufacturing Directorate
Air Force Research Laboratory
DSN: 674-4374

RE: EA Comments for Advanced Drop-in Biofuels Production Project (ADBPP)

Date: 02/04/16

This letter is submitted as comment to the recent Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for Red Rock Biofuels LLC, Woody Biomass Biorefinery Capability Development Project, executed for the DEPARTMENT OF DEFENSE TITLE III PROGRAM, WRIGHT-PATTERSON AFB OH 45433. Also, as continuation to the formal objection letter provided by the Pit River Tribe on 12/15/15.

The EA for the ADBPP is not adequate to address the suite of cultural and environmental impacts associated with a project of this nature and scale. Cumulative regional impacts to sensitive cultural resources and forests will occur as a result of the project. It is imperative that the environmental review process consider all regional impacts associated with the proposed project. The Pit River Tribe does not consider an EA adequate to address the scope and scale of impacts associated with this project and requests that an Environmental Impact Statement (EIS) be prepared.

The EA should be revised and project alternatives further developed to allow exploration of "alternative sites" in more detail. More in depth impact analysis is needed at the "alternative site location". Impact analysis maps should be prepared for cultural resources, flood plains, hydrology, wildlife, and spill modeling assessment.

The EA fails to adequately address:

- Full analysis of project alternatives that include impact analysis mapping for cultural resources, flood plains, hydrology, wildlife, and spill modeling assessment.
- Formal processes for organized negotiations with Pit River Tribe and the California SHPO to satisfy the Section 106 Consultation Process and National Historic Preservation for cultural, historical and archaeological resources.
- Tribal, state, and local permits or approvals required for the project.

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- Regional "assessment and quantification" of impacts to forests and cultural resources during forest materials extraction processes.
- Classification and transport of "Hazardous Fuels".
- Public Safety, Emergency Response Planning, coordination protocols and interagency agreements.
- Threatened and endangered species; impacts to wildlife, migratory birds, fish (including federal and state listed threatened and endangered species like the Goose Lake Red Band Trout, Modoc Sucker, Goose Lake Lamprey), and mammals such as beaver along the North Fork of the Pit River.
- Potential for contamination of waterways, hydrologic systems, wetlands and Waters of the United States.
- Mitigation strategies, and floodplain impacts.
- Overall large scale impacts to surface and groundwater resources if derailment spills of jet, diesel, naphtha, or other hazardous chemicals occurs.

We await your response to our request to enter into negotiations and action plan development for the (ADBPP). Please contact, Charles White, Tribal Administrator at (530) 335-5421 Ext: 1201.

Thank you,

/s/ Mickey Gemmill

Honorable Chairman, Mickey Gemmill JR.

2/4/16

Date: 02/04/16

MADESI

Red Rock (RR) Biofuels Facility – Draft Findings of No Significant Impact on

Sacred Burial Lands and Federally Listed Impaired Water Body of Thomas Creek, in Sacramento Valley River Basin Wetlands

Thankyou for the opportunity of commenting on the above proposals for 170,000 tonnes of bone-dry feedstock per yr, for a biomass gasifying incineration plant. We register our objections, on planning, environmental, socioeconomic and religious grounds. Part 3 indicates that there is no cultural agreement with indigenous peoples.

INCINERATION AND CLIMATE CHANGE

At 500 tonnes per day, 3500 tonnes per week, the tonnages actually equate to approximately 182000 tpannum. Biomass gasification is classified as an incineration process, under the European Waste Incineration Directive. Since October, 2015 the US Clean Power Plan does not see biomass as carbon favourable. Each state has to produce plans to reduce carbon, not increase it. The incomplete Environmental Assessment is site specific and as such, **does not address regional, national and international cumulative environmental and social impacts.**

There are a number of so-called 'solutions' which are being touted as 'cleantech' or 'green' and claimed to be saving us from disastrous climate change. Many of these rely on thermal treatment, that is **burning**, which always releases **carbon dioxide (CO2)** and other pollutants. Though claiming to be green, these claims are nearly always made **without full disclosure of GHGs (greenhouse gas) emissions.** The actual truth of the cumulative impacts of these disastrous developments is only just being recognised. **This plant alone will create up to 5 MILLION tonnes of CO2 over a 25yr lifespan.** This is not sustainable or green. **The gasifying incineration of 182000 tpa of biomass, will produce approximately 300,000 tpa of carbon dioxide, per year. (See CARBON IMPACTS below)** RR's claims of 25,000tpa CO2 are grossly underestimated. (**line 22-23 pg 28)** The loadout flare and gasifier flare CO2 emissions are thus also underestimated.**(Fig 2.3 pg23**) **This is low-carbon, or carbon neutral.**

In the recent **State of the Union** address by **President Obama**, he said that " **Look, if anybody still wants to dispute the science around climate change, have at it. You will be pretty lonely, because you'll be debating our military, most of America's business leaders, the majority of the American people, almost the entire scientific community, and 200 nations around the world who agree it's a problem and intend to solve it**" It appears that the developer does not agree with the President.

On 8 January 2013, President Obama also signed a Presidential Determination that biofuels should come from **renewable** feedstocks. However, the 'biofuel' that is to be produced will be a 50-50 blend with conventional fuels, **(line 17, pg 18**) The developer also refers to the use of household waste (MSW) which contains up to 80% fossil-fuel plastics. (**Line 3 pg 2, line 3 pg13)** In any case, biomass includes carbon-sequestering forests which are being destroyed, instead of conserved as carbon sinks. **Vitousek, Ehrlich et al** findings, as far back as 1986, found that, as a race, we are over-appropriating biomass on this planet and that **there is no further way to sustainably utilise biomass.**

Need for this process has also not been adequately demonstrated. Alternatives include electrical batteries, -these are not being investigated at all – and power deriving from wind, wave, solar, air and ground source. None of these are mentioned, despite this document being, supposedly, a **FONPA** (**Finding of No Practicable Alternative, final paragraph, pg x**)

The United Nations Climate Agency has reported that greenhouse gas levels, including carbon dioxide and methane, have hit record highs, meaning that water cycle, sea levels and extreme weather events will all be affected and worsened. The World Meteorological Organisation has stated that each year, carbon dioxide emissions are increasing, **not** reducing. In 2020 emissions are to be 8-12billion tonnes higher than the level agreed at the Copenhagen summit in 2010. National Geograhic has made a precise map of the world after the seas have risen, when all of the planet's ice has melted. See **nationalgeographic.com**. It is vital that additional sources of CO2 and other pollutants, are not built.

DEATHS BROUGHT FORWARD AND OTHER HEALTH IMPACTS

There are no figures for these and we include the relevant section from another biomass application regarding increased numbers of deaths. www.foe.co.uk/groups/derby/news/Human-Rights-Deaths-Brought-Forward-Causing-Waste-of-Energy-Incineration-

There are also no impact studies on effects on personnel at the incineration plant, which include DNA damage. Further information on www.sciencedirect.com/science/article/pii/S0304389409014563

Part 1 CARBON IMPACTS missing from the findings The incineration plant plans (classified as such under the UK/EU Waste Incineration Directive) wrongly imply that there is less than 25,000 metric tons of CO2 generated annually,(**line 22-23 pg 28)** stating that there is only the 'potential' to emit more than 25,000 GHG from the gasifying incineration of 182,000 tonnes of waste each year. (**lines 1-9, pg 36**) This is incorrect and not true as carbon dioxide emissions from biomass are approximately **EQUAL** to the tonnage of waste burned and can often be **DOUBLE**. http://www.rspb.org.uk/Images/biomass_report_tcm9-326672.pdf

Enclosed are the Michigan biomass plans, which detail CO2 emissions. http://www.saveamericasforests.org/Forests%20-%20Incinerators%20-%20Biomass/Documents/Carbon%20Emissions%20-%20Pollution/Fact%20sheet-Logging%20Forests%20Not%20Carbon%20Neutral.pdf
Further evidence of from a UK biomass incineration developer below, showing that for 160,000 tpa of biomass destroyed each year, that biomass incineration plant will produce 4.3 MILLION tonnes of CO2 over its 25 yr lifespan. https://t.co/FuVzKvSuyn

'Combusted with natural gas...” Pt 1 lines 13-14, pg 18. GHG impacts of this are missing.

Yet **lines 13-24 pg 28** state that '**disclosure of GHG emissions is not warranted unless the proposed action's direct annual emissions would be greater than 25.000 metric tons of CO2 (lines 21-23)** Red Rock will also be destroying a similar amount of 'waste' to the plants above. as such it will be defying the laws of physics to create less than 25,000 tpa CO2

Additionally, in May 2014, 61 U.S scientists wrote to the UK Government, warning against inadequate carbon accounting which ignored the major emissions associated with logging biodiverse forests in southern USA.

http://im.ft-static.com/content/images/0ee06ecc-d3ae-11e3-8d23-00144feabdc0.pdf

The GHG impacts of burning the resulting biofuel – 15.6 million gallons per year, BEFORE being blended with the equivalent amount of diesel, resulting in over 30 miilion gallons of final fuel, (final para, pg vii) - are also missing. Biodiesel also produces more nitrous oxide emissions – another GHG - than diesel fuel. This is not acknowledged. Yet these plans are supposed to include cumulative impacts.

Biogenic emissions are not accounted for, but should be included: *“***Note that CO2 emissions from biomass fuels are not included in the national total but are reported as an information item. Net emissions or removals of CO2 are estimated in the [Agriculture, Forestry and Other Land Use] sector and take account of these emissions.”2006 IPCC Guidelines for National Greenhouse Gas Inventories**

CARBON CAPTURE AND STORAGE

Carbon capture storage (CCS) also named carbon removal (**line 8 pg 32**) is not feasible or sustainable. http://www.biofuelwatch.org.uk/2015/beccs-report-pr/ and http://www.truth-out.org/news/item/33874-techno-optimism-and-bad-science-in-paris-the-problem-with-carbon capture-and-storage.The flagship CCS Kemper coal power station which is currently being built with government subsidies in Mississippi has seen its cost explode from $1.8bn to $6.4bn and counting. Biomass with CCS will be even costlier.

There is no cumulative estimate for the amount of CO2 to be 'removed' (pg 19 line 5) and the

emissions impact of CO2, from the flares, (pg 23, fig 2.3) which will operate 24hrs a day, are not included. It is also not made clear if the resulting ash from the process, is to be thermally treated again, ie burned, this being emitted from the 'loadout' flare. Again, this is a cumulative GHG impact which is not included. We believe that carbon particulate impacts are thus also underestimated.

BONE DRY FEEDSTOCK – The Fischer-Tropsch gasifying incineration method requires bone-dry feedstock. (**pg 18 line 4, pg 73 line 21**) Bone-dry feedstock requires dryers, to keep the feedstock dry, in the dry storage units. This will be quite difficult in a wetland area. **Lines 7-8, pg 19** states that 30,000 tonnes of woody biomass is to be stored, at any one time. This has to be kept bone-dry. Biomass storage references also at **line 1-2, pg 19, line 36 pg 52, line 1 pg 59, line 8, pg 80.** Dryers consume vast amounts of energy and produce CO2. They also make a lot of noise, and these effects are also missing from the section on Noise.**(3.7 pg 71)** Noise is thus underestimated.

TANK FARM AND GAS PIPELINE

Pg 18 line 29, pg 11 line 6 states that there is to be a tank farm and several other storage tanks. It is not made clear how many of these will contain diesel/liquid gas for gasifying incineration or be added to the biofuel. (**pg 13 line 25, 'access to natural gas'**) There is also no indication of how much gas is to be burned, adding to GHG cumulative impacts.

RR also refers to the syngas being **'blended with conventional petroleum product counterparts'** (**pg vii, penultimate paragraph)** Added to the biofuel, this does not meet AFRL's intention to reduce dependence on '**petroleum sources**' or '**crude oil derived fuels**' (**Background Purpose and Need pg vii)**

AGRICULTURAL, FOREST, UPLAND AND WETLAND RESOURCE IMPACTS

On January 22 2016, the Forestry Service rejected a gas pipeline through Montana national forests. Agricultural lands are equally important. We support the no-action alternative, which would safeguard **'agricultural land' (lines 9-14 pg 65) and 'farmland of statewide importance' (lines 20-21)** and soils from contamination. Preserving wetlands is also the basis of a film by the **Washington State Department of Ecology https://www.youtube.com/watch?v=BeUPbGWg2KU**

A briefing on the importance of wetland forests in the Southern US is at http://www.dogwoodalliance.org/wp-content/uploads/2016/02/Vanishing-Treasures-Brief-Wetland-Forests-Initiative.pdf

As weather systems become more unpredictable because of climate change, exacerbated rainfall will result in the need for uplands and wetlands to remain intact and well managed, in order to absorb increased rainfall. In the United Kingdom, upland and wetland management is fragmented and poor. This has resulted in increased flooding, particularly over the last few years, as rainfall has increased. The use of artificial fertiliser instead of compost has led to poor soil moisture retention (up to 30% less in UK soils) and increased run-off. Trees and vegetation were removed from the uplands and wetlands, meaning that there is less vegetationto absorb the increased rainfall and run-off has worsened. This in turn has led to faster flows, fewer flood warnings, and higher amounts of rainfall causing rivers to burst their banks, then flooding lowland areas. At the same time vital floodplain, washlands and wetlands in river valleys were built upon. Storms causing widespread damage recently, were Frank and Gertrude.

Insurance companies are increasingly refusing to insure business and properties in floodplain. The All Parliamentary Group on Forestry is to consider plans to plant millions of trees in the UK http://betterbynature.org.uk/appgf-putting-forestry-and-flooding-link-at-top-of-agenda/

FEEDSTOCK

Environmental Impacts of the Action, pg iv final pa in the Table "with the exception of forested areas, existing land use would not be permanently altered.." Surrounding trees and forests will be destroyed to make the feedstock. (pg 175, Pt 2) As described above, this will lead to increased flooding, worsening runoff, rivers bursting their banks and flooding of lowland

areas. Especially if biomass in the uplands is destroyed, in the incinerator. Further contamination of rivers will follow. There may be drought conditions endured in some years, but this will not be the norm, especially as rainfall worsens and it becomes harder to predict weather sytems. **Forest fires are not a good enough reason to burn biomass in a 'bonfire in a box' (Pt 2 pg 175 final box)**

Pg viii 'Primary operational feedstocks – woody biomass from local sources, to include but NOT LIMITED to, commercial lumber sawmill and forest by-products. There is no indication of the other unlimited local sources or secondary feedstocks. However Red Rock does state that household waste (MSW) can be burned. **'** Biomass comprised predominantly of organic fraction from MSW... ' (**Line 3, pg 13) The word 'predominantly' may be an admission that other waste resources will be burned.** MSW contains fossil-fuel plastics ie food packaging, bottles etc and hazardous waste eg mercury from low-energy lightbulbs. Methyl mercury pollution is already a problem in the Sacramento River Valley Basin http://www.sacriver.org/aboutwatershed/roadmap/sacramento-river-basin

Municipal solid waste (MSW) is not renewable (**line 2, pg 2**) as it contains fossil-fuel based plastics. These ' **predominantly organic fraction of MSW**' and '**various combinations of feedstocks**' (**line 3, 4, 15-16 pg 13)** will therefore create increased amounts of nitrogen dioxide and dioxin, as well as increased carbon dioxide. Despite admitting to other waste being burned in such processes, the emissions from burning such waste are not included in the application. **Biomass operators cannot make a highly calorific synfuel, or syngas, purely from the burning of biomass.** In the UK, several have therefore engineered 'waste' contracts which they induce local authorities to sign, to stifle reduction, reuse and recycling, so that people are forced to throw away more plastics, which are then wrongly burned, instead of being reduced, reused or recycled. Extracts of such a 'biomass' gasifying incineration contract are included here: http://tinyurl.com/opzh8ux – As with syngas, biofuel is thus mainly fossil-fuel based, and polluting. Biodiesel also has a lower energy content than diesel, up to 5000 kilojoules per litre, less than diesel. More info on biomass http://www.energyjustice.net/files/biomass/woodybiomass.pdf

http://eubioenergy.com/2015/12/17/dutch-scientists-have-something-to-say-about-biomass/

NITROGEN DIOXIDE, SULPHUR DIOXIDE AND DIOXIN POLLUTION

'Multiple stacks for venting air emissions' (**line 3 pg 19)** These are to be 100ft tall. It is claimed that there are no emissions of concern, (**line 20-21, pg 36**) yet the stacks are to be 100ft tall. Stacks are built that high so that pollutants can be dispersed over as wide an area as possible and 'diluted. **There is no indication of how many stacks are to be built.** (**line 35 pg 52, line 34 pg 58, line 7 pg 60, line 7 pg 80, Table 3.17 pg 87-88**) The location of these is not indicated on any of the plans. There are also no emission plumes with the application. **It is therefore not known how the residents and community of Lakeview will be affected.**

As **carbon dioxide GHG emissions will be greater than 25,000t, this also means that nitrogen dioxide emissions underestimated**. Enclosed are figures for nitrogen dioxide pollution from another similar biomass plant being built in the United Kingdom. The developers there, Resource Recovery Solutions, in association with Shanks and ENERGOS, have been selective with data on pollution emissions. Evidence here; - http://tinyurl.com/ohyxb5x and http://tinyurl.com/av3l7sp

Sulphur dioxide emissions are also underestimated. During temperature inversions, sulphur dioxide is converted to sulphuric acid, which will then be deposited on nearby buildings and vegetation. Plus arsenic emissions, in breathable form.

The release of dioxin is also not included. Dioxin is emitted from biomass and when coloured plastics are burned. There is no filtration system on this planet which will capture dioxin. Dioxin also reforms in the stack and this information is missing from the application . **Further information on dioxin from biomass incineration here http://www.saveamericasforests.org/Forests%20-%20Incinerators%20-%20Biomass/Documents/Briefing/Presentations/Dioxin%20Narrative.pdf and** http://tinyurl.com/lenelgd

The Tables in Appendix A, Pt 2 do not include operational emissions of the biomass gasifying incineration plant and flares, hence this Environmental Statement is incomplete.

WATER USAGE Hundreds of thousands of litres of water are needed to quench the ash and this impact is not fully described. Abstraction of such amounts is unsustainable and will impact on communities and agricultural usage. (**3.2. pg 37**) **Pg 37 lines 14-15** state that **100 gallons per minute** are to be taken for the process. The Anderson letter **(Pt 2, 4th para pg 174)** states that the waste stream **54 gallons per minute** are to be discharged. It is not clear what happens to the other **46 gallons per minute.**

ASH - SOLID WASTE QUANTITIES Information about ash tonnages is missing. The gasifying incineration of **500 tonnes of 'biomass' daily will give rise to much more than 350 tonnes of ash weekly.** Again, the laws of physics do not appear to be applied. The correct amount is closer to**. 2000 tonnes of ash per week ,** over a week, equating to approximately **100,000 tonnes of ash per year** This is not an 'insignificant' amount. Added to the fact that this will contain dioxin, from the burning of biomass and possibly, chlorinated plastics. **Line 27 pg 31** states that ash will be stored before loadout. Information on health risks to workers are not included. If the railway culvert is to be used to direct stormwater, (**line 3, pg 38**) there are no guarantees that wastewater, laden with ash, will not be diverted to this culvert, to then impact on Thomas Creek, during storms or by accidental release..

FLOOD RISK Both sites are within the Federal Emergency Management Agency (FEMA) designated Special Flood Hazard Areas, areas at HIGH RISK of flooding. As climate changes worsen, the chances of flooding increase from the 1 in 100 yr event. Indeed, the developer cannot give adequate forecasts for flooding, to the agency (**Part 2)** FEMA themselves give a 26% chance of flooding.

> The government may make future and continuing overall project risk and viability determinations based partially on, or completely independent of, the environmental impacts or merits documented herein. It is always possible that non-Federally funded development would result in similar development and environmental impacts to this site as documented.

More information http://www.energyjustice.net/content/study-thinning-forests-bioenergy-can-worsen-climate **'Sustainable biomass harvesting'** is claimed (Merjent letter, **pg 177**) There is no location map for this. The cumulative future impacts of destroying biomass, which is needed to combat climate change **AND** simultaneously producing more climate changing emissions, have not been investigated, at all. The full impacts of emitting massive amounts of carbon dioxide, in combination, ie the destruction of biomass **and** then burning it with gas plus cumulatively with other biomass developments in the USA, have not been calculated.

Contrary to the developer's assertions, (**FONSI para pg x**) we have shown that alternatives and cumulative future impacts have not been addressed.

We support the no-action alternative, which will lead to no adverse cumulative impacts, locally, regionally, nationally and internationally and ask that the Government rejects these plans.

Yours sincerely D Skrytek, Derby and South Derbyshire Friends of the Earth Co-ordinator

CC President Obama

THE EA DID NOT COMPLY WITH AIR FORCE GUIDANCE FOR NEPA DOCUMENTS REGARDING AIR QUALITY IMPACTS

The proposed Red Rock refinery will produce air pollution including fine particulate dust (PM 10 and PM 2.5) The vicinity is classified as "maintenance" for PM 10 and "sustainable" for PM 2.5,although violating PM 2.5 air quality standards Air Force has a Guide for assessing air quality impacts for its projects.

This means that the EA is required to scrutinize and quantify Red Rock's air emissions, both direct and indirect, and permitted and unpermitted, both at the project site and project related emissions at off site locations. The Air Force has published a Guide for evaluation of air emissions in NPEA documents like this EA. The Guide is:

AIR FORCE AIR QUALITY ENVIRONMENTAL IMPACT ANALYSIS PROCESS (EIAP) GUIDE (Hereinafter Guide) Prepared For: FRANK CASTANEDA, III, P.E., GS-14, DAF Air Quality Subject Matter Expert Air Force Civil Engineer Center, Compliance Technical Support Branch.

http://aqhelp.com/Documents/FINAL%20AF%20AQ%20EIAP%20Guide%20102314.pdf

The Guide explains the scope of the air quality rules for NEPA reviews of Air Force projects as follows:

> "The rule takes into account air pollution emissions associated with actions that are federally funded, licensed, permitted, or approved, and ensures emissions do not contribute to air quality degradation, thus preventing the achievement of state and federal air quality goals."

Red Rock is partly federally funded, the Guide applies. The Guide provided about 100 pages of instructions for evaluation of air emissions under NEPA.

The EA did not comply with the Guide's instructions on the need for studies to evaluate large scale Greenhouse Gas emissions, and how to provide indirect emissions calculations, among other errors.

THE EA INACCURATELY DESCRIBED THE PROJECT'S GREENHOUSE GAS EMISSIONS AND DID NOT ASSESS THAT IMPACT ACCORDING TO GUIDANCE

5.7 Greenhouse Gas (GHG) Assessment

The Guide states:

• If a proposed action is projected to cause direct emissions of 25,000 metric tons or more of CO-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a Level III, Advanced Air Quality Assessment, is needed. (Sutley 2010)

The EA did not provide a Level III, Advanced Air Quality Assessment. The EA claimed at p. 36 that Red Rock's GHG emissions would not exceed 25,000 t/y.

However the DEQ Air Contaminant Discharge Permit Review Report (hereinafter DEQ Report) at p. 10 shows that Red Rock's annual GHG emissions would exceed 272,000 t/y

The Project will operate an amine scrubber that will essentially strip CO2 from the process gasses, and then will vent the CO2 without any control devices, into the air. Full disclosure to reviewers of the actual annual CO2 emissions tonnages would have provided opportunities for reviewers to suggest mitigation of this uncontrolled CO2 venting which should have, but didn't triggers an advanced air quality review.

SUMMARY

The EA failed to identify to reviewers the project's actual GHG emissions. The EA did not comply with the Guide's instructions to prepare an advanced air quality assessment for a major GHG emissions source.

THE EA CONTAINS MISLEADING AND INCOMPLETE INFORMATION ON THE PROJECT AREA'S AIR POLLUTION

The EA asserts at page 30 (Table 3.3) that concentrations of fine dust (PM 2.5) in Lakeview's air were 33.7 micrograms per cubic meter as a 24-hour average, and therefore met the standard of 35 ug/M3.

However the EA cherry-picked air pollution data from up to six years ago; the period 2010-2012; to produce this result. The EA ignored more recent air pollution results and failed to inform reviewers that The EA's Table 3.3 contained stale, inaccurate data.

The EA, by presenting only an averaged figure for those three years, also failed to alert reviewers that in 2011 and 2012, Lakeview's PM 2.5 pollution levels actually exceeded the Air Quality Standards, and has been worsening since 2010

In addition, the more current time period, which the EA failed to provide, shows that Lakeview's PM 2.5 concentrations continues to exceed the Air Quality Standards. In 2013, a year the EA left out, Lakeview had the 5th worst PM 2.5 pollution in the entire country, as a 24-hour average.

In other words, the EA misleads reviewers by asserting that baseline measures of PM 2.5 concentrations are 33.7 ug/M3 (going back to six years ago), and the project area complies with Air Quality Standards.

Lakeview's actual, more recent PM 2.5 pollution in 2013 is far more than the Standard and reached levels of 94 ug/M3, almost triple the concentrations claimed in Table 3.3.

Likewise, in 2004, Lakeview's PM 2.5 (24 hr.) concentrations reached 47 ug/M3, almost 30% higher than the 33.7 claim in the EA. The EA failed to present any air quality data for either 2013 or 2014 and did not inform reviewers of these exceedances.

THE EA DID NOT ACCURATELY DESCRIBE THE AREA'S CLASSIFICATION AND THE ONGOING AIR QALITY EXCEEDANCES

The Oregon DEQ review of Red Rock's air pollution noted that, "…the source is located in an area that has exceeded US Environmental Protection Agency (EPA) standards for PM2.5." The EA is a flawed and inaccurate document because it did not disclose these exceedances to reviewers, even though DEQ admits to the violations. As a NEPA document, the EA is legally responsible for imparting, not obscuring information to reviewers, according to 40 CFR Part 1500.1 (b).

The EA also inaccurately stated the project area was "unclassifiable" for PM 2.5. This is not true. The DEQ stated in its Review Report that Lake County is deemed "sustainable" for PM 2.5, not Unclassifiable, despite its long record of exceedances of the PM 2.5 standard.

THE EA DID NOT PROVIDE COMPREHENSIVE INDIRECT EMISSIONS CALCULATIONS

The Guide at page 24 asks preparers;

4.2.1 (b). Are both direct and indirect emissions accounted for? (Emphasis in original) It is important to define the action in relation to all potential sources of air emissions. NEPA and General Conformity both require consideration of both "direct" and "indirect" emissions, some of which might not be subject to air permitting procedures. Both "direct" and "indirect" emissions are caused by or initiated by the Federal action…

AND

"Direct emissions" occur at the same time and place as the action. "Indirect emissions" are reasonably foreseeable emissions that may occur later in time and/or farther removed from the action.

The Red Rock project will generate considerable indirect emissions, including but not limited to tailpipe emissions from the 65 daily woodwaste delivery truck round trips, the 20-odd tanker truck fuel pick-ups, the railroad engines' emissions from train pickups of fuels, the 45 workers' commuter traffic to and from the site, the dust from all of these vehicles driving on unpaved areas on the plant site, and the dust from all or most of these vehicles driving on the unpaved mile portion of Kadrmas Road and other unpaved roads and areas in and near the project site. Red Rock's contracted logging operations will also generate considerable indirect emissions.

THE EA INACCURATELY DESCRIBES THE RESULTING TRUCK TRAFFIC VOLUMES AND FAILS TO CALCULATE THESE TRUCK-RELATED AND OTHER INDIRECT EMISSIONS.

The Ea asserts at p. 20 there will only be 40-50 trucks per day delivering woody biomass to the refinery. This figure is significantly (20-30%) below DEQ's estimate of 65 potential truck traffic trips (Red Rock Air Permit Review at p. 5.)

The EA also fails to disclose there could be as many as twenty fuel tanker trucks leaving and arriving daily. The DEQ permit review states that tanker trucks will haul fuels away from the facility. The facility has obtained a permit to build and operate a dock for loading fuel into tanker trucks (EU27).

The EA I says the Refinery will process 170,000 tons/year of biomass. However the DEQ Review stated at p. 5 that Red Rock will process over 330,000 ton/year of materials, mostly from logging operations.

In summary, the EA has underestimated and neglected to discuss the impacts of the project's increases in logging, tanker, and other heavy truck and rail traffic.

POTENTIAL ON-AND-NEAR SITE INDIRECT EMISSIONS FROM TRUCK TRAFFIC

Red Rock's application for a rezoning to Lake County, at Figure 1, showed that the incoming wood dump site will be about 1600 feet from the plant entrance. This means that the 65 trucks bringing in wood waste daily will execute a 3200 foot round trip on the property on unpaved roads.

. Tanker truck trips, each hauling away 5500 gallons of the produced liquid fuels, could generate another 26 truck trips/day (13 in and 13 out) daily. There are another 90 vehicle trips daily by the 45 site workers arriving and leaving, and additional vehicle trips by vendors, suppliers, and similar support activities.

The Maricopa County Inventory Help Sheet shows a factor of 2.13 lb/VMT of PM-10 for heavy-duty vehicles travelling at 10 mph on unpaved roads.

http://www.maricopa.gov/aq/divisions/planning_analysis/docs/instructions/vmt.pdf

LOGGING OPERATIONS EMISSIONS

Red Rock's woodwaste suppliers will also produce considerable emissions from their logging operations on public and private lands. Logging operations often utilize unpaved roads in and near the logged forest and those will be PM emissions sources, along with on-site internal combustion engines for logging equipment such as saws and compressors.

The Air Force has some jurisdiction over the biofuel gathering activities because, as listed on p. 2 of the EA, the biofuel supplies must meet at least 3 Air Force and regulatory criteria.

The EA is deficient for not discussing, much less calculating the air quality and other impacts from Red Rock's lumber supply operations. That lumber supply activity would not occur but for Red Rock's demand for over 330,000 tons of biomass every year; an amount that would exceed the fuel needs of a 25 megawatt wood fired power plant.

The EA only included a small fraction of these indirect emissions; it showed some of the fugitive dust generated by truck traffic at the Red Rock site. The EA's estimate of less than 1 ton/year of indirect emissions from truck traffic in Table 3.5 and 3.6 is not accurate and is far too low. Part of the problem is the EA's failure to consider the predicted volumes of truck trips and fuel gathering activities needed to support the Red Rock refinery.

THE EA FAILS TO EVALUATE LOCOMOTIVE EMISSIONS

The Lake County Railroad uses aged rolling stock, for instance LCR 1761, a 1500 hp diesel engine locomotive built in 1954 that is exempt from pollution controls. During times when one or more of these types of locomotives are hauling within Lake County, or are on the plant site, switching cars or waiting for its tanker cars to be filled, they will be emitting measurable amounts of diesel particulate, a known carcinogen, and PM-10, a pollutant for which this area only recently reached "maintenance" status.

RAIL SPUR CONSTRUCTION NOT MENTIONED

The addition of a rail spur to service the Red Rock facility will also require new construction activity; which is an impact not apparently considered by the EA, and which would produce addition particulate emissions from surface disturbance activities.

The EA also lacks estimates of worst-case emissions in all instances, although the Guide states those Emissions "must be calculated." The EA does provide emissions figures that assume the facility will comply with its permit conditions, but that is not a "worse case" emissions estimate.

The EA also fails to describe the facility's 12.66 ton /year of hazardous air pollutants (HAP) and the likelihood of a worse case emissions of HAPs.

Here are the Guide's instructions for emissions calculations.

3.5.1Worst Case Emissions

The greatest annual (calendar year) emissions for each pollutant of concern form the basis of the analysis. Emissions must be calculated from the start of the action annually until the direct and indirect emissions have been shown to have reached steady state (i.e., no increase or decrease from the previous year).

CONCLUSION

The Red Rock refinery will cause and contribute to additional violations of the PM 2.5 Air Quality Standards. The EA failed to follow the instructions in the Guide for evaluating GHG emissions. The EA fails to calculate the direct and indirect, and worst case emissions, from the full scope of the refinery's operations. The EA underestimated the project's emissions and contained many errors and omissions, including the volume of GHG emissions, truck and vehicle traffic, rail spur construction, indirect emissions and locomotive emissions.

The EA's failure to identify the serious and adverse impacts from the refinery's emissions of pollutants that already exceed Standards, and its gross mis statement of the amount of GHG emissions, should prompt rejection of the EA and preparation of an EIS.

February 5, 2016

Mr. James Neely
AFRL/RXME
Building 653, Rm 215
WPAFB, Ohio 45433

RE: Red Rock Biofuels, LLC EA (2/5/16) Comments

Dear Mr. Neely:

I respectfully submit comments to the DoD DPA Title III Red Rock Biofuels, LLC's (Red Rock) proposed Finding of No Significant Impact to construct and operate a new biofuels facility and associated infrastructure in Lakeview, Oregon. The comments are currently due on February 5, 2016.

As you know I, along with other individuals, interest groups, and native nations have requested a 30-day extension to the public comment period given the complexity of the proposed action/decision. This was summarily denied as a possible indication of the project being fast tracked. I renew my request for a 30-day public comment extension.

Regardless, I offer the following comments that demonstrate an Environmental Impact Statement must be developed for proposed Red Rock Biofuels project. The site specific scope of the Environmental Assessment is just not appropriate for a project that has unaddressed far reaching regional and interstate social, environmental, and cultural impacts.

Sincerely,

Chris Zinda
448 S 3430 E
New Harmony, Utah 84757
435-704-1334

Public Comments, Chris Zinda, Red Rock Biofuels, LLC DoD, DPA Title III, Environmental Assessment/FONSI, February 5, 2016

The EA does not address significant regional impacts

The EA is unduly limited in scope, as it only addresses site specific impacts. The are significant regional environmental, cultural and social impacts to the proposed project that EA fails to address.

The regional impacts and the decision to limit the scope of the EA by the DoD and Red Rock unfairly fastracks the process that is already behind as a result of the proponent's own slow permitting and consultation schedule, now impatiently attempting to limit the scope, range of impacts and resultant important public discussion regarding mitigation measures.

One obvious regional impact area to area forests. Other than mentioning an agreement with Collins Corporation, the EA does not address the fact that there is no data provided to suggest Collin's can provide the inputs required by Red Rock. Surely Red Rock has developed this data along with their own private forest supply assessment.

I also know that Red Rock had discussions with Fremont-Winema NF, Modoc NF, Lakeview BLM, and Alturas BLM over forest biomass availability and supply streams. The EA fails to not only provide proof of consultation with these federal entities so that they may provide comment but their participation in the needs of the project critical to its justification and success.

The EA does not fully develop Alternative Site Location

There are three alternatives present in the EA: The Preferred, The Null, and Alternate Site. Beyond identifying an alternative site location, the EA fails to provide any project details or impacts for the Alternate Site option.

There is no floodplain assessment, no cultural resources inventory, no inventory for flora or fauna, no project building/rail plans developed and transposed for the Alternate Site option. Simply, there is nothing provided in the EA for the public to assess project site impacts, mitigation measures, costs and benefits when comparing Alternate Site to the Preferred. It is just mentioned as an alternative real estate location and nothing more, an alternative without weight.

The project site is located in a floodplain

The EA indicates the project site, along with a good portion of the railway to market, is within the 100 year floodplain. There are no mitigation measures provided in the EA that adequately address environmental and public protection incase of that 100 year event occurring. There is no discussion of the threat to both the human and natural environment, discussion of pre-planning mitigation measures for what will be an eventuality.

No Forest Supply Assessment

There is no indication in the EA or appendices that the DoD or project proponents consulted with any federal or state land management agency during its development. I know for a fact his occurred on multiple occasions.

The project requires a great deal of forest biomass over its lifespan and would not be built without an assurance that the supply would be available and constant. This supply cannot possibly be met though Red Rock's association with the Collins sawmill alone. An Oregon company, Collins is heavily invested in biomass, involved in several projects including a large facility in Chester, CA and another currently being proposed Humboldt County. It requires resources from federal lands to be viable.

The project borders three states. Using a 75 mile radius, the Fremont-Winema in Oregon and Modoc National Forest in California are at risk. As are the Hart Mountain-Sheldon National Antelope Refuges in Oregon/Nevada and the Modoc National Wildlife Refuge in California. There are also three large BLM districts in three states. The flora and fauna - many of which are federally or OR/CA/NV state listed was sensitive, threatened or endangered - are impacted by the gathering processes of forest biomass.

This complicates things, as each department, bureau, region and state has their own policies and initiatives, their own legal mandates, and all too often they are incongruent with regional land use planning and coordinated response to proposed projects. This project has immense regional forest and land use implications.

Since the project will require forest biomass from federal lands, it is incumbent upon the federal lands management agencies work cooperatively and create a stand alone forest supply assessment for the 20 year lifespan this project. At a minimum, DoD/Red Rock

needs to release their own private supply assessment that must have been developed for the project.

EPA Clean Air Act Consultation

The EA fails to show any consultation with the US EPA concerning Lakeview, Oregon's continuing issues with Clean Air Act PM2.5 NAAQS attainment. The EA fails to address the project's emissions exacerbating an existing problem and pronment's role in providing mitigation measures to ensure future compliance.

One hundred miles from nowhere, Lakeview has some of the worst fine particulate / PM2.5 pollution in the nation - a nasty air pollutant the lodges deep in the lungs and causes long term and debilitating damage, especially for the elderly. Over the years, EPA has strengthened the National Ambient Air Quality Standards for particulate matter due to the abundance of scientific literature regarding the negative health effects of PM exposure and its costs to society.

Environmental groups petitioned the EPA to redesignate Lakeview as nonattainment under the Clean Air Act and denied it just before the release of the environmental assessment. The rejection was based on a voluntary quid pro quo program that has not received formal rulemaking called "Advance," the result being people in the community are fined for burning in their woodstoves while Red Rock is allowed to pollute without Best Available Control Technology on their refinery stacks, along with a watering down of the Congressional intent of the Clean Air Act.

Citizens shouldn't be fined while DoD backed businesses are allowed to pollute. EPA must not be allowed to negate Congressional "rigidity" of the Clean Air Act through an internal program created without formal rulemaking that has the potential to affect all National Ambient Air Quality constituents - and by extension the communities that rely on "non-attainment" designations to protect citizens and the larger environment from the greed of corporations.

Rail and emergency services

There is no discussion of emergency services, either at the project site or transportation to market.

Emergency, water and sewer services for the project will be born by the citizens of Lakeview and project proponents will be given 15 years of local tax credits. There is no

Emergency Response Plan to respond a catastrophic event at the biofuels facility that would require an evacuation of 2,500 people or for a potential derailment along the railway that includes the XL Pit and nearby town of Alturas, California (pop. 2800).

There is no indication in the EA there was consultation with the Federal Rail Administration, Oregon Rail Administration or permitting authorities in either Oregon or California. A discussion of rail permitting status - which is Excepted Speed Limited - along with potential mitigation measures should derailments occur is also missing.

The railway runs along the floodplain of both Goose Lake and the North Fork of the Pit River. As such, the EA has neglected to address the potential impacts to not only environmental resources but the very viability of the lands of the people who reside along these tracks and watercourses.

For example, there is no discussion of the impacts of a derailment in the already derailment prone Canyon of the North Fork of the Pit River upstream from the XL Reservation. Should any catastrophic derailment and spill occur in this area, the long viability of the XL Pit and their agricultural lands that border the river would be in serious peril.

Lack of compliance with 106

There are no formal agreements between the DoD, Project proponent, and the Oregon and California State Historic Preservation Offices with the Klamath, Pit, Burn Paiute, or Ft. Bidwell Paiute. The only agreement in place is one with the Oregon SHPO, signed by a deputy director one week prior to the release of the project EA.

While the administrative record demonstrates consultation, the consultation appears to have occurred late in the process, did not initially include the Pit River Tribe, and did not address the potential for cultural resources on the Alternative site location.

The DoD and Red Rock met with the Pit River people who reside in California and have ancestral claims to the region. The consultation did not include the California State Historic Preservation Office. While the DoD and Red Rock have an agreement with the Oregon SHPO it never attempted to contact much less reach any agreement that included the California SHPO. This is a serious procedural oversight of which I believe the Pit people have addressed in their comments to this proposal.

Forest clearing activities will impact regional cultural resources and provides yet another reason why a forest supply assessment needs to be developed or that developed by Red Rock released.

The proposed facility site contains hundreds of cultural artifacts dating back thousands of years, including the very high potential of human remains. Red Rock and the State Historic Preservation Office of Oregon have an agreement, saying all artifacts are the property of the owner. Neither the State nor Red Rock have agreements with the Klamath, Paiute and Pit peoples who, after consultation, oppose the project.

It is morally wrong that indigenous peoples ancestral lands are proposed to be pillaged once again and against their will. Through forest clearing and site development, a systematic looting of their cultural resources is about to begin.

These peoples have a right to the possessions and remains of their ancestors. They have a right to reject bomb trains at their front doors, and to ensure emergency response plans are in place to respond to physical and environmental threats to their safety and future viability.

Bait and Switch

There is economic and political institutional inertia at work, the project a culmination of over a decade of efforts by local political and economic interests, supported some of the Oregon Congressional delegation including the powerful players of Greg Walden, Ron Wyden, and Jeff Merkley. The issues here are jobs and getting natural gas into Lakeview.

Even though the EPA in its release of the Clean Power Plan did not look favorably upon biomass derived energy as carbon neutral, it allowed states to grant exemptions to biomass energy as part of their individual Carbon Plans that must be submitted to EPA. This process is underway and the Red Rock project should be subject to Carbon Plan scrutiny.

The project is a bait and switch, the project justified as "renewable" with federal subsidies from the DoD. Red Rock presented an option to Oregon DEQ that is not included in the EA for an option to create biofuels from natural gas in cases of biomass supply distribution. In effect, Red Rock will be able to create a fuel product from fossil fuels that is neither renewable or carbon friendly - no longer meeting the national objectives of reducing global carbon emissions.

Red Rock wants natural gas to drive their processes. They intend to use natural gas to heat a vessel containing forest biomass that is closed to the atmosphere and heated, the resulting gasses captured and refined into biofuels. They can also use natural gas to heat a vessel of natural gas to refine into fossil fuels in the case of supply disruptions, which means biomass feedstock.

Here we have a potential bait and switch, where subsidies gained under a now outdated biomass carbon neutrality ruse result in switching entirely to producing fuels from fossil based inputs. Although Oregon DEQ did require an analysis of the option, there is no mention of it in the DoD EA much less a model and discussion of the entire carbon cycle.

Without a Forest Supply Assessment, we cannot possibly know feedstock anticipated supply or disruption. By relying on individual agency NEPA sale or treatment documents instead of a formal supply assessment to provide feedstock, we absolutely know that disruptions are likely to occur based on litigation alone.

There is a potential for a bait and switch to natural gas to supply Red Rock's feedstock and the public has a right to know how this affects long term carbon reduction goals. The EPA did not go far enough with the CPP regarding biomass energy and its negative carbon footprint and bowed to timber state politicians bringing home bacon. The bait and switch to an unending carbon supply of natural gas to create fossil fuels is unacceptable and needs equation. DoD through this environmental assessment should oblige the planet and provide that analysis.

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Re: Red Rock Biofuels EA

Air Quality:

1. **Chapter 3, page 36, lines 6-9:** The project will be over the 25,000 metric tons per year. The review report from the Oregon DEQ for 'Standard Air Containment Discharge Permit" states the project will be over that 25,000 metric tons per year, in fact it will be 272,719 tons per year. I believe the project has a responsibility to do an EIS not a FONSI. CEQ, 2014 as you know is guidance for all federally proposed actions that involve Climate change and GHG. As stated in CEQ, 2014 " project should consider the extent to which a proposed action and its reasonable alternatives contribute to climate change through GHG emissions and take into account the ways in which a changing climate over the life of the proposed project may alter the overall environmental implications of such actions." Because according to CEQ, 2014, "Climate change can increase the vulnerability of a resource, ecosystem, human community, or structure, which would then be more susceptible to climate change and other effects and result in a proposed action's effects being more environmentally damaging."

   DEQ permit is for using wood waste for the biofuels plant. But on many occasions and on video staff at Red Rock Biofuels have said they have no contracts with the Forest Service to date and they will be using just gas from the pipe line. The projects DEQ permitted from the State of

Oregon is not for gas, just wood waste. This is the "Bait and Switch" concept that Red Rock Biofuels has deceived the People of Lake County.

2. **Chapter Two, page 20, lines 9-10:** There have been no analyses of this. I have lived here in Lake County and worked for the US Forest Service. My duties at the Forest Service entailed tree marking, mapping of "Old Growth Timber" and Roadless Areas and mapping and monitoring plantations. Red Rock Biofuels cannot achieve that amount of truck loads without doing damage to our National forest. We, Our Public Lands cannot support this and if you think it can then do an EIS. This EA does not do any analyzes at all with this aspect of the project. On the Fremont Winema Forest web site they have about two projects that entail fuel reduction, starting in 2017. Again another "Bait and Switch".
3. **Chapter 3, page 59 lines 20-23:** In a letter to the Environmental Quality Commission from the Town of Lakeview and County Commissioners says; "We did discuss expanding the area to a larger boundary but decided not to create a larger boundary because the existing zoning requirements would not allow large industry to locate outside the urban growth boundary as an outright use. Additionally, any sources that might locate outside the urban growth boundary would likely not have a significant impact of particulate matter at the monitor." So, if you stayed out of the UGB and in the County the project would likely not have a significant impact but that is not what you want to do. The projects application to the Town and County for entrance into the UGB you will now impact our air quality. When you submitted your application to Oregon DEQ the project was out of the UGB and now the project wants in to the UGB. This should require another permit or an updated one.

I have lived here for close to 40 years now and have never seen a project so flawed and misleading the public. All the agencies that should protect our resources and the public's wellbeing have turned the other way on this project. This project affects me personally. I heat and cook with wood. I have been threaten with fines and told that I have to stop using wood. There are about 200 more people that are sole source wood and we are all told we have to stop heating and cooking with wood so we can offset Red Rock Biofuels.

In closing this project needs to do an EIS and stop lying to the public in what really is going to be the real project, do the necessary analyses and update permits to reflect a gas operation not biofuels.

Sincerely,

Sarah Bunten

5 Fed 2016

TO: James Neely or Warren Assink at AFRL/RXME, Building 653, Rm 215, WPAFB Ohio 45433, submitted via james.neely@us.af.mil and warren.assink@us.af.mil

Subject: Red Rock Biofuels EA — comments

Dear Messrs. James Neely and Warren Assink:

Please accept the following comments from Oregon Wild (address below) and Oregon Natural Desert Association (50 SW Bond St, Bend, OR 97702, (541) 330-2638, jeremy@onda.org, https://onda.org/) concerning the Red Rock Biofuels EA, http://www.wpafb.af.mil/afrl/rx/. Oregon Wild represents over 15,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife, and water as an enduring legacy. Our goal is to protect areas that remain intact while striving to restore areas that have been degraded. Oregon Natural Desert Association (ONDA) is an organization of more than 4,500 members and supporters whose mission is to protect, defend and restore Oregon's high desert. Our dream is to see millions of acres of beautiful and ecologically vital public lands permanently protected and home to diverse populations of wildlife.

The proposed action: Using federal funds provided by the United States Air Force, Air Force Research Laboratory, Red Rock Biofuels LLC (Red Rock) proposes to construct a new biofuels facility and associated infrastructure near Lakeview, Oregon. The integrated biofuel enterprise would use woody biomass feedstock consisting primarily of mill and forest residues to produce jet fuel, diesel fuel, and naphtha. The plant would gasify approximately 170,000 bone dry tons/year (500 bone dry tons/day) of biomass feedstock collected from "Southern Lake County" to produce approximately 7.2 MMgal/yr of jet fuel, 7.2 MMgal/yr of diesel fuel, and 3.6 MMgal/yr of naphtha. The proposed biofuel processing facility would occupy approximate 54-acre in the lower Thomas Creek watershed and the Goose Lake floodplain. There is potential for adverse effects to historical and cultural resources.

It does not appear that the EA addresses the relevant and significant issues that Oregon Wild raised in its March 30, 2015 scoping letter. The EA failed to properly identify the scope of project impacts and the scope of analysis. The two most significant unaddressed issues are (1)

the adverse habitat impacts of collecting 500 ton/day of vegetation feedstock, and (2) the adverse climate impacts of transferring carbon from the forest to the atmosphere. This project may have significant impacts on the human environment (e.g., air quality, floodplain, forest habitat degradation, etc.) and therefore must be analyzed in an EIS.

The EA needs to describe the environmental effects of collecting raw material to supply the biofuel enterprise.

The EA says that the RedRock biofuel enterprise will rely on "woody biomass from local sources, to include but not limited to, commercial lumber sawmill and forest by-products…" Supplying this facility with 500 bone dry tons/day of woody biomass will have a significant impact on thousands of acres of vegetation and habitat per year in the surrounding area. But the EA limits is discussion of impacts to vegetation and wildlife to construction impacts on the relatively small footprint of the biofuel refinery. Our scoping comments highlighted the need for a broader scope of analysis. EA (p 50) says "Vegetation at the site options is largely comprised of grassland. … The primary direct impact from construction would be the cutting, clearing, and removal of existing vegetation within the construction workspace for the facility, the rail spur, and the pipeline lateral. … Most wildlife species that occur within the proposed project area are adapted to living in disturbed areas and co-existing with human activity." This is a grossly inadequate analysis of the impacts of this project on vegetation and wildlife habitat.

The RedRock Biofuels Project is creating a new and significant demand for woody biomass. The EA does not clearly disclose where this material will come from nor does it describe the effects of biomass removal from the forest. The local supply of biomass is not likely sufficient to supply the project on a sustainable basis. In 2015, the Fremont-Winema National Forest produced only 38,576 "green" tons of biomass. (USFS Timber Information Manager (TIM) database, Performance Accountability System, biomass accomplishment code (BIO-NRG)). Much of this biomass was produced outside of "Southern Lake County" which is the identified working circle for this project. In 2014, only 17,492 "green" tons of biomass were produced on BLM lands throughout the entire state of Oregon. (Oregon BLM 2014 Fact Book, http://www.blm.gov/or/onlineservices/files/2014_BLM_Facts.pdf). Only a small fraction of that biomass was produced in Southern Lake County. Also, these biomass estimates need to be adjusted for water content. The federal forest agencies are reporting biomass production accomplishments in "green" tons, while RedRock has specified their biomass requirements in "bone dry" tons. Green biomass is about 30-50% water by weight. From this data and information it is clear that this project will not merely step into an existing market for biomass that can easily meet the needs of the RedRock biofuel project, rather this project will create a new market for biomass (or greatly expand the relatively small existing local supply of biomass) in Southern Lake County. This means that as a result of this project, woody material that

currently stays in the forest will be removed and delivered to RedRock. The impacts of this woody habitat removal must be disclosed in the EA.

The Air Force cannot avoid the mandatory requirement to consider the effects of biomass collection on forest ecosystems. According to the CEQ regulation which are applicable to all federal agencies, the scope of NEPA analyses must include "(1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements. (ii) **Cannot or will not proceed unless other actions are taken previously or simultaneously**. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification." (40 CFR 1508.25) Clearly, biomass raw material will not be supplied to this biofuel refinery unless and until logging (and possibly milling) occurs to produce the woody waste material or by-product.

Oregon Wild recognizes that there is a potential for biomass collection to provide restoration benefits. We have supported the concept of biomass utilization when it is a by-product legitimate ecological restoration, such as removal of small fuels from stands suffering from fire exclusion. However, proponents of biomass utilization do not appear to share our view that biomass utilization be limited to situations where there are clear ecological benefits. Biomass proponents are trying to commercialize biomass utilization that is a by-product of all forest activities, not just those that are beneficial, this means that biomass utilization creates incentives for harmful activities like clearcutting, road building, commercial removal of large old trees, etc. While ecological benefits are possible, the applicant and the EA fail to demonstrate those benefits or provide assurances that adverse effects will be avoided/mitigated. Importantly, this EA for the RedRock Biofuels Project fails to say how much of the feedstock might come from legitimate restoration efforts, and how much will come from harmful logging practices.

The ultimate source of the raw material of ecosystems that support clean water, habitat for fish & wildlife, carbon storage, recreation, and quality of life. Removing the biomass from these native ecosystems comes with significant trade-offs including , degraded soil, degraded habitat, GHG emissions, polluted water, degraded recreation and scenic values, etc. These impacts need to be fully disclosed in the EA.

Forests in south-central Oregon tend to be dry and exhibit low productivity. Restoration requires only light thinning and removal of surface and ladder fuels. There is not very much vegetation on each acre to begin with and not much needs to be removed, so it is highly inefficient to collect forest residuals in this setting. The Northwest Advance Renewables Alliance (NARA, https://nararenewables.org/) is also developing aviation fuel, and they are focusing on areas with a much higher density of forest residuals per acre, such as slash piles from industry forestry as practices in the high productivity Douglas fir forests of western Oregon. The figures below show

that Lake County is not a good place to look for biomass. The EA needs to develop an alternative that relies on more economical and more sustainable sources of raw material.

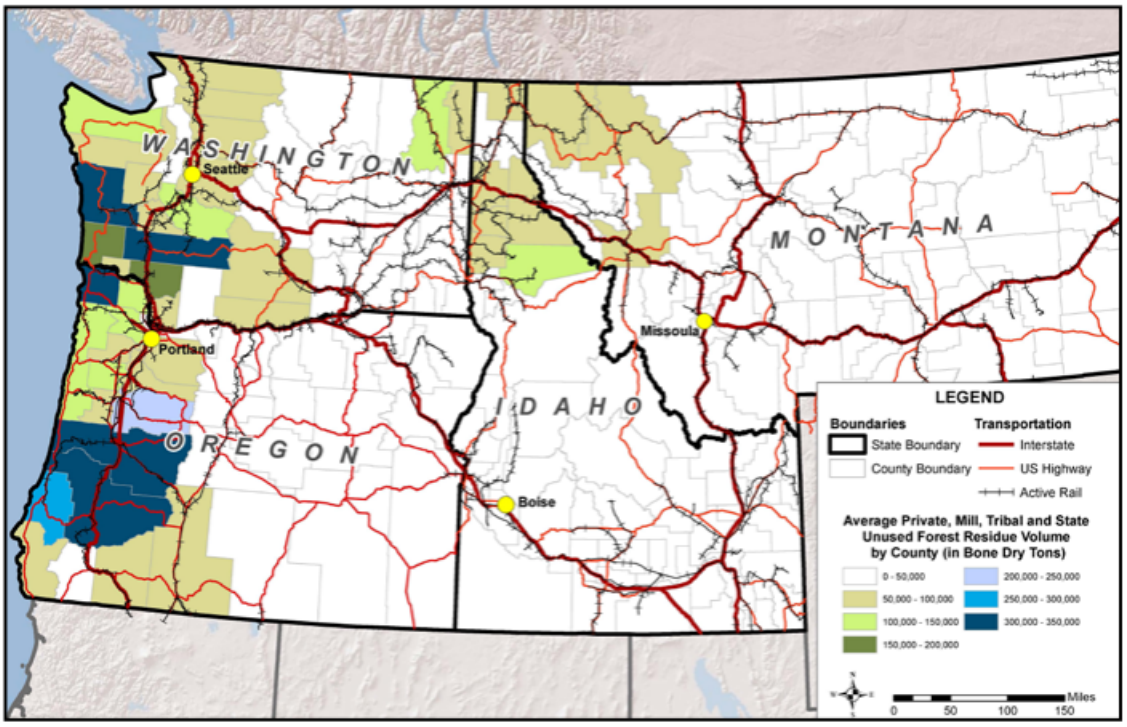


Figure 2.1.1. NARA Pacific Northwest Study Area

https://nararenewables.org/pacificnorthwest/docs/Vol2-SiteDesign.pdf

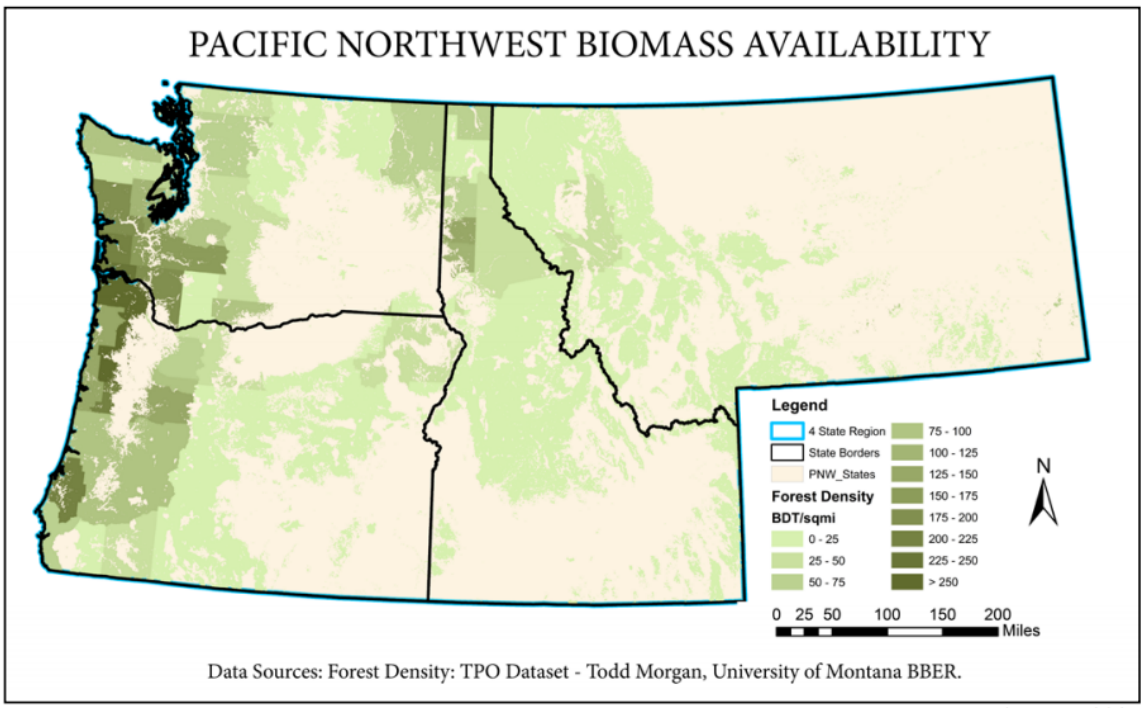


Figure 1.2.1. PNW biomass availability

https://nararenewables.org/pacificnorthwest/docs/Vol1-Profile.pdf

"Residues" are connected to harmful logging activities. The supply of biomass residuals is most often coupled with other economic activities (e.g. logging, roads, fire suppression) which may be counter to ecological restoration objectives. The EA should fully disclose the adverse ecological effects of the activities connected to production of biomass residuals.

There is not a lot of wood going to waste around Lakeview. There are well-developed markets for all wood (and wood-byproducts, such as chips) produced in the area. Trees growing and dying in the forest are used as homes for wildlife and serve a wide variety of ecological functions. See Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GISdata/docs/chapter24.pdf

There is not a big biomass supply around Lakeview. The forests here are not high productivity forests. There are large unforested (desert and ranchland) areas surrounding Lakeview, and the trees here grow relatively far apart which increases the cost of collection. Most efforts to inventory biomass supply in the Pacific northwest, identify areas dominated by moist, high productivity, private-industrial forests as the best places to locate businesses seeking biomass.

Areas with a lot of public land are not good places to look for biomass, because the trees on public lands are valued more for habitat, watershed protection, carbon storage, scenic and recreational values, and quality of life. Biomass extraction on public land will be controversial unless it is exclusively a by-product of valid ecological restoration. Unfortunately, too often, alleged restoration projects end up removing too much habitat structure and causing more harm than good;

Juniper is a native species that provides habitat for native species and helps store carbon. Juniper is increasing due to fire suppression, increased grazing, and CO2 enrichment in the atmosphere that allows juniper to use water more efficiently and become more drought tolerant. There are several problems with relying on juniper to supply this biofuel refinery. First, juniper is not a renewable resource because it is not replanted. The goal of restoration is to remove the trees permanently, not to regrow them. Second, the area where juniper needs to be removed is somewhat limited. There may be good reason to remove small junipers that are encroaching on key habitat areas for sensitive species such as sage grouse, but that is just a subset of the landscape. Third, rangeland restoration does not require removal of juniper. Restoration can be accomplish by killing juniper and leaving them in place. This is the preferable approach for several reasons. It avoids roads and heavy equipment on sensitive rangeland soils. And it retains scarce on-site nutrients that are locked up in the juniper trees.

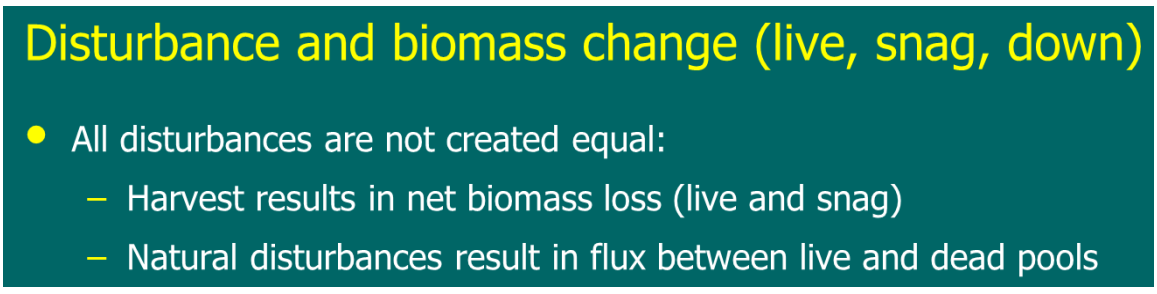
There are a variety of trade-offs associated with removing woody material from the forest. Road construction and use of heavy equipment fragment habitat, compact and disturb soil resulting in reduced site productivity, increased risk of erosion and water pollution, and loss of below-ground ecological processes. Reducing stand density in forests compromises habitat for a variety of wildlife that depend on relatively dense forest conditions and the abundant snag habitat that is associated with more dense forests. These wildlife include pine marten, three-toed woodpecker, pileated woodpecker, black-backed woodpecker, big game, goshawk, etc. Forests in south-central Oregon are still recovering from an unsustainable liquidation of old growth forests and large trees. Excessive density reduction that continues today could delay the restoration and recruitment of large trees and desired habitat conditions. Another trade-off is that density reduction, especially canopy thinning increases hazardous fire conditions. Canopy removal makes forests hotter, dryer, and windier, and it stimulates the growth of future hazardous fuels, especially surface and ladder fuels.

The EA failed to take a hard look at the effects of biomass removal compared to natural disturbance processes.

Forest wildlife in this landscape evolved with natural forest patterns that were largely determined by the frequency, severity, and spatial pattern of fires and other disturbances. Some argue that logging mimics fire, but this is not well supported. It is important that the EA clearly describe the ecological differences between logging and natural disturbance.

> Although many existing silvicultural systems have been designed to mimic stand-scale natural disturbances, McRae et al. (2001) and Palik et al. (2002) remind us that natural disturbances are inherently different from those of silviculture. One difference, of course, relates to the amount of carbon removed from the site when harvesting a forest. Removals tend to be much greater with harvesting than for fire, for example. Fire tends to create a complex mosaic of forest types and ages on the landscape. Forest harvesting, as commonly practiced, tends to simplify forest composition and structure.

Crow, T.R. and A.J. Perera. 2004. Emulating natural landscape disturbance in forest management – an introduction. Landscape Ecology 19: 231-233.
http://www.firescience.gov/projects/01-1-3-43/project/01-1-3-43_01_1_3_43_Deliverable_02.pdf



Ohmann, JL, MJ Gregory, HM Roberts, RE Kennedy, Z Yang, J Braaten, SL Powell, WB Cohen, V Kane, J Lutz. 2012. Mapping change in live and dead forest biomass with Landsat time-series, remeasured plots, and nearest-neighbor imputation. ForestSat 2012: Corvallis, OR; September 2012.
http://lemma.forestry.oregonstate.edu/export/presentations/ohmann_etal_2012_forestsat.pps

The most important disturbance process in this landscape is fire, but logging does not mimic fire.

> The presence of coarse woody debris is critical for biodiversity conservation. … In general, post-fire forest ecosystems include the presence of large numbers of snags and downed woody debris. This dead material provides important habitat elements for many species of plants and animals, while also storing a great deal of carbon (MacDonald 1993; Fleming and Freedman 1998; Freedman et al. 1996). Clearcut harvesting of natural forests results in the removal of most of the aboveground woody biomass from the site because trees are the commodity being harvested. … Because clearcut harvesting concentrates on the removal of biomass, it fails to produce large-dimension snags and coarse-woody debris in intensively managed forests, … Although both harvesting and wildfire kills trees, only fire leaves them as dead standing biomass. … The fire-killed snags and woody debris cast partial shade, which ameliorates the surface microclimate and may enhance the survival of pine seedlings (Fraser and Farrar 1953; Cayford and McRae 1983; Carleton and MacLellan 1994). … Some studies have suggested that the cover and richness of the understorey vegetation of a natural forest may never fully recover from clearcutting. … Wildfires reduce the presence of some hosts that assist the spread of pests and pathogens while clearcutting may promote them. … [E]xclusion of fire from such ecosystems, along with forestry practices that leaves young infected trees in the residual stand, leads to increased abundance of this parasite. In contrast, fire eliminates Dwarf mistletoe. … Numerous studies have determined the potential removals of nutrients with conventional and whole-tree clearcuts … The data show that clearcutting removes large amounts of biomass and nutrients from the site, and that these are equivalent to a substantial fraction of the site capita of these materials. … During a wildfire, biomass capital of the stand is lost by combustion, as is that of nitrogen through the oxidation of organic compounds and the release of gaseous NO and NH3. In intense wildfires these losses of biomass and nitrogen can be comparable in magnitude to what would be removed by the clearcutting of comparable stands. Unlike wildfire, however, clearcutting also removes large amounts of phosphorus, potassium, calcium, and magnesium contained in the tree biomass; these materials are mostly conserved *in situ* during a wildfire. … Clearcut harvesting with heavy equipment can cause severe soil compaction along skidding lanes and it can also disrupt soil profiles by churning … Permanent roads are not generally associated with wildfire management or suppression (although temporary access routes may be constructed while fighting some wildfires). An extensive road network is, however, necessary for timber harvesting and subsequent stand management. Roads affect biodiversity in many ways. Roads directly remove natural habitat, alter drainage and stream dynamics, cause erosion, introduce edge effects, fragment contiguous ecosystems, alter species movements, and act as corridors for the introduction of non-native species …. Road density is a useful indicator of ecological threat … [I]t is erroneous to assume that forest harvesting plays the same ecological role as wildfire.

D.J. McRae, L.C. Duchesne, B. Freedman, T.J. Lynham, and S. Woodley, 2001. Comparisons between wildfire and forest harvesting and their implications in forest management. Environ. Rev. 9. 223-260 (2001); DOI: 10.1139/er-9-4-223.

> From a wildlife perspective, stand-replacing fires and timber harvesting both represent major disturbances which significantly alter habitats … Despite their similarities, fire and logging differ in several of the habitat conditions they procure for wildlife. Wildfires, especially when severe, generate large amounts of standing (eventually downed) dead trees including large ones which represent an important habitat and food source for many wildlife species (Drapeau et al. 2002; Pedlar et al. 2002). … [T]he spatial variability of fire severity creates various amounts of green or mixed-severity stands over the burned landscape (e.g., Kafka, Gauthier, and Bergeron 2001; Smyth et al. 2005), which represent important refuge sites for some wildlife species (Norton and Hannon 1997; Tittler and Hannon 2000; Lance and Phinney 2001; Tittler,

Hannon, and Norton 2001). Contrarily, clearcut harvesting removes most of the large live trees, leaves few standing deadwood, and retains variable amounts of non-commercial trees and understory vegetation. … All studies directly comparing bird assemblages in burned and harvested stands reported an important divergence in bird assemblages, especially for the first years following disturbance (Hutto 1995; Schulte and Niemi 1998; Hobson and Schieck 1999; Imbeau, Savard, and Gagnon 1999; Schieck and Hobson 2000; Morissette et al. 2002; Simon, Schwab, and Otto 2002). One of the most striking differences lies in the abundance of the snag-associated guild in post-fire stands. … [H]igh snag densities are clearly missing in harvested stands (Schulte and Niemi 1998; Pedlar et al. 2002; Simon, Schwab, and Otto 2002). Concordantly, Imbeau, Savard, and Gagnon (1999) found no resident and cavity-nesting species in recent clearcuts, where little retention (green or dead trees) has been left on site. Similarly, Hobson and Schieck (1999) found very distinct assemblages between burned and harvested forests, a difference that was partly explained by the dominance of several snag-associated species. These major differences in the abundance of snag-associated species are of particular importance considering that several of these have been identified as the most sensitive to the long-term effects of forestry (Imbeau, Mönkkönen, and Desrochers 2001). … The magnitude of the initial divergence and eventual convergence in bird communities between fire and harvesting may greatly depend on the level of residual vegetation (Schieck and Hobson 2000). Schieck and Hobson (2000) found that bird assemblages from larger patches within disturbed stands supported more species from older forests than smaller ones. In contrast, bird communities from smaller patches (within cut blocks vs. burned stands) mainly reflected the surrounding post-disturbance communities, therefore showing the same initial divergence in bird assemblages between post-fire and post-harvest stands reported by Hobson and Schieck (1999). Nonetheless, over time these small patch communities also became more similar to those inhabiting mature fire origin forests and hence converged as succession proceeded (although some differences still persisted up to 60 years after disturbance). … Early after disturbance, most stand-level attributes differ between harvesting and wildfire. Structurally, young post-fire stands are characterized by more snags and less downed woody debris than young post-harvest stands. … Biodiversity elements significantly differ between burned and logged sites. Early after disturbance, significant differences in understory vascular and non-vascular community composition are commonly reported. Faunal assemblages, be they mammals, invertebrates, or birds, all seem to respond differently initially to harvesting- and wildfire-induced disturbances. … At the stand scale, while most forest attributes are different early after disturbance between burned and logged stands, the majority of these converge a few decades after fire. A few exceptions are to be noted, though. … [W]hile faunal communities do become less different as time passes, late in succession some species present in burned stands are either significantly less abundant or absent in similarly aged logged stands. … Post-fire salvage logging affects ecological processes, biological legacies, and the abundance of species commonly encountered only after fire. Removal of fire-killed trees can affect tree regeneration, understory composition, the abundance and distribution of dead wood, wildlife habitat, and soil properties. … At the landscape scale, the most important difference between fire and harvesting regimes is the distribution of stand age classes. The proportion of stands older than the rotation period (usually 100 yrs) tends toward zero under a fully regulated harvesting regime, while it is around 37% under a fire regime of similar rotation period. This results in a significant loss of over-mature forests in managed landscapes, potentially affecting organisms that are often associated with such stands.

NCASI. 2006. Similarities and differences between harvesting- and wildfire-induced disturbances in fire-mediated Canadian landscapes. Technical Bulletin No. 924. Research Triangle Park, N.C.: National Council for Air and Stream Improvement, Inc. http://landscape.zoology.wisc.edu/People/Simard/NCASI924.pdf

Dead trees are not “fuel,” they are “habitat.” When live trees are killed by natural disturbance they are not typically removed from the forest, rather, they are converted to dead woody biomass that serves a wide variety of ecological functions. Current direction in federal forest plans intended to provide snags and down wood tends to be focused on a small subset of the full spectrum of values provided by dead wood and does not ensure the continued operation of these ecosystem functions or meet the complete lifecycle needs of the many species associated with this unique and valuable habitat component. Please consider all the many values of snags and down wood presented in Rose et al (2001) excerpted below.

Introduction

Decaying wood has become a major conservation issue in managed forest ecosystems.[16, 64, 69a, 149, 201] Of particular interest to wildlife scientists, foresters, and managers are the roles of wood decay in the diversity and distribution of native fauna, and ecosystem processes. Numerous wildlife functions are attributed to decaying wood as a source of food, nutrients, and cover for organisms at numerous trophic levels.[231, 232, 234, 346, 369] Principles of long- term productivity and sustainable forestry include decaying wood as a key feature of productive and resilient ecosystems.[10, 229, 291, 293, 386] In addition to a growing appreciation of the aesthetic, spiritual, and recreational values of forests, society increasingly recognizes ecosystem services of forests as resource capital with tangible economic value to humans, such as air and water quality, flood control, and climate modification.[15, 262, 290]

The ecological importance of decaying wood is especially evident in coniferous forests of the Pacific Northwest. In this region, the abundance of large decaying wood is a defining feature of forest ecosystems, and a key factor in ecosystem diversity and productivity.[127] … Large accumulations of decaying wood provide wildlife habitat and influence basic ecosystem processes such as soil development and productivity, nutrient immobilization and mineralization, and nitrogen fixation.[85, 115, 218, 233] …

…

Since the publication of Thomas et al.[369] and Brown,[48] new research has indicated that more snags and large down wood are needed to provide for the needs of fish, wildlife, and other ecosystem functions than was previously recommended by forest management guidelines in Washington and Oregon. For example, the density of cavity trees selected and used by cavity-nesters is higher than provided for in current management guidelines.[53, 102] …

…

Ecological Functions of Decaying Wood

…

Recent significant advancements have defined wildlife species-specific relationships with particular characteristics and components of decaying trees, both standing and fallen,[56, 95, 185, 284, 351, 373, 386, 402] and implications for management.[13, 68, 223, 226, 250, 327] …

…

Hollow trees larger than 20 inches (51 cm) in diameter at breast height (dbh) are the most valuable for denning, shelter, roosting, and hunting by a wide range of animals.[7], **…**

…

… In the Interior Columbia Basin, grand fir and western larch form the best hollow trees for wildlife uses.

…

…

Recent studies have provided valuable insight on wildlife uses of snags (dead trees).[21, 56, 314, 402] Snags provide essential habitat features for many wildlife species (Figure 6). The abundance of cavity-using species is directly related to the presence or absence of suitable cavity trees. Habitat suitability for cavity-users is influenced by the size (diameter and height), abundance, density, distribution, species, and decay

characteristics of snags.[307] In addition, the structural condition of surrounding vegetation determines foraging opportunities.[402]

The Habitat Elements matrix on the CD-ROM with this book lists a total of 96 wildlife species associated with snags in forest (93 species) or grassland /shrubland (47 species) environments. Most of these species use snags in both environments. In forests, this includes 4 amphibian, 63 bird, and 26 mammal species. Additionally, 51 wildlife species are associated with tree cavities, 45 with dead parts of live trees, 33 with remnant or legacy trees (which may have dead parts), 28 with hollow living trees, 21 with bark crevices, and 18 with trees having mistletoe or witch's brooms. Habitat uses include nesting, roosting, preening, foraging, perching, courtship, drumming, and hibernating (Figure 7).

Of the 93 wildlife species associated with snags in forest environments, 21 are associated with hard snags (Stages 1 and 2), 20 with moderately decayed snags (Stage 3), and 6 with soft snags (Stages 4-5) in the five-stage classification system. According to the matrixes,188 most snag-using wildlife species are associated with snags >14.2 inches (36 cm) diameter at breast height (dbh), and about a third of these species use snags >29.1 inches (74 cm) dbh.

This query of the Habitat Elements matrix illustrates the breadth of updated information about wildlife and snag habitat relations. Research results have expanded the number and variety of decaying wood categories over what was previously presented in Thomas[366] and Brown.[48]

…

. Down Woody Material (logs). Down wood affords a diversity of habitat functions for wildlife, including foraging sites, hiding and thermal cover, denning, nesting, travel corridors, and vantage points for predator avoidance.[56, 64, 230] Larger down wood (diameter and length) generally has more potential uses as wildlife habitat. Large diameter logs, especially hollow ones are used by vertebrates for hiding and denning structures.[214, 230] …

…

Long term Productivity

… Processes that sustain the long- term productivity of ecosystems have become the centerpiece of new directives in ecosystem management and sustainable forestry.[78, 229, 291, 320] Given the key role of decaying wood in long-term productivity of forest ecosystems in the Pacific Northwest,[122, 169, 261, 302] the topic should remain of keen interest to scientists and managers during the coming decade.[149] … functions of decaying wood directly linked to long-term productivity, include[e] influences on the frequency and severity of disturbances such as fire, disease, and insect outbreaks.5, 6, 133, 137

Nutrient Cycling and Soil Fertility. Decaying wood has been likened to a savings account for nutrients and organic matter,[376] and has also been described as a short-term sink, but a long-term source of nutrients in forest ecosystems.[164] …

… Substantial amounts of nitrogen are returned to the soil from coarse wood inputs, yet even where annual rates of wood input are high, 4 to 15 times more nitrogen is returned to the forest floor from foliage than from large wood.[164] …

… The low nutrient content in wood, small mass of tree boles relative to foliar litterfall, and slow rates of wood decay suggest that large wood plays a minor role in forest nutrition.[18, 159, 162] After large scale disturbance such as fire and blowdown, however, the large nutrient pool stored in woody structures of trees (bole, branches, twigs, roots) becomes available to the regrowing forest. Large down wood may thus be an ample source of nutrients throughout secondary succession.[281]

…
Recent studies indicate that wood may release nutrients more rapidly than previously thought through a variety of decay mechanisms mediated by means other than microbial decomposers, i.e. fungal sporocarps, mycorrhizae and roots, leaching, fragmentation, and insects.[107, 158, 159, 162, 339, 405] …

Soil is the foundation of the forest ecosystem.[68, 348] … On the H. J. Andrews Experimental Forest of western Oregon, 20-30% of the soil volume consists of decaying wood dispersed throughout a matrix of litter and duff.[294] Because wood is a relatively inert substance, it may help to stabilize pools of organic matter in forests by slowing soil processes and buffering against rapid changes in soil chemistry. …
…
… Numerous studies have demonstrated that losses in soil productivity often are closely linked to losses in soil organic matter.[298]
…

Mass Wasting and Surface Erosion. … Large wood helps to anchor snowpacks, limit the extent of snow avalanches, and may even stabilize debris flows, depending on the depth of the unstable area.[125, 356, 358] … By covering soil surfaces and dissipating energy in flowing and splashing water, logs and other forms of coarse wood significantly reduce erosion.[357] Large trees lying along contours reduce erosion by forming a barrier to creeping and raveling soils, especially on steep terrain. Material deposited on the upslope side of fallen logs absorbs moisture and creates favorable substrates for plants that stabilize soil and reduce runoff.[230]

Stand Regeneration and Ecosystem Succession. Decomposing wood serves as a superior seed bed for some plants because of accumulated nutrients and water, accelerated soil development, reduced erosion, and lower competition from mosses and herbs.[160, 376] In the Pacific Northwest, decaying wood influences forest succession by serving as nursery sites for shade-tolerant species such as western hemlock, the climax species in moist Douglas- fir habitat.[80, 123, 160, 163, 244] Wood that covers the forest floor also modifies plant establishment by inhibiting plant growth, and by altering physical, microclimatic, and biological properties of the underlying soil. For example, elevated levels of nitrogen fixation in *Ceanothus velutinus* and red alder[35, 88] have been reported under old logs.

Streams and Riparian Forests. Long-term productivity in streams and riparian areas is closely linked to nutrient inputs, to attributes of channel morphology, and to flow dynamics created by decaying wood.[144, 233, 360] …

Large wood is the principal factor determining the productivity of aquatic habitats in low- and mid-order forested streams.[262] Large wood stabilizes small streams by dissipating energy, protecting streambanks, regulating the distribution and temporal stability of fast-water erosional areas and slow-water depositional sites, shaping channel morphology by routing sediment and water, and by providing substrate for biological activity.[361] The influence of large wood on energy dissipation in streams influences virtually all aspects of ecological processes in aquatic environments, and is responsible for much of the habitat diversity in stream and riparian ecosystems.[262, 376]

Key Ecological Functions of Wildlife Species Associated With Decaying Wood
…
Various symbiotic relations can be described for the 96 snag-associated species. Sixteen species are primary cavity excavators and 35 are secondary cavity users; 8 are primary burrow excavators and 11 are secondary burrow users; 5 are primary terrestrial runway excavators and 6 are secondary runway users. Nine snag-associated species create nesting or denning structures and 8 use created structures. Sixteen

species might influence vertebrate population dynamics and 22 might influence invertebrate population dynamics. Snag-associated species also contribute to dispersal of other organisms including seeds and fruits (21 snag-associated wildlife species perform this function), invertebrates (8 species), plants (8 species), fungi (2 species), and lichens (1 species). Six snag-associated species can improve soil structure and aeration through digging, 2 species fragment standing wood, and 2 species fragment down wood. One snag-associated species creates snags, and at least 1 can alter vegetation structure and succession through herbivory.

…

… both snag- and down wood-associated wildlife more or less equally participate in dispersal of seeds and fruits (although the particular species they disperse may differ); however, snag- associated wildlife play a greater role in dispersal of invertebrates and plants, and down wood-associated wildlife play a greater role in dispersal of fungi and lichens. Down wood-associated species might contribute more to improving soil structure and aeration through digging, and to fragmenting wood. This is one example of the far greater differentiating power afforded by a well-constructed set of matrixes than was previously available in Thomas [366] and Brown.[48] …

…

Fire Suppression. In the eastern Cascades and through much of the intermountain area, extensive forest insect and disease problems have resulted from decades of fire suppression in combination with selective harvesting of pines.[177, 194, 236, 401, 403] An analysis of landscape dynamics in the Interior Columbia River Basin[302, 379] revealed that fire suppression resulted in a decreased abundance of large- diameter trees, and caused fuel accumulations that predisposed forests to stand-replacement fires**.** As mentioned previously, more intense fires not only consume more wood, but can inhibit wood decay by reducing nitrogen availability (and other elements) through volatilization and leaching, especially for wood in close association with the soil.[245] Wood decay in post- fire regenerating forests also may be exacerbated by a decline in symbiotic nitrogen-fixing plant species in stands subject to prolonged fire suppression.[169]

…

Management Considerations Management Ramifications of Snag and Down Wood Abundance

…

… The apparent dearth of large snags in Ponderosa pine may mean lower suitability for the 54 wildlife species associated with large snags (20+ in or 51+ cm dbh) in that wildlife habitat. Intensive forest management activities that have decreased the density of large snags in early forest successional stages (sapling/pole and small tree stages) may have had adverse impacts on the 61 associated wildlife species (Figure 12). Similarly, the lesser amount of large down wood in early forest successional stages may not provide as well for the 24 associated wildlife species. Such results suggest the continuing need for specific management guidelines to provide large standing and down dead wood in all successional stages.

…

Depletion of Large Wood. The loss of large wood structures has numerous potential impacts on ecological functions of forests, although available information is inadequate for a definitive assessment. The lack of large logs on steep slopes can decrease water percolation into soil, impair slope stability, accelerate soil erosion and sediment input to streams, and increase nutrient losses in litter.[164, 358, 359, 360, 361] Some data support a linkage between intensive management (especially depletion of decaying wood) and reduced forest biomass productivity, particularly on less productive sites. Lower productivity is attributed to nutrient losses from managed forests, reduced nutrient availability in older stands, and decreased nutrient storage, particularly in the soil.[272, 383, 384] Depletion of soil organic matter has been cited as a primary factor contributing to declining forest productivity and biodiversity in the Pacific Northwest and elsewhere.[17, 137, 198, 199, 228, 292, 293, 298, 299]

…

Riparian Forests. … Far-reaching effects of the absence of large wood structures in streams include: 1) simplification of channel morphology, 2) increased bank erosion, 3) increased sediment export and

decreased nutrient retention, 4) loss of habitats associated with diversity in cover, hydrologic patterns, and sediment retention.[33, 144, 262] In coastal environments and estuaries, the loss of large wood may disrupt trophic webs and alter coastal sediment dynamics.[233]

…

Lessons Learned During the Last Fifteen Years

…

Several major lessons have been learned in the period 1979-1999 that have tested critical assumptions of these earlier management advisory models:

- Calculations of numbers of snags required by woodpeckers based on assessing their biological potential. (that is, summing numbers of snags used per pair, accounting for unused snags, and extrapolating snag numbers based on population density) is a flawed technique. Empirical studies are suggesting that snag numbers in areas used and selected by some wildlife species are far higher than those calculated by this technique.[226]
- Setting a goal of 40% of habitat capability for primary excavators, mainly woodpeckers,[369] is likely to be insufficient for maintaining viable populations.
- Numbers and sizes (dbh) of snags used and selected by secondary cavity-nesters often exceed those of primary cavity excavators.
- Clumping of snags and down wood may be a natural pattern, and clumps may be selected by some species, so that providing only even distributions may be insufficient to meet all species needs.
- Other forms of decaying wood, including hollow trees, natural tree cavities, peeling bark, and dead parts of live trees, as well as fungi and mistletoe associated with wood decay, all provide resources for wildlife, and should be considered along with snags and down wood in management guidelines.
- The ecological roles played by wildlife associated with decaying wood extend well beyond those structures per se, and can be significant factors influencing community diversity and ecosystem processes.

We have also learned that managing forests with decay processes should be done as part of a broader management approach to stand development, with attention paid to retaining legacies of large trees and decaying wood from original or prior stands. Further lessons have been learned in the area of technical and operational developments; some of these are discussed below.

…

… Studies suggest that wood habitat structures function best for wildlife when they are broadly distributed as well as occurring in locally- dense clumps, such as with scattered snag or down wood patches. …

…

… A new modeling tool named DecAID is available to assist with this task. DecAID (as in “decayed” or “decay aid”) is a new Decayed Wood Advisory Model being developed to address some of the recent lessons learned.226, 247 DecAID is based on a thorough review of literature, available research and inventory data, and expert judgment. It broadens the paradigm for wildlife species and habitat assessment by considering the key ecological functions of wildlife (see below) as well as the ecosystem context of wood decay in terms of secondary effects on forest productivity, fire, pest insects, and diseases.

…

The manager will be able to use DecAID for advice on the following topics by first specifying wildlife habitat, structural stage, and statistical (confidence) level: 1) wildlife species associated with particular sizes and densities of snags and down wood, or, conversely, the sizes and densities required to meet specified wildlife management objectives, at three levels of confidence; 2) the array of key ecological functions of wildlife associated with decaying wood; 3) the recent-historic and current range of natural conditions of snags and fallen trees; 4) advice on fire risk assessment and mitigation; 5) advice on the roles of insects and diseases associated with various amounts of decaying wood; 6) and the influence of the abundance of decaying wood on ecosystem processes and productivity.

…

Management Tools and Opportunities

…
… In young stands, Franklin[122] recommends that management should:

1. Aggressively create stands of mixed composition to maintain habitat for a broad array of species (and to achieve diversity in quality and timing of nutrient inputs to streams).
2. Delay the process of early canopy closure (wide spacings, pre-commercial thinning etc.).
3. Provide for adequate amounts and a continuous supply of large wood, including snags and down logs, for maintaining structural diversity in forests and streams and maintaining all other ecosystem processes associated with wood.

The basic theme of these revisions of intensive forestry practices is to retain the higher levels of complexity found in natural forests, and in so doing, to protect processes and structures that retain future options for ecosystem management. …

…

> … Retention of snags provides numerous habitat benefits.[154, 239, 402] However, safety and liability issues associated with snag retention have posed an operational barrier to management objectives for structural retention. Two approaches useful in reducing hazards associated with snags are: 1) to cluster snags in patches rather than wide dispersal, and 2) to create snags from green trees after cutting.[122]

… Managers must also consider the temporal dimension to decaying wood, to ensure that sufficient snag and down wood densities are provided through time. …

Live (Green) Tree Retention. Retention of living trees on cutover areas is one form of structural retention that can provide for future recruitment of snags and down wood …

> Green trees function as a refugium of biodiversity in forests. For example, many species of invertebrate fauna in soil, stem, and canopy habitats of old-growth forests do not disperse well, and thus, do not readily recolonize clear-cut areas.[207, 326] The same concept holds for many mycorrhizae-forming fungal species.[293] Added benefits of green tree retention include moderated microclimates of the cutover area, which may increase seedling survival, reduce additional losses of biodiversity on stressed sites,[293] and facilitate movement of organisms through cutover patches of the landscape. Green trees retained across harvest cycles can also be used to grow very large trees for either ecologic or economic goals. …

Green tree retention offers many benefits to wildlife. For example, the higher structural diversity in young stands that contain legacy trees from previous stands provides much improved habitat values to late successional species such as the northern spotted owl, as well as other vertebrates that use late-successional stands for some elements of their life history.[69, 122, 314] Such stands may provide wildlife habitat as early as age 70-80 years rather than 200-300 years, the approximate time interval required for old-growth conditions to develop after secondary succession. …

…

Summary of Management Recommendations

The information presented in this chapter emphasizes several properties of decaying wood in forest ecosystems: (1) each structure formed by decaying wood helps support a different functional web in the ecosystem; (2) no one decaying wood structure supports all functions equally; and (3) all decaying wood habitats together support the widest array of ecological functions and associated wildlife species. The CD-ROM with this book in combination with the DecAid model provides managers with a powerful tool that makes it possible to assess the degree of "full functionality" of ecosystems as supported by the various

decaying wood structures, and which functions are strengthened, diminished, or lost through alternative silvicultural management practices.

Lessons for managers are:

…

2. Emphasize retention of wood legacies, and secondarily promote restoration where legacies are deficient to meet stated objectives. The decline of species associated with late-successional forest structures, as well as the prolonged time needed to produce wood legacies, suggests that it is both ecologically and economically advantageous to retain legacy structures across harvest cycles wherever possible, rather than attempt to restore structures that have been depleted. This is especially obvious for slow-growing tree species and very large wood structures. …

…

Operational Considerations

…

… OSHA revised the federal Logging Standard (29 CFR 1910.266) in 1995, to clarify its intent that danger trees may be avoided, rather than being removed or felled.[72a] A danger tree is any standing tree (live or dead) that poses a hazard to workers, from unstable conditions such as deterioration, damage, or lean. The revised rule allows some discretion in determining the hazard area around a danger tree, by....allowing work to commence within two tree lengths of a marked danger tree, provided that the employer demonstrates that a shorter distance will not create a hazard for an employee..(OSHA Logging Preamble, Section V). Determining a safe working distance requires a case-by-case....evaluation of various factors such as, but not limited to, the size of the danger tree, how secure it is, its condition, the slope of the work area, and the presence of other employees in the area. …

Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 *in* ***Wildlife-Habitat Relationships in Oregon and Washington*** (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GISdata/docs/chapter24.pdf.

Snags are not just nice to have, they are an essential feature of old forests. A stand of big trees without snags is not a healthy forest. The ICBEMP Scientific Analysis Group (SAG) review of selected terrestrial vertebrate populations used "large snag density as a proxy for the structural quality of old-forest habitats." and the SAG found that

> Key model factors contributing most strongly to low environmental index values and low population outcomes—
>
> *Families 1 and 2 (Old-forest families)—*
>
> • Low recruitment of large snags composed of shade-intolerant tree species, such as ponderosa pine, western larch, and western white pine, as indexed by moderate and high HRV (Lewis' woodpecker (migrant), pygmy nuthatch, flammulated owl), are the key factors contributing to low environmental index and low population outcomes.
>
> • Low quality of old-forest structural conditions (lack of diversity of size and decadence of large trees, large snags, and large logs), as indexed by declining large

snag and/or large log trends (northern goshawk [summer], American marten, hoary bat), are the key factors. …

Long-eared myotis (Family 7)—

• … decreasing snag trends (indexing low availability of roost sites) contribute to low environmental index and low population outcomes. …

Western bluebird (Family 8)—

• High HRV departure and declining large snag density (indexing a lack of shade-intolerant tree species recruited as snags) contribute to the low environmental index and low population outcomes.

Martin G. Raphael, Richard S. Holthausen, Bruce G. Marcot, Terrell D. Rich, Mary M. Rowland, Barbara C. Wales, Michael J. Wisdom, 2000. DRAFT Effects of SDEIS Alternatives on Selected Terrestrial Vertebrates of Conservation Concern within the Interior Columbia River Basin Ecosystem Management Project, March 2000, revised June 23 , 2000 and November 14, 2000.

In a dynamic ecosystem life may be fleeting but the snags and logs that survive disturbance provide very critical temporal links from one stand to the next. Under natural conditions, a forest hands down a large legacy of living and dead material from one stand to another even after an intense disturbance. Even non-stand-replacing disturbance creates pulses of dead material that are critical for forest ecosystems. See

1. Franklin, J.F., Lindenmayer, D., MacMahon, J.A., McKee, A., Magnuson, J., Perry, D.A., Waide, R., and Foster, D. 2000. Threads of Continuity. Conservation Biology in Practice. [Malden, MA] Blackwell Science, Inc. 1(1) pp9-16.
2. William F. Laudenslayer, Jr., Patrick J. Shea, Bradley E. Valentine, C. Phillip Weatherspoon, and Thomas E. Lisle *Technical Coordinators.* Proceedings of the Symposium on the Ecology and Management of Dead Wood in Western Forests. PSW-GTR-181. http://www.fs.fed.us/psw/publications/documents/gtr-181/.
3. Lofroth, Eric. 1998. The dead wood cycle. In: Conservation biology principles for forested landscapes. Edited by J. Voller and S. Harrison. UBC Press, Vancouver, B.C. pp. 185-214. 243 p. http://www.for.gov.bc.ca/hre/deadwood/DTrol.htm.
4. Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 *in* ***Wildlife-Habitat Relationships in Oregon and Washington*** (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) http://www.fs.fed.us/wildecology/decaid/decaid_background/chapter24cwb.pdf
5. Stevens, Victoria. 1997. The ecological role of coarse woody debris: an overview of the ecological importance of CWD in B.C. forests. Res. Br., B.C. Min. For., Victoria, B.C. Work. Pap. 30/1997. http://www.for.gov.bc.ca/hfd/pubs/docs/Wp/Wp30.pdf.
6. Hagar, Joan, 2007, Assessment and management of dead-wood habitat: USGS Administrative Report 20071054, pp. 1-32. http://pubs.usgs.gov/of/2007/1054/pdf/ofr20071054.pdf

The Forest Service even has a public education program called "Animal Inn" intended to inform the public of the value of dead wood, unfortunately the agencies still don't fully recognize these values:

> Nearly a third of all forest creatures depend on standing dead or fallen trees for their survival. ANIMAL INNS provide shelter, nest sites, and feeding areas for over 1200 species of birds, mammals, amphibians, and reptiles; over 60% of which feed on insects. These insect-eating species act as natural biological regulators to dampen the effects of insect outbreaks in forested lands, thereby performing an important ecosystem function. Fish benefit from trees that have fallen into stream channels.

http://web.archive.org/web/20021122150003/http://www.fs.fed.us/r6/nr/wildlife/animalinn/basicneed.htm. See also: http://web.archive.org/web/20021017194337/http://www.fs.fed.us/r6/nr/wildlife/animalinn/habitat.htm

An important and under-appreciated ecological process is the cycle of biomass accumulation (e.g., large snag and dead wood are vastly under-represented on the landscape because management is so focused on controlling and preventing mortality.) The full life-cycle of a tree starts with photosynthesis that captures carbon from the air to build a magnificent tree but it includes decades to centuries of "life" as a snag, down wood, and soil enhancement before it returns to the atmosphere to begin the cycle again. The dead wood portion of this cycle needs to be re-established to enhance biodiversity, hydrology, soil productivity, and carbon storage. The NEPA analysis needs to recognize the full life-cycle of forests including the ecological, hydrological and carbon-cycle value of both live and dead trees.

The Air Force has improperly made decisions before completing NEPA, and failed to consider a full range of NEPA alternatives.

CEQ regulations at 40 CFR 1500.1(b) requires all agencies to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." The draft EA (p 14) says that the project site in Lake County was chosen due to its "proximity to woody biomass feedstock sources." This is an admission that choices/ decisions have been made without completing required NEPA steps, including consideration of the environmental impacts of using the locally available raw materials, and consideration of alternative sites that might provide even better access to raw material that has fewer environmental impacts. The EA should explore alternative sources of raw material including ag waste, residues from real restoration, slash piles in high-productivity forest types.

EA (p25) says "Red Rock considered other sites in Lake County that were close to available woody biomass feedstocks, the Ruby Pipeline, and other existing infrastructure…" This highlight two problems, First, the EA needs to disclose the effects of these alternatives. Second, it shows that the applicant has only considered sites in Lake County, even though more

appropriate sites may be located in other counties. The applicant has excluded consideration of a full range of NEPA alternatives in violation of NEPA.

After consideration of alternatives the Air Force may decide to relocate this project to another location where the raw material can be supplied more sustainably. A NEPA compliant analysis will almost certainly require consideration of a range of alternative locations that involve different sources of raw material.

The EA needs to disclose the potentially significant risks of rail transport of fuel products produced at this facility.

Lakeview is not located in close proximity to aviation or maritime fuel markets so finished products (which are hazardous by any definition) must be transported long distance to reach end users.

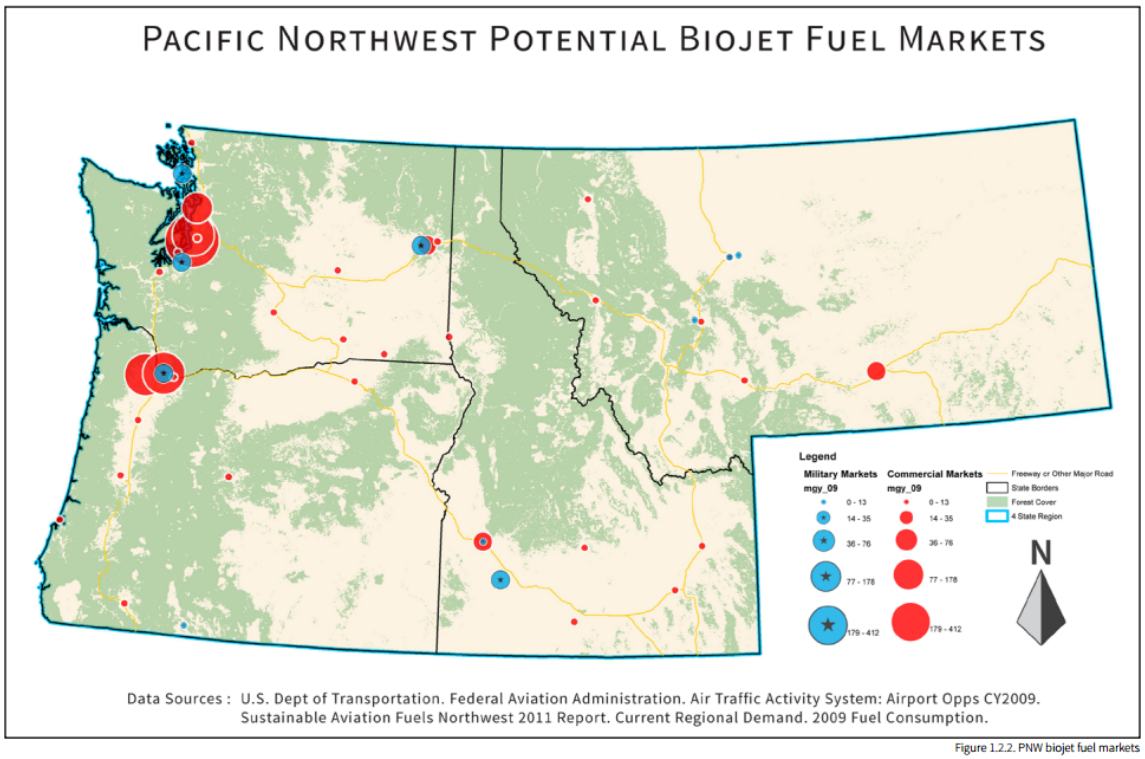


Figure 1.2.2. PNW biojet fuel markets

https://nararenewables.org/pacificnorthwest/docs/Vol1-Profile.pdf

This project will produce fuels that may be transported to end users via rail. This may require upgrades to rail facilities. This may also involves risks of spills and accidents that need to be disclosed in the EA. There may be tribal interests in that would be adversely affected by this project including rail transport down the McCloud River.

The EA needs to fully and accurately disclose the adverse effects of the biofuel facility on air quality.

Lakeview has poor air quality, especially fine particulates (PM 2.5). This biofuel enterprise will likely make a bad situation worse in terms of air quality. This could have significant health impacts on sensitive populations within the local community.

The FONSI needs to carefully and accurately consider the significance of the environmental effects of this project.

Many of the effects described in the EA and our comment letter appear to be potentially significant. The draft FONSI does not take a hard look at potential significance (both individually and in combination) of all these effects.

The EA needs to disclose the effects of developing on a floodplain under the influence of climate change.

The preferred facility development site is located within the 100 year floodplain of Goose Lake. The EA needs to account for the fact that climate change is likely to intensify the hydrologic cycle and could cause more frequent and more intense floods, relative to the historic pattern.

The EA says "structures located within the Special Flood Hazard Area have a 26-percent chance of flooding during the life of a standard 30-year mortgage …" This percentage is likely to increase due to climate change. Global warming will reduce the steepness of the temperature gradient between the equator and poles. This is expected to slow down the jet stream and make it more sinuous. This means that weather systems (such as moist Pacific storm systems, aka "Pineapple Express") are more likely to get "stuck" (remain stationary) and deliver large amounts of precipitation over longer periods of time, thereby increasing the frequency and severity of flooding. See: http://www.vancouverobserver.com/blogs/earthmatters/climate-change-altering-jet-stream-causing-storms-get-stuck; http://climatenexus.org/learn/planetary-systems/jet-stream

The Southern Pacific Rail line that runs along the west boundary of the preferred site, does not protect the site from flooding because it was not designed to be impermeable to water.

The finding related to floodplain are unfounded. The EA includes a Fining of No Practicable Alternatives to building on the floodplain. The EA does not even consider alternative locations for this facility that make much more sense from several perspectives, including economical access to biomass supplies, access to markets, etc.

The EA should Describe Mitigation Options for All Effects, including Climate Change.

The agency should disclose and describe the full environmental impacts of the proposed action without compensatory mitigation, then describe proposed mitigation and how it would compensate for the predicted impacts. The agency should specifically describe how mitigation would operate to preclude resource impacts, and clearly differentiate between avoidance and minimization measures from mitigation. The source and certainty of mitigation funding should also be discussed in the NEPA analysis, as well as the consequences if funding and implementation are not forthcoming. This is exactly how the EPA prefers to see mitigation discussed in NEPA analyses. See EPA's 2-18-04 letter on the Biscuit Fire Salvage DEIS.

The President has established a clear policy mandate to minimize and mitigate impacts caused by federal actions. The EA should spell out how these mandates are met.

> Section 1. Policy. It shall be the policy of the Departments of Defense, the Interior, and Agriculture; the Environmental Protection Agency; and the National Oceanic and Atmospheric Administration; and all bureaus or agencies within them (agencies); to **avoid and then minimize harmful effects to land, water, wildlife, and other ecological resources (natural resources) caused by land- or water-disturbing activities**, and to ensure that any remaining harmful effects are effectively addressed, consistent with existing mission and legal authorities. Agencies shall each adopt a clear and consistent approach for avoidance and minimization of, and compensatory mitigation for, the impacts of their activities and the projects they approve.
>
> …
>
> Sec 2. Definitions … (f) "Mitigation" means avoiding, minimizing, rectifying, reducing over time, and compensating for impacts on natural resources. As a practical matter, all of these actions are captured in the terms avoidance, minimization, and compensation. These three actions are generally applied sequentially, and therefore compensatory measures should normally not be considered until after all appropriate and practicable avoidance and minimization measures have been considered.
>
> …
>
> Sec. 3. Establishing Federal Principles for Mitigation. … (b) Agencies' mitigation policies should **establish a net benefit goal or, at a minimum, a no net loss goal for natural resources the agency manages that are important, scarce, or sensitive**, or wherever doing so is consistent with agency mission and established natural resource objectives. When a resource's value is determined to be irreplaceable, the preferred means of achieving either of these goals is through avoidance, consistent with applicable legal authorities. Agencies should explicitly consider the extent to which the beneficial environmental outcomes that will be achieved are demonstrably new and would not have occurred in the absence of mitigation (i.e. additionality) when determining whether those measures adequately address impacts to natural resources.
>
> …
>
> (e) Agencies should take action to increase public transparency in the implementation of their mitigation policies and guidance. …
>
> …
>
> (f) When evaluating proposed mitigation measures, agencies should consider the extent to which those measures will address anticipated harm over the long term. To that end, agencies should address the durability of compensation measures, financial assurances, and the resilience of the measures' benefits to potential future environmental change, as well as ecological relevance to adversely affected resources.

Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment. Nov 3, 2015. https://www.whitehouse.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related

The EA needs to disclose the adverse climate effects of producing and using biofuel.

Biomass has a lower energy content than fossil fuels, so using biomass as fuel will actually result in greater greenhouse gas emissions per unit of energy. This means the short-term effect of biofuels is to make climate change worse instead of better. The benefits of biofuel, if any, are in speculative and delayed (many decades to centuries in the future). By that time, we will have successfully decarbonized our economy so the benefits won't be worth nearly as much as near term emissions reductions that are so desperately needed.

The EA says that GHG need to be considered if they exceed 25,000 tonnes/yr of CO2e, then refers readers to Appendix A. This Appendix is difficult to interpret. Appendix A (p 379) uses lots of strange acronyms like LDGV, LDGT, LDDT, COM BUS, etc. It expresses emissions in grams instead of tonnes. It never seems to fully disclose the cumulative emissions of CO2e. NEPA analysis is supposed to be clear and accessible to the reader. This analysis fails the test.

The project anticipates using 170,000 bone-dry tonnes of biomass per year. That biomass will be converted to fuels and other products most of which will be emitted to the atmosphere over relatively short time-scales. Approximately half of the dry weight of wood is carbon. Adding two oxygens atoms to each of those carbons results in CO2 equal to 3.67 times the weight of the carbon atoms alone. Based on this rough calculation, we estimate about 311,950 tonnes of CO2e/year will be produced by this facility.

To this estimate, the EA needs to account for additional emissions from using natural gas, vehicles, machinery, emissions from land use not captured in the woody biomass delivered to the site, as well as emissions of other GHG with climate impacts far exceeding that of CO2. The biomass-gasification-to-Fischer-Tropsch pathway is likely to emit a wide range of organic molecules with potentially significant impacts on air quality and climate.

Even if Congress mandated the Air Force to develop and demonstrate this technology, that does not change the Air Force's duty to disclose the adverse climate impacts of this project. In fact, it will help inform decision-makers so that this counter-productive technological path can be averted.

The Air Force needs to conduct a full life-cycle carbon assessment of this project, and they need to account for and mitigate the adverse climate effects caused after emissions and before regrowth of the forests where the raw materials are collected. The EA needs to recognize that simply repaying the carbon debt is not enough, because the climate effects during the payback period have not yet been mitigated. The analysis of this project needs to account for full climate parity which occurs long after the carbon debt is repaid.

In June 2013, the Climate Justice Network put together an Open Letter to Citizens Climate Lobby, signed by 86 organizations in 29 states and 11 countries, saying -

> A growing literature demonstrated that biofuels are very inefficient to produce and when full lifecycle assessments are completed, many have a carbon footprint comparable to, or worse than fossil fuels. … Recent science also tells us that these "biogenic" sources are not carbon neutral in any meaningful Time-frame – that it takes several decades for wood burning to become just as bad as coal if trees are grown and let alone to compensate for the extra CO2 released, and centuries to approach carbon neutrality.

http://www.energyjustice.net/files/climate/CCLsignon.pdf *citing* Mike Ewall 2014, Biomass Incineration and Climate, Energy Justice Network. http://www.energyjustice.net/files/biomass/climate.pdf

> [W]ide-scale implementation of forest thinning and energy production from biomass without sufficient scientific support is a highly risky approach to limiting climate change, with potentially irreversible long term impacts to forests. In Western U.S. forests, thinning combined with energy production from biomass is based on two core assumptions: (1) fires are increasing in intensity and/or acres burned and thinning is needed to reduce these fire effects; and (2) when the byproducts (trees and shrubs) of thinning are used to replace fossil fuels for energy production, emissions are reduced. Based on our review of the literature, we conclude that:
>
> - Wildfire is not increasing compared to historic periods …
> - Large fires are driven more by climate than fuels …
> - Most carbon is stored, not emitted, during fires …
> - Maturing natural forests are not accumulating more fuels – As the time between fires increases in mixed-severity fire systems, this is not necessarily associated with higher fire risk …
> - Thinned areas and fire outbreaks are unlikely to overlap …
> - Biomass is "renewable" only over long time frames while drastic greenhouse gas emissions cuts are needed over shorter time frames …
> - Biomass can produce higher CO2 emissions than coal …

DellaSala, D.A., and M. Koopman. 2015. Thinning combined with biomass energy production may increase, rather than reduce, greenhouse gas emissions. Geos Institute, Ashland, OR. http://www.energyjustice.net/files/biomass/library/biomass_thinning_study.pdf

DeCicco (2013) says that "A first-order model shows that biofuels are beneficial only to the extent that their production effectively enhances net ecosystem production." Thus, since logging is a subtractive endeavor, it is highly unlikely to increase net ecosystem productivity or carbon stores.

> Although biofuels can play a mitigation role when certain conditions are met, deemphasizing biofuel production in favor of terrestrial carbon management may offer more immediate and effective ways to counterbalance the CO2 emitted ... [T]he dependence of LCA [life-cycle analysis] on system boundary assumptions (among other sources of uncertainty) results in a very divergent literature. Ideally, carefully

qualified results from IAM would be used to guide public policy. What has happened instead is that policymakers have embraced certain LCA results, relying on simplistic, or at best inadequately qualified, interpretations of the fact that biofuels "recycle" carbon, i.e., that end-use CO2 emissions from combustion are fully balanced by CO2 uptake in feedstock growth. This closed-loop model of carbon flows is easy to understand and its intuitive appeal fosters a widespread popular belief that biofuels are inherently carbon neutral. ... A great deal of doubt therefore surrounds LCA estimates of biofuels' GHG impacts (Cherubini et al 2009; Delucchi 2010). A key question is whether the CO2 reduction claimed when substituting a biofuel for a fossil-derived fuel is additional in a carbon accounting sense (Searchinger 2010). The LCA methods used to justify policies that promote biofuels for climate mitigation build in an assumption that CO2 uptake in feedstock is fully additional. ... Faced with this indeterminacy, it is prudent to set aside LCA and its closed-loop model of carbon flows. Analysis can be anchored in the certainty that end-use CO2 emissions rates vary little, falling within a range of 73 (±2) gCO2/MJ for common liquid fuels (GREET 2011). ... If additional net CO2 uptake occurs as a result of biofuel use, the location of that net uptake is land. Because commodity markets are involved, properly treating land use means that no system boundary short of the entire world will suffice. Once LCA is set aside in favor of direct carbon accounting that examines CO2 sources and sinks separately, better clarity emerges about options for addressing CO2 emissions from liquid fuel use. ... Beyond actions to reduce fuel demand, CO2 reductions must be found through mitigation in the fuel supply system, a task commonly seen as shifting from petroleum fuels to alternatives such as biofuels, ... The third category involves counterbalancing CO2 emissions from the use of carbon-based fuels with CO2 uptake in other locations. It can be further broken down into the three subcategories in the third tier of the table. Two involve the biosphere, either by increasing CO2 uptake in biomass which, as elaborated below, requires raising net ecosystem production (NEP), or by avoiding CO2 releases that otherwise would occur, e.g., by utilizing wastes as a feedstock. ... Biofuels fall under the category of measures that seek to remove CO2 in one location in order to balance the CO2 emitted in other locations where fuels are burned. For analyzing this option it is helpful to define a simple model of globally coupled bio- and fossil-fuel interactions. ... Biofuels fall under the category of measures that seek to remove CO2 in one location in order to balance the CO2 emitted in other locations where fuels are burned. For analyzing this option it is helpful to define a simple model of globally coupled bio- and fossil-fuel interactions. ... When used for bioenergy, the additional biomass is diverted into the energy system and so does not accumulate in the biosphere. ... Once additional carbon is fixed, sequestering it is just as effective as displacing fossil carbon for reducing CO2 buildup in the atmosphere (Marland and Marland 1992). For example, in the case of avoiding releases that would otherwise occur, R might be decreased through practices that increase carbon accumulation (letting forests regrow, rebuilding soil carbon, etc.). The gain in carbon stock then benefits the atmosphere as much as converting the added biomass into biofuels, and may be more effective if accomplished with lower GHG emissions for processing. ... In all cases, the starting point for comparing options needs to be in situ assessment of the change in NEP, which therefore requires knowledge of baseline NEP including any necessary adjustment for leakage. Options for the use of any additionally fixed carbon can then be evaluated by costs, market value, emissions and other environmental and social considerations. ... The spatial boundary of a biofuel lifecycle extends globally and its temporal boundary extends into the future, rendering LCA-based GHG estimates scientifically indeterminate for reasons both practical and fundamental. ... By underscoring the need to show that feedstock production measurably improves the terrestrial carbon balance, this analysis admit-tedly implies a cautious view of biofuels' mitigation potential. ... [Conclusion] Analysis can be anchored in a key certainty that LCA often obscures, namely, that the end-use CO2 emissions of similar liquid fuels are essentially the same. Carefully examining carbon sources and sinks reveals that no climate benefit is to be found in end-use sectors where liquid fuels might be substituted, but rather must be found elsewhere in sectors that supply feedstocks or other locations of CO2 uptake. A first-order model shows that biofuels are beneficial only to the extent that their production effectively enhances net ecosystem production.

DeCicco J.M. 2013. Biofuel's carbon balance: doubts, certainties and implications. Climatic Change (2013) 121:801–814. DOI 10.1007/s10584-013-0927-9
http://download.springer.com/static/pdf/522/art%253A10.1007%252Fs10584-013-0927-9.pdf?auth66=1398528430_ad123a71083ade45750f8bec9a091a43&ext=.pdf

Gunn et al (2012) cautions against the view that biogenic carbon emissions are preferable to fossil fuel emissions:

> The physics of the greenhouse effect is indifferent as to the origin of the pollutant. Once a molecule of CO2 is in the atmosphere its heating capacity is the same regardless of its source. It is the overall C budget and the net atmospheric concentration of greenhouses gases that are of concern. If greater use of wood energy has the unintended consequence of contributing to an increase in atmospheric CO2 concentrations, then decisions to switch to biogenic fuels should be guided by careful accounting to determine net carbon fluxes to and from the atmosphere.
>
> An earlier letter to the US House of Representatives and US Senate (Schlesinger et al., 2010) from 90 American scientists stated that 'Although fossil fuel emissions are reduced or eliminated, the combustion of biomass replaces fossil emissions with its own emissions (which may even be higher per unit of energy because of the lower energy to carbon ratio of biomass)'. More research is needed to determine which biomass energy technology scenarios and forest ecosystems are most likely to result in greater biogenic emissions than the equivalent fossil fuel energy source. But recent work in the United States and Europe supports the Schlesinger et al.(2010) statement (e.g. Walker et al., 2010; Bird et al., 2011; McKechnie et al., 2011). In addition, if biomass harvests involve living trees that would otherwise have remained alive and growing, the short-term net impact on the atmosphere will be greater than if logging residue or waste wood were used. All wood is not equal in terms of temporal impact to atmospheric GHG levels. Therefore, the use of wood for energy needs a strong quantitative basis ensuring policy based on evidencerather than opinion.
>
> Wood energy harvests encompass a wide range of silvicultural treatments, but have the potential to increase the overall intensity and frequency of harvesting. This can reduce the net amount of carbon stored in forest biomass at any moment in time at landscape scales, particularly in natural forest systems with low risk of catastrophic disturbances and relatively slow growth rates. If overall harvesting intensity increases to meet new demand for wood energy, carbon stocks on the landscape can be depressed to a lower equilibrium storage condition therefore increasing overall atmospheric CO2 even when considering the substitution benefits (Harmon et al., 1990; Smithwick et al., 2006; McKechnie et al., 2011).
>
> … When we also consider the amount of biogenic C remaining in the atmosphere as a result of historical global conversion of forests, prairies, peatlands and wetlands (Birdsey et al., 2006; Rhemtulla et al., 2009; van der Werf et al., 2009), it becomes clear that all sources of additional C emissions should be evaluated based upon their near term contribution to the atmosphere and their potential for re-sequestration by new biological growth. This historical debt also negates the argument that biogenic carbon can be banked in advance of consumption for energy (e.g. Sedjo, 2011). Again, what matters is the amount of CO2in the atmosphere, regardless of the source.
>
> One rationale for increasing the use of forest biomass for energy is that the biogenic carbon cycle is in balance as long as trees are growing and sequestering carbon somewhere else within other forests (Lucier, 2010). While this argument makes sense when considering the sustained yield of wood products, it fails to consider the complete basis for calculating net GHG effect on the atmosphere of switching from fossil fuels to biomass. Moreover, when applied to carbon, this approach implies that the biogenic carbon cycle is separate from a global carbon cycle. …

> What matters most in our climate change mitigation efforts is the movement of C from any pool into and out of the atmosphere (i.e. the net effect on atmospheric carbon concentrations).
>
> … There is an immediate need to deal with the complexity of carbon accounting as it relates to wood-derived bioenergy.

John S. Gunn, David J. Ganz, and William S. Keeton 2012. Biogenic vs. geologic carbon emissions and forest biomass energy production. GCB Bioenergy (2012) 4, 239–242, doi: 10.1111/j.1757-1707.2011.01127.x
http://www.manomet.org/sites/default/files/publications_and_tools/BiogenicGeologic%20August%202011.pdf

Biomass proponents often assert that biomass is just residue from logging or milling so it just makes energy from material that would otherwise have caused GHG emissions from decomposition or burning. This is a questionable assumption for several reasons. First, there are already markets for a lot of forest industry residues. The climate conseqences of those alternative products might be similar or better than bioenergy. For instance, sawdust might end up in long-term storage in particle board used for subflooring. Second, biomass subsidies are not limited exclusively to residues. Biomass incentives often extend the footprint of forestry activities, so that more acres are treated or more trees are removed. This undermines the suggestion that only residues are being utilized.

Proponents often say that biomass energy is carbon neutral, however, due to the fact that biomass has a lower energy content than coal -

> … it is a physical, measurable fact that wood-burning power plants emit about 50 percent more carbon dioxide per megawatt-hour generated than a coal plant ….
>
> The only question is, how long will it take to regrow the trees and recapture the carbon pumped into the atmosphere when those trees were burned?
>
> That is a legitimate scientific question, one that has been looked at by the state of Massachusetts and is under active review by the Environmental Protection Agency's Science Advisory Board. In Massachusetts, the state concluded that the climate impacts of burning wood were worse than coal for 45 years, and worse than natural gas for about 90 years.
>
> Only after many decades might regrowing forests recapture enough carbon to make burning wood better than these fossil fuels. It would take well over a century of regrowth in Massachusetts forests to approach net-zero carbon emissions, or carbon neutrality.

Booth, M. 2015. Burning wood for power pollutes more than coal. Angus King's biomass bill ignores this. Bangor Daily News. http://bangordailynews.com/2015/05/28/opinion/burning-wood-for-power-pollutes-more-than-coal-angus-kings-biomass-bill-ignores-this/ This time difference is critical. Burning wood in biomass causes far more GHG emissions now than other sources of power. And while it may recapture some of that carbon over a hundred years or more, the problem is we need to reduce GHG emissions now, not increase it. Carbon emissions are more harmful in the near-term period while we are in the process of decarbonizing our economy. Liz Marshall and Alexia Kelly 2010. The Time Value of Carbon and Carbon Storage: Clarifying the terms and the policy implications of the debate. World Resources Institute. November 2010 http://mpra.ub.uni-muenchen.de/27326/1/MPRA_paper_27326.pdf ("...there is always a positive value to temporary storage of carbon [such as in unlogged forests] (Table 3). These figures

suggest that there are positive benefits to society of storing carbon now, even if it is released later.")

The agency should conduct a careful review of the carbon consequences of biomass-to-energy conversion. Consider the analysis in Manomet Center for Conservation Sciences. 2010. Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources. Walker, T. (Ed.). Contributors: Cardellichio, P., Colnes, A., Gunn, J., Kittler, B., Perschel, R., Recchia, C., Saah, D., and Walker, T. Natural Capital Initiative Report NCI-2010-03. Brunswick, Maine. http://web.archive.org/web/20100703171346/http://www.mass.gov/Eoeea/docs/doer/renewables/biomass/Manomet_Biomass_Report_Full_LoRez.pdf.

According to the authors,

> "state-of-the-art, thinking on the impacts of forest biomass combustion on greenhouse gases" requires consideration of several factors: "high productivity and efficiency in use favour the bioenergy option. Low productivity land may be better used for carbon sinks, … The fossil fuel system to be displaced …; The initial state of the land converted to carbon sinks or bioenergy plantations (and of land elsewhere possibly impacted indirectly…); … the timescale that is used for the evaluation … [C]arbon sinks can be viewed as a way to buy time for the advancement of climate-friendly energy technologies other than bioenergy. [quoting the 2009 IEA Bioenergy Report] … Bioenergy therefore reduces greenhouse gases only if the growth and harvesting of the biomass for energy capture carbon above and beyond what would be sequestered anyway and thereby offset emissions from energy use. This additional carbon may result from land management changes that increase plant uptake or from the use of biomass that would otherwise decompose rapidly. [quoting Searchinger, et al. (2009)] … In general, the scientific literature on the GHG impacts of forest biomass appears to be in agreement that impacts will depend on the specific characteristics of the site being harvested, the energy technologies under consideration, and the time frame over which the impacts are viewed (IEA, 2009). Site-specific factors that may have an important influence include ecosystem productivity, dynamics and disturbance (e.g., dead wood production and decay rates, fire, etc.); the volume of material harvested from a site for biomass; the efficiency of converting biomass to energy; and the characteristics of the fossil fuel system replaced. … [B]iomass generally produces greater quantities of GHG emissions than coal, oil or natural gas. … The benefits of biomass energy accrue only over time as the "excess" GHG emissions from biomass are recovered from the atmosphere by growing forests. … **[I]t is also important to note that the point at which the cumulative carbon flux from biomass just equals the cumulative flux from fossil fuels (the point at which the biomass carbon debt is paid off) is not necessarily the point at which a policymaker is indifferent between the biomass and fossil fuel scenarios. For example, the policymaker might only be indifferent at the time when the discounted damages resulting from the excess biomass emissions just equals zero—this is the point in time at which early damages due to increased GHG levels from biomass are just offset by lower biomass damages in later years when net cumulative GHG flux from biomass is below that of the fossil fuel alternative. In this case, longer time periods are needed to reach the point defined as "fully-offset damages.** … A key finding of our work is that the magnitude and timing of carbon dividends can be quite sensitive to the forest management practices adopted by landowners. Carbon recovery times can differ by decades depending upon assumptions about (1) the intensity of harvests; (2) the silvicultural prescriptions and cutting practices employed; (3) the fraction of the logging residues removed from the forest for biomass; and (4) the frequency at which landowners re-enter stands to conduct future harvests. … [T]he key question remains one of the appropriate weighting of near-term higher GHG levels with long-term lower ones. Policymakers will need to sort out these issues of societal time preferences and weight near term higher GHG emissions against longer term lower ones. … **"**

According to the authors of the Manomet study —

> The length of time it takes to pay down the [carbon] debt and realize dividends depends on four factors:

1. The lifecycle of the wood (e.g., logging debris, whole trees, trees vulnerable to catastrophic events) in the absence of the biomass energy opportunity.
2. The type of energy that will be generated (heat, electricity, combined heat and electricity), because different types have different efficiencies and thus different CO2 emissions profiles.
3. The type of fossil fuel being displaced (coal, oil, or natural gas), because different fuels have different emissions profiles.
4. The management of the forest—management can either slow or accelerate forest growth, and therefore recovery of carbon from the atmosphere.

Unless these factors have been assessed, as they have in our report for Massachusetts, it is not possible to estimate the time it would take to pay off the debt or the magnitude of the carbon dividends—making it difficult to draw conclusions about GHG implications of using wood.

"Manomet says press oversimplified study results." Biomass Magazine, June 21, 2010. http://biomassmagazine.com/articles/3914/manomet-says-press-oversimplified-study-results/

Recent modeling indicates that the reaching carbon parity takes much longer than just repaying the carbon debt, so the best way to use forests to mitigate climate change might be to just let them remain forests.

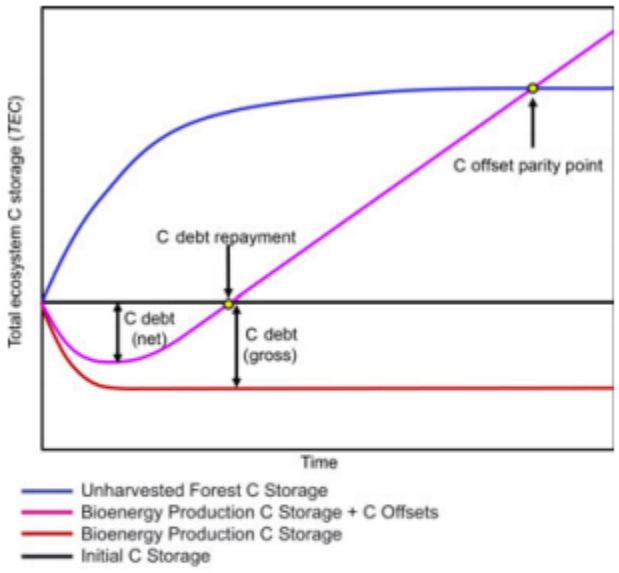


Fig. 1 Conceptual representation of C Debt Repayment vs. the C Sequestration Parity Point. C Debt (Gross) is the difference between the initial C Storage and the C storage of a stand (or landscape) managed for bioenergy production. C Debt (Net) is C Debt (Gross) + C substitutions resulting from bioenergy production.

Mitchell, Harmon, O'Connell 2012. Carbon debt and carbon sequestration parity in forest bioenergy production. GCB Bioenergy (2012), doi: 10.1111/j.1757-1707.2012.01173.x

http://ncfp.files.wordpress.com/2012/05/carbon-debt-paper.pdf ("Here, we used an ecosystem simulation model to ascertain the effectiveness of using forest bioenergy as a substitute for fossil fuels, drawing from a broad range of land-use histories, harvesting regimes, ecosystem characteristics, and bioenergy conversion efficiencies. Results demonstrate that the times required for bioenergy substitutions to repay the C Debt incurred from biomass harvest are usually much shorter (< 100 years) than the time required for bioenergy production to substitute the amount of C that would be stored if the forest were left unharvested entirely, a point we refer to as C Sequestration Parity. The effectiveness of substituting woody bioenergy for fossil fuels is highly dependent on the factors that determine bioenergy conversion efficiency, such as the C emissions released during the harvest, transport, and firing of woody biomass. Consideration of the frequency and intensity of biomass harvests should also be given; performing total harvests (clear-cutting) at high-frequency may produce more bioenergy than less intensive harvesting regimes but may decrease C storage and thereby prolong the time required to achieve C Sequestration Parity")

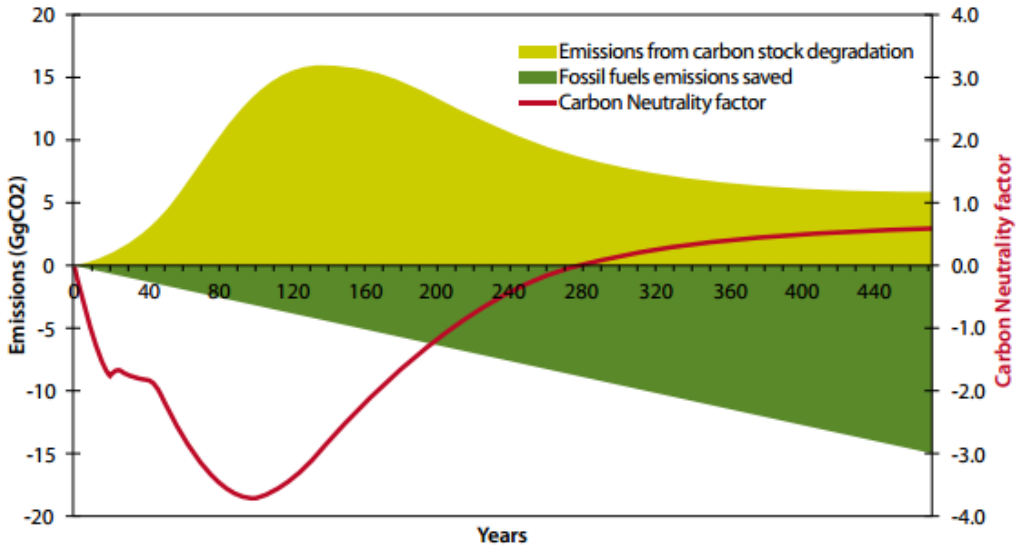


Figure 1: Graph showing the interplay of emissions from harvesting and burning biomass versus savings from fossil fuel replacement in the case of additional felling in a typical European managed forest, with wood used to replace coal in power generation. The red line shows the evolution of the carbon neutrality factor: biomass use in this case leads to increased emissions for the first two and a half centuries. Note that in the emissions ('green") graph, positive values mean emissions while negative mean emission savings. Conversely, in the case of the carbon neutrality factor ('red graph'), negative values mean net emissions while positive values mean net savings.

Birdlife International 2010. Bioenergy: A Carbon Accounting Time Bomb. Report of Birdlife International, European Environmental Bureau and Transport & Environment. Birdlife International. https://web.archive.org/web/20111112142304/http://www.birdlife.org/eu/pdfs/carbon_bomb_21_06_2010.pdf

In the video linked below, IPPC member, Professor Moomaw explains 10 reasons why bioenergy is not a climate solution. https://videopress.com/embed/NdsvARAw. William

Moomaw is Emeritus Professor of International Environmental Policy and Founding Director of the Center for International Environment and Resource Policy at The Fletcher School, Tufts University.

Achat et al (2015) conducted a meta-analysis and found that, compared to conventional harvest, intensive biomass harvest lead to losses of soil organic carbon in all layers of the soil. David L. Achat, Mathieu Fortin, Guy Landmann, Bruno Ringeval & Laurent Augusto. 2015. Forest soil carbon is threatened by intensive biomass harvesting. Scientific Reports 5, Article number: 15991 (2015) doi:10.1038/srep15991. http://www.nature.com/articles/srep15991

"Oregon used to remove structure from streams, thinking it would help fish. That didn't work. Now we are placing structure back into streams. Now we are heading toward repeating the same mistake on the terrestrial landscape by removing much of the structure and diversity from the forest ecosystem." Jim Myron. Former Oregon State Official.

Federal lands must mitigate for the lack of dead wood on non-federal lands, exemplified in part by the increasing levels of utilization found on non-federal lands. They also need to mitigate for the excessive levels of utilization during the heydays of efficient forestry. The current trend in wood fiber utilization in the forest products industry is exemplified in the following statement by the Chairman of Louisiana Pacific Corporation: "We need everything that's out there. We don't log to a 10-inch top, or an 8-inch top, or a 6-inch top. We log to infinity. Because we need it all. It's ours. It's out there, and we need it all. Now." (Harry A. Merlo, 1989) Sam C. Doak, Pacific Meridian Resources And Hammon Jensen, Wallen and Associates 1990. FACTORS INFLUENCING WOOD FIBER UTILIZATION AND MERCHANTABILITY. January 1990. http://library.ceres.ca.gov/docs/data/2100/2169/HYPEROCR/hyperocr.html. Plus these excerpts from the timeline in the Appendix: 1973 - Forest Service Chief John McGuire states that logging residues left on National Forests are 2 and 1/2 times the average on private commercial forestlands. Forest Industries (100)1. Forest Service proposes changes to standard timber sale contracts to require increased removal of material. Proposal includes scaling to the nearest foot, dropping trim allowances, dropping minimum net volume standards and increasing removal of culls and dead trees. Forest Industries (100)1. USDA Forest Service study emphasizes that due to growing environmental constraints on National Forests, future timber demand will have to be met from non-industrial private forestlands and improvements in utilization of raw materials. Forest Industries 100(3).")

> Owing to the peculiarities of forest net primary production humans would appropriate ca. 60% of the global increment of woody biomass if forest biomass were to produce 20% of current global primary energy supply. We argue that such an increase in biomass harvest would result in younger forests, lower biomass pools, depleted soil nutrient stocks and a loss of other ecosystem functions. The proposed strategy is likely to miss its main

> objective, i.e. to reduce greenhouse gas (GHG) emissions, because it would result in a reduction of biomass pools that may take decades to centuries to be paid back by fossil fuel substitution, if paid back at all. Eventually, depleted soil fertility will make the production unsustainable and require fertilization, which in turn increases GHG emissions due to N2O emissions. Hence, large-scale production of bioenergy from forest biomass is neither sustainable nor GHG neutral.

Ernst-Detlef Schulze, Christian Korner, Beverly E. Law, Helmut Haberl, And Sebastiaan Luyssaert. 2012. Large-scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutral. Global Change Biology – Bioenergy. GCB Bioenergy (2012), doi: 10.1111/j.1757-1707.2012.01169.x
http://soilslab.cfr.washington.edu/publications/Schultze-etal-2012.pdf

> Strategies for reducing carbon dioxide emissions include substitution of fossil fuel with bioenergy from forests, where carbon emitted is expected to be recaptured in the growth of new biomass to achieve zero net emissions, and forest thinning to reduce wildfire emissions. Here, we use forest inventory data to show that fire prevention measures and large-scale bioenergy harvest in US West Coast forests lead to 2–14% (46–405 Tg C) higher emissions compared with current management practices over the next 20 years.
> …
> In our study region, we found that thinning reduced NBP under all three treatment scenarios for 13 of the 19 ecoregions, representing 90% of the region's forest area. The exceptions where NBP was not reduced were primarily due to high initial fire emissions compared to NEP (for example, Northern Basin and North Cascades; Supplementary Fig. S2). The dominant trend at the ecoregion level was mirrored at the regional level, with the bioenergy production scenario (highest thinning level) resulting in the region becoming a net carbon source (Supplementary Table S2 and discussion of state-level estimates). Regionally, forest biomass removals exceeded the potential losses from forest fires, reducing the in situ forest carbon sink even after accounting for regrowth, as found in previous studies with different approaches or areas of inference. Because we have assumed high reductions in fire emissions for the areas treated in each scenario, it is unlikely we are underestimating the benefit of preventive thinning on NBP.

Tara W. Hudiburg, Beverly E. Law, Christian Wirth, and Sebastiaan Luyssaert. 2011. Regional carbon dioxide implications of forest bioenergy production. Nature - Climate Change. Letters. 23 OCTOBER 2011 | DOI: 10.1038/NCLIMATE1264.
http://www.dnr.wa.gov/Publications/em_fp_biomass_regional_carbon_dioxide_implications_of_forest_bioenergy_production.pdf

> **Chandler Van Voorhis: …** there is a certain amount of waste wood that needs to be kept on the forest floor. From an ecosystem standpoint it is not waste wood. It is food to re-

> nitrify that soil. So you are really starting to impact on the activity of that forest decades down the road.
>
> **Benedikt Von Butler: …** biomass could really be the Mini Disc which is replaced by an MP3 player, which is other sorts of renewable energy. The reason I say this is that at the moment biomass is a means to an end, in that it has a renewable energy carrier and storage function. However, as soon as you have alternative storage and carrier options, then this becomes a redundant fuel.

Roundtable: The sustainability of woody biomass. March 2015. https://www.environmental-finance.com/content/roundtables/sustainable-reforestation-biomass-and-environmental-credits/sustainability-of-woody-biomass-part-2.html

The EA should carefully consider the trade-offs associated with juniper removal. One of those trade-offs involves the lost opportunity to store carbon that mitigates global climate change. Landscape scale expansion of juniper woodlands is providing an ecosystem service (carbon storage via natural afforestation) and juniper removal erases that benefit. Campbell, J.L., R. Kennedy, W.B. Cohen, and R. Miller. 2012. Regional carbon consequences of Western Juniper encroachment in Oregon. Journal of Rangeland Ecology and Management. 65(3):223-231. http://larse.forestry.oregonstate.edu/sites/larse/files/pub_pdfs/Campbell_etal_2012.pdf ("unlike forest growth which is balanced by natural disturbance, timber harvest, and land conversion, woody encroachment is assumed to be largely one-directional with the potential result of a [significant] North American net carbon sink. … [T]he highest biomass shrubs with which juniper competes in Oregon (namely, Artemisia spp.) have an average biomass per unit crown cover of only 8% that of juniper (derived from juniper allometry of Sabin [2008], and sage allometry of Rittenhouse and Sneva [1977]). This means that even when juniper cover replaces sage cover on a one-to-one basis (as reported by Miller et al. 2005), aboveground biomass lost in shrubs is less than 8% that gained in aboveground juniper biomass. … This study illustrates the capacity of woody removal, over very small areas, to offset encroachment over very large areas …"); See also Barger, N.N., A.R. Archer, J.L. Campbell, C. Huang, J.A. Morton, and A.K. Knapp. 2011. Woody plant proliferation in North American drylands: A synthesis of impacts on ecosystem carbon balance. Journal of Geophysical Research. 116, G00K07, doi:10.1029/2010JG001506. http://fes.forestry.oregonstate.edu/sites/fes.forestry.oregonstate.edu/files/PDFs/Barger_2011_JGR.pdf ("The greatest tree biomass response occurred in Great Basin sagebrush steppe sites encroached upon by western juniper (J. occidentalis), sites strongly dominated by winter precipitation. … Changes in [above ground biomass] pools were greatest in systems experiencing Juniperus and Pinus spp. Encroachment …"]

The EA needs to take a hard look at the climate impacts of the natural gas supply chain and other compounds produced and emitted by this biofuel refinery.

This project will also use natural gas. The EA should disclose the adverse climate effects of this fossil fuel, including the methane leakage throughout the supply chain (e.g., fracking).

The gasification and refining processes for this facility will produce a variety of chemical compounds. Some of these compounds will be (accidently or purposefully) emitted to the atmosphere. The EA must fully and accurately disclose the climate impacts of all the different emissions.

The EA needs to take a hard look at connected actions such as logging and the climate impacts including this facility's contribution to the Social Costs of Climate Change.

Since the raw material for this biofuel enterprise is derived from "connected" logging activities, NEPA requires the EA to take a "hard look" at the effects of logging-related GHG emissions. (40 CFR 1508.25).

Disclose whether the cumulative effects of logging-related GHG emissions are consistent with emissions reduction goals established by state or federal government or international agreements. In Paris on December 12, 2015 the United Nations - Framework Convention on Climate Change agreed to a landmark climate agreement including Article 5 which says "Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4, paragraph 1(d), of the Convention, including forests." #COP21, aka Paris Agreement. http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf

"In November 2014, in a historic joint announcement with China, President Obama laid out an ambitious but achievable target to reduce greenhouse gas emissions in the United States in the range of 26 to 28 percent below 2005 levels by 2025." https://www.whitehouse.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change

On June 25, 2013, President Obama released his Climate Action Plan which includes forest conservation among the "first pillar"[1] of efforts to reduce emissions, saying: "Preserving the Role of Forests in Mitigating Climate Change: America's forests play a critical role in addressing carbon pollution, removing nearly 12 percent of total U.S. greenhouse gas emissions each year. … Conservation and sustainable management can help to ensure our forests continue to remove carbon from the atmosphere … "
http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf
"[A]dvancing efforts to protect our forests" is also mentioned in the 6th U.S. Climate Action Report under the United Nations Framework Convention on Climate Change (UNFCCC). The agency should advance this national climate goal by conserving public forests. Carbon emissions from logging public lands directly conflict with this important national goal and indicate potential significant impacts requiring an EIS.

[1] U.S. Dept of State 2013. draft 6th Climate Action Report http://www.state.gov/e/oes/climate/ccreport2014/index.htm (page 12).

In 2007, the Oregon legislature passed HB 3543 that codifies Governor Kulongoski's greenhouse gas reduction goals: namely, by 2010 to begin to reduce greenhouse gas emissions, by 2020 to achieve greenhouse gas levels 10% less than 1990 levels and by 2050 to achieve greenhouse gas levels 75% below 1990 levels. ORS § 468A.205. The agency should also strive to harmonize with State of Oregon statewide land-use planning goals (adopted in administrative rules) that prohibit land use activities that exceed the "carrying capacity" of air and water resources. OAR 660-015-0000(5) - (6). The Department of Land Conservation and Development (DLCD) defines "carrying capacity" as a "Level of use which can be accommodated and continued without irreversible impairment of natural resources productivity, the ecosystem and the quality of air, land, and water resources." There is a large body of science indicating that we are already beyond the level of CO2 in our atmosphere that can be described as safe or reversible.

Logging related GHG emissions (and forgone opportunities for increased storage of carbon in forests) will conflict with these state, federal and international GHG reduction goals.

Disclose the social cost of carbon as a proxy for the impacts of GHG emissions. GHG emissions from logging (and other land management activities) impose significant costs on society, such as the cost of damage caused by climate change and the costs of adapting to climate change and the cost of sequestering carbon to mitigate emissions. CEQ's draft guidance on NEPA and Climate Change recognizes that the social cost of carbon ("SCC") is a "harmonized, interagency metric that can provide decisionmakers and the public with some context for meaningful NEPA review." 79 Fed. Reg. 77802, 77827. "The SCC estimates the benefit to be achieved, expressed in monetary value, by avoiding the damage caused by each additional metric ton (tonne) of carbon dioxide (CO2) put into the atmosphere. Ruth Greenspan and Dianne Callan, World Resources Institute, More than Meets the Eye: The Social Cost of Carbon in U.S Climate Policy, in Plain English (July 2011) at 1, http://pdf.wri.org/more_than_meets_the_eye_social_cost_of_carbon.pdf. The NEPA analysis should carefully disclose these social costs. The express purpose of SCC analysis is to provide an apples-to-apples basis for comparing a project's economic benefits with GHG pollution impacts (costs). Where SCC is not analyzed and disclosed, these impacts (costs) are hidden from the public and, in fact, often "paid for" by the broader environment and public in the form of degraded ecological resiliency, public health impacts, and more.

For an example of how the social cost of carbon can be incorporated into NEPA analysis see Niemi (2015):

Summary

Actions that reduce the amount of carbon stored in federal forests contribute to disruption of the global climate by increasing atmospheric concentrations of carbon dioxide. The climate disruption raises the risk of economic harm—locally, nationally, and globally—from extreme weather events, higher temperatures, changes in precipitation, rising sea levels, acidification of oceans, and changes in ecosystems. Laws and executive orders require managers of federal forests to account for these risks. This paper describes the recent failure of the Bureau of Land Management (BLM), to satisfy the requirements. It also describes the steps the BLM must take to meet its obligations, and illustrates the method the BLM and other federal forest management agencies should use to account for carbon-related risks in the future.

> The BLM failed to account for climate-related risks when it selected its Preferred Alternative for managing federal forests in western Oregon. If implemented, this alternative would yield more timber but less forest carbon than another alternative. Using old data and a conservative view of risk, the BLM provided information that indicates the additional climate-related costs may:
>
> • *Outweigh the additional timber-related benefits by 2-to-1.*
> • *Equal $91,000 per additional timber-related job.*
> • *Equal $4 for every $1 of additional timber-related payments to local counties.*
>
> Current data, plus a widely accepted view of risk indicates the additional climate-related costs may:
>
> • *Outweigh the additional timber-related benefits by more than 30-to-1.*
> • *Equal $1.6 million per additional timber-related job.*
> • *Equal $68 for every $1 of additional timber-related payments to local counties.*
>
> The BLM disregarded this information when choosing its Preferred Alternative. To satisfy its legal and administrative requirements, the BLM should fully and clearly describe the climate related risks that accompany the Preferred Alternative, and explain its justification for imposing these risks on the individuals, households, businesses, and communities that would bear them. This justification should address both the reduction in overall economic wellbeing that would result from implementing the Preferred Alternative and the moral issues that arise from imposing climate-related risk on those that would not enjoy the timber benefits.

Niemi, E. 2015. Accounting for Climate-Related Risks In Federal Forest-Management Decision, 10 May 2015 [draft]. Federal Forest Carbon Coalition Background Paper 2015–2. http://static1.1.sqspcdn.com/static/f/551504/26259333/1432605642583/SocialCostsOfCarbonOClandsNiemiMay2015.pdf?token=wDqoa5RkP8EoBLlsRWIPPRuahzg%3D. Niemi (2015) explained that "Moore and Diaz (2015) found that accounting for the impacts of climate on economic growth increases the Interagency Working Group's estimates of the social cost of carbon by a factor of six." c*iting* Moore, F.C., and D.B. Diaz. 2015. "Temperature Impacts on Economic Growth Warrant Stringent Mitigation Policy." Nature Climate Change. 12 January. http://www.eenews.net/assets/2015/01/13/document_cw_01.pdf ("Optimal climate policy in this model stabilizes global temperature change below 2 ◦C by eliminating emissions in the near future and implies a social cost of carbon several times larger than previous estimates. A sensitivity analysis shows that the magnitude of climate change impacts on economic growth, the rate of adaptation, and the dynamic interaction between damages and GDP are three critical uncertainties requiring further research. In particular, optimal mitigation rates are much lower if countries become less sensitive to climate change impacts as they develop, making this a major source of uncertainty and an important subject for future research.")

The EA must recognize that the federal estimate of SCC likely underestimates—perhaps significantly—the climate impacts of GHG pollution. As the U.S. Environmental Protection Agency has concluded:

> given current modeling and data limitations, [the federal SCC values] do[] not include all important damages. As noted by the IPCC Fourth Assessment Report, it is "very likely that [SCC] underestimates" the damages. The models used to develop SCC estimates, known as integrated assessment models, do not currently include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature because of a lack of precise information on the nature of damages and because the science incorporated into these models naturally lags behind the most recent research.

EPA, The Social Cost of Carbon, http://www.epa.gov/climatechange/EPAactivities/economics/scc.html.

> Agencies seeking to incorporate climate change considerations in rules and regulations often rely on a cost-benefit analysis, weighing the cost of curbing emissions against the expected damages from every ton of carbon dioxide (CO2) that goes into the atmosphere — a value known as the "social cost of carbon" (SCC). … While no definite SCC has been set so far, an interagency working group has endorsed a "central" estimate of $21 per ton of CO2 in 2010, or roughly 20 cents per gallon of gasoline — far too small a price incentive to prompt substantive mitigation measures.
>
> …
>
> In the United Kingdom, which started estimating prices for carbon emissions several years ago, the government's latest calculation is a range of $41 – $124 per ton of CO2, with a central case of $83. An expanded calculation of carbon prices for the United States should at least explore prices in this range …

Frank Ackerman, Elizabeth A. Stanton. 2010. The Social Cost of Carbon - A Report for the Economics for Equity and the Environment Network. April 1, 2010. http://e3network.org/wp-content/uploads/2015/04/Ackerman_Social_Cost_of_Carbon.pdf .

In recent work, Nordhaus (2010) ran a an updated version of the regional integrated model of climate and the economy (RICE model).

> The model also calculates the path of carbon prices necessary to keep the increase in global mean temperature to 2 °C or less in an efficient manner. The carbon price for 2010 associated with that goal is estimated to be $59 per ton (at 2005 prices) …

William D. Nordhaus 2010. Economic aspects of global warming in a post-Copenhagen environment. PNAS June 29, 2010 vol. 107 no. 26 11721-11726. http://www.pnas.org/content/107/26/11721.full.pdf.

The 2006 "Stern Review" from the UK Treasury concluded that each ton of carbon dioxide emitted will cause $85 worth of damage to the world's economy. http://webarchive.nationalarchives.gov.uk/20080910140413/http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm. According to the Congressional Research Service, capturing and storing most of the carbon from coal as it is combusted costs between $43-89/ton of CO_2, and this price will likely increase after the many safety, environmental, and efficiency problems with CSS are fully accounted for. Parker, Folger & Stine. 2008. Capturing CO2 from Coal-Fired Power Plants: Challenges for a Comprehensive Strategy. CRS Report for Congress. http://www.fas.org/sgp/crs/misc/RL34621.pdf *citing* S. Julio Friedmann, Carbon Capture and Sequestration As a Major Greenhouse Gas Abatement Option (November 2007), p. 11. http://www.esrl.noaa.gov/gmd/co2conference/pdfs/friedmann.pdf That's another good indication of the value of a storing a ton of carbon in forests. Howard, P. 2014. OMITTED DAMAGES: What's Missing From the Social Cost of Carbon. http://costofcarbon.org/files/Omitted_Damages_Whats_Missing_From_the_Social_Cost_of_Car

bon.pdf ("ABSTRACT: The 2013 Interagency Working Group on the Social Cost of Carbon (IWG) updated the U.S. social cost of carbon (SCC) for 2015 from a central value of $24 to $37 using three integrated assessment models (IAMs): DICE-2010, FUND 3.8, and PAGE09. The SCC is the additional economic damage caused by one ton of carbon dioxide. While some have questioned the increase in the SCC as too high, a thorough examination of the latest scientific and economic research shows that $37 should be viewed as a lower bound. This is because the studies available to estimate the SCC omit many climate impacts—effectively valuing them at zero. Where estimates are available for a given type of impact, they tend to include only a portion of potential harms. This paper represents the first attempt to systematically examine and document these omissions for the latest versions of the three IAMs used by the IWG, as well as earlier versions when they are used in calibrating the updated models. … [H]ot spot damages include[e] increases in forced migration, social and political conflict, and violence; weather variability and extreme weather events; and declining growth rates. A better accounting of catastrophic damages is also needed, as well as many other impacts.")

Laurie T. Johnson & Chris Hope, 2012. The social cost of carbon in U.S. regulatory impact analyses: an introduction and critique, J Environ Stud Sci. DOI 10.1007/s13412-012-0087-7. http://www.ourenergypolicy.org/wp-content/uploads/2012/09/fulltext.pdf ("We reestimate the values from the models (1) using a range of discount rates and methodologies considered more appropriate for the very long time horizons associated with climate change and (2) using a methodology that assigns "equity weights" to damages based upon relative income levels between regions—i.e., a dollar's worth of damages occurring in a poor region is given more weight than one occurring in a wealthy region. Under our alternative discount rate specifications, we find an SCC [social cost of carbon] 2.6 to over 12 times larger than the Working Group's central estimate of $21"…)

See *High Country Conservation Advocates v. U.S. Forest Service*, — F.Supp.3d —, 2014 WL 2922751 (D. Colo. June 27, 2014) (holding that BLM's NEPA analysis of climate change impacts was inadequate, and that the EIS must provide a justification for not using the social cost of carbon as a protocol to evaluate impacts). If the agency chooses to disclose the economic and other benefits of logging, they must also disclose the social costs. See *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983), *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 448 (4th Cir. 1996); *Columbia Basin Land Prot. Assn v. Schlesinger*, 643 F.2d 585, 594 (9th Cir. 1981).

Note: If any of these web links in this document are dead, they may be resurrected using the Wayback Machine at Archive.org. http://wayback.archive.org/web/

Sincerely,

Doug Heiken

Doug Heiken
dh@oregonwild.org



Jeremy Austin
Hart-Sheldon Coordinator
Jeremy@onda.org

-----Original Message-----
From: George Wuerthner [mailto:gwuerthner@gmail.com]
Sent: Friday, February 05, 2016 7:57 PM
To: NEELY, JAMES A CIV USAF AFMC AFRL/RXME
Subject: Red Rock Biofuels EA

Dear Mr. Neely:

I am writing to object to the basic premise behind the Red Rock Biofuels EA.
One of the dominant assumptions is that forest thinning is needed to preclude
large wildfires.

There are several problems with this premise that are not adequately discussed
using the latest science.

A number of review articles have concluded that large wildfires are driven by
climate/weather conditions, not fuels. Here is the most recent of these
papers.
http://headwaterseconomics.org/wphw/wp-content/uploads/wildfire-insights-summary.pdf
I have attached several other papers and articles that draw similar conclusions.

Second, insects, fires, etc. are critical elements for maintaining ecological
health of forests creating snags, dead woods, and other materials.

Third, all logging reduces carbon storage. Forest management and thinning
degrades forests. Even compared burnt forests, a logged forest has less
carbon.

https://www.washingtonpost.com/news/energy-environment/wp/2016/02/04/forests-are-supposed-to-help-stop-climate-change-these-forests-didnt/

Often the value of carbon is worth far more than the wood. See some recent
comments by economist Ernie Niemi and papers by John Campbell discuss these
ideas.

Without adequately balancing the cost of forest degradation by eliminating
beetles and wildfires and its importance for wildlife, as well as ignoring the
important contribution to carbon storage that unmanaged forests hold for
global climate, the EA fails to demonstrate a positive net value.

Sincerely'

George Wuerthner
Box 8359
Bend OR 97708

NORTHWEST ENVIROMENTAL DEFENSE CENTER
10015 SW Terwilliger Blvd, Portland, OR 97219
PHONE: 503.768.6673 WEB: nedc.org

February 5, 2015

Via Electronic Mail: james.neely@us.af.mil

James Neely
Warren Assink
AFRL/RXME
Building 653, Rm 215
WPAFB Ohio 45433

Re: Draft Environmental Assessment and Finding of No Significant Impact Red Rock Biofuels LLC Woody Biomass Refinery, Lake County, Oregon

Dear Messrs. Neely and Assink:

The Northwest Environmental Defense Center respectfully submits the following comments on the Draft Environmental Assessment (EA) and Finding of No Significant Impact Red Rock Biofuels, LLC Woody Biomass Biorefinery Capability Development in Lake County Oregon issued by the Department of Defense.

With this EA the Department has failed to comply with National Environmental Policy Act (NEPA) at nearly every turn. To begin with, the EA fails to address the true scope of proposed project and the attendant environmental impacts. As a result of this fundamental and fatal flaw, the EA fails to provide a true accounting of the impacts of the project and thus fails to determine whether those impacts are significant enough to mandate the development of an environmental impact statement. In addition, the EA's alternatives analysis fails to address the entire project, and is inadequate even for the limited portion of the project, the facility itself, that is addressed. The EA wholly fails to address the cumulative impacts and the potential mitigation measures that are available. Finally, all of these errors both compound and are compounded by the Department's failure to use the required NEPA analysis early enough to be a useful part of the decisionmaking process. As a result, the Department must start anew. Based on the information available it is clear this process should begin with a draft environmental impact statement that considers the all of the potential impacts of the development of the design, construction and/or retrofit, validation, qualification, and operation of a domestic commercial-scale Integrated Biofuel Production Enterprise.

National Environmental Policy Act

NEPA directs federal agencies to prepare an environmental impact statement (EIS) whenever agencies propose "major federal actions significantly affecting the quality of the environment." 42 U.S.C. § 4332(2)(C); s*ee also Robertson v. Methow Valley Citizens,* 490 U.S. 332, 348 (1989). The scope of the environmental analysis required by NEPA includes a consideration of a range of actions, alternatives and impacts. 40 C.F.R. § 1508.25. The range of impacts includes direct, indirect, and cumulative impacts. *Id.* As a preliminary step, an agency may prepare an environmental assessment to determine whether a proposed action is sufficiently significant to warrant the preparation of a full EIS. 40 C.F.R. § 1508.9. Upon the preparation and subsequent review of an environmental assessment, the agency will be in a position to determine whether to prepare an EIS or to issue a Finding of No Significant Impact (FONSI). *Id.;* 40 C.F.R. §§ 1501.4, 1508.13.[1]

Discussion

At the outset, it is clear that the Department has failed to integrate NEPA compliance into the decision-making processes "at the earliest possible time." 40 C.F.R. § 1501.2. Rather, the Department appears to have prepared the EA as an afterthought to justify its decision. In doing so, the Department has frustrated NEPA's fundamental purpose—to insure that agencies actually consider environmental information before making decisions. *Id.* § 1500.1(b).

NEPA's goal of infusing environmental consciousness into federal decision-making "depends entirely on involving environmental considerations in the initial decisionmaking process." *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000). EAs must be prepared "early enough" to make an important contribution to the decisionmaking process . . .." *Save the Yaak Comm. v. Block*, 840 F.2d 714, 718 (9th Cir. 1987). "[E]arly enough" means "at the earliest possible time to insure that planning and decisions reflect environmental values." *Metcalf*, 214 F.3d at 1142 (emphasis added). Pro forma compliance does not suffice, *Center for Biological Diversity v. U.S. Forest Service*, 349 F.3d 1157, 1166 (9th Cir. 2003), because "NEPA's purpose is not to generate paperwork," 40 C.F.R. § 1500.1(c), or to "to rationalize or justify decisions already made." *Save the Yaak*, 840 F.2d at 718.

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[1] An EA is subject to the same general requirements as an EIS. *Save our Ecosystems* v. *Clark,* 747 F.2d 1240, 1247 (9th Cir. 1984); *Southern Oregon Citizens Against Toxic Sprays* v. *Clark (SOCATS),* 720 F.2d 1475, 1480 (9th Cir. 1983). In an EA an agency must "[b]riefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact," as well as "brief discussions of the need for the proposal, of alternatives as required by sec. 102(2)(E), [and] of the environmental impacts of the proposed action and alternatives." 40 C.F.R. § 1508.9. *See also* 40 C.F.R. § 1502.9(c)(1)(ii). Thus, an EA "must support the reasonableness of the agency's decision not to prepare [an] EIS." *SOCATS,* 720 F.2d at 1480

Here, the Department's cursory analysis of the impacts of, and alternatives to, a facility that is already at least partially permitted is the definition of pro forma NEPA compliance. As a result, the Department has violated NEPA. This violation can be cured by restarting the process, identifying what decisions have and have not be made, analyzing the true scope of the project, and allowing full and meaningful public participation before a final decision is reached.

A. The Department Must Issue an Environmental Impact Statement

NEPA's implementing regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its proposed action are "significant" and thereby require preparation of an EIS. *Id.* at § 1501.4. In determining whether the proposed action is "significant," the agency must consider the degree to which the action "may adversely affect an endangered or threatened species," the "[u]nique characteristics of the geographic area;" the "degree to which the proposed action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources," "the effects on the quality of the human environment are likely to be highly controversial, and "the possible effects on the human environment are highly uncertain or involve unique or unknown risks." *Id.* at § 1508.27(b). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." *Id.* at § 1508.27(b)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." *Pub. Serv. Co. v. Andrus*, 825 F. Supp. 1483, 1495 (D. Idaho 1993); *see also Nat'l Audubon Soc'y v. Hoffman*, 132 F.3d 7, 18 (2d Cir. 1997).

Fundamental to this analysis is the requirement that the agency review the potential impacts of the *entire proposal.* Here, the purpose of this proposal is to design, construct and and operate a domestic commercial-scale Integrated Biofuel Production Enterprise capable of producing at least 15.6 million gallons of biofuel annually. To accomplish this, Redrocks Biofuel has proposed to build a facility that will convert approximately 170,000 tons of woody biomass in to approximately 7.2 MMgal jet fuel, 7.2 MMgal diesel fuel, and 3.6 6 MMgal naphtha.

This is the stated purpose of the project. However, the reader of the EA knows virtually nothing about how Red Rocks LLC plans to obtain the raw materials for this project. Instead, the EA addresses only the direct impacts associated with the development of the facility site. This limited analysis is in no way sufficient to satisfy the requirements to address the direct, indirect and cumulative impacts of the proposed action. 40 C.F.R. § 1508.25(c).

Here, because the purpose of the facility is to develop alternative fuel source operation, the project's direct impacts are generally those that will result from the construction and operation of the facility *and* the activities necessary to obtain the feedstock for the facility. The indirect impacts, in turn, are those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." *Id.* § 1508.8(b). Here, those will the ways that human use of an area changes as a result of the proposed action, and the consequential effects of those changed uses on air, water, and ecosystems, including the areas where the feedstock is produced. *Id.*

Finally, the the cumulative impacts analysis must consider "past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." *Id.* § 1508.7. Here, this analysis will necessarily extend well beyond the limit area around the facility itself.

This analysis simply has not occurred. As a result, the Department is patent violation of NEPA and this process must begin anew. When this analysis does occur, NEDC believes the Department will quickly reach the singular conclusion that an EIS is required. Specifically, the potential impacts to federally listed species on nearby federal lands that will be accessed for the timber operations necessary to secure the biomass, the potential impacts to local cultural and historic resources from these operations; the potential impacts to the floodplain where the facility is currently proposed; the uncertainty around the viability of this type of facility and the precedential nature of this project (if it does succeed) all demonstrate the significant impact of this project and thus the need for an EIS.

B. The Department Failed to Consider a Reasonable Range of Alternatives

The Department's NEPA alternatives analysis is significantly flawed. "[C]onsideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process." *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228–29 (9th Cir. 1988). While an agency's obligation to consider alternatives under an EA is a lesser one than under an EIS, "NEPA requires that alternatives be given full and meaningful consideration, whether the agency prepares an EA or an EIS." *Center for Biological Diversity v. National Highway Traffic Safety Admin.*, 538 F.3d 1172, 1218 (9th Cir. 2008) (internal quotations omitted). Accordingly, EAs must analyze all reasonable alternatives and explain why an alternative was eliminated. Cursory or conclusory assertions are not appropriate explanations. *Greater Yellowstone Coalition v. Flowers*, 359 F.3d 1257, 1277 (10th Cir. 2004).

NEPA regulations mandate that an agency "shall to the fullest extent possible: use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 40 C.F.R. § 1500.2(e). Environmental analysis documents must "[r]igorously explore and objectively evaluate all reasonable alternatives" to the project. 40 C.F.R. § 1502.l4(a). A decision maker must explore alternatives in sufficient detail to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public." *Id.* § 1502.14. All reasonable alternatives must receive a rigorous exploration and objective evaluation "of environmental effects and values." *Id.* § 1501.2(b).

Here, the limited scope of the EA, as discussed above, irrevocably undermines the Department's alternatives analysis. However, even taking the analysis that does exist on face value, the Department has failed to comply with NEPA. Federal agencies cannot reduce the NEPA's alternative analysis to a binary choice between granting and denying an application. *See, e.g.*, *Save Our Cumberland Mountains v. Kempthorne*, 453 F.3d 334, 345 (6th Cir. 2006). That is precisely what the Department has does here with the three alternatives set forth in the EA.

The EA sets forth the proposed action as a site choice between two nearly identical plots, and a "no action" alternative. The Ninth Circuit has rejected this type of avoidance approach by agencies in the past. *See Western Watersheds Project v. Abbey*, 719 F.3d 1035 (9th Cir. 2013); Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d 800, 813 (9th Cir. 1999) (per curiam) (concluding that the EIS violated NEPA when the two action alternatives considered in detail were "virtually identical"). Indeed, "the evaluation of 'alternatives' mandated by NEPA is to be an evaluation of alternative means to accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals." *Van Abbema v. Fornell*, 807 F.2d 633, 638 (7th Cir. 1986). As a result, the Department must not only conduct an alternative analysis that addresses the full suite of activities that will make up the proposed action, it must also explore reasonable alternatives the facility design and location.

Conclusion

For the foregoing reasons, the EA for the Red Rock Biofuels facility fails to comply with NEPA. To cure these violations, the Department must set aside this EA and prepare an EIS.

Sincerely,



Andrew Hawley
Staff Attorney

Oregon
Kate Brown, Governor

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February 1, 2016

Messrs. James Neely or Warren Assink
AFRL/RXME, Building 653, Rm 215,
WPAFB Ohio 45433

Dear Messrs. Neely and Assink;

Thank you for the opportunity to comment on the Draft Environmental Assessment on Red Rock Biofuels, LLC, Integrated Biofuels Production Enterprise, Lake County, Oregon. We are generally pleased with the detail of the air quality portion of the Environmental Assessment. It generally appears to be accurate and complete in its analysis of the air quality in and around Lakeview and the permitting requirements for Red Rock Biofuels.

Several observations were noted by DEQ.

1) It is correct that the area is unclassifiable for PM2.5 and in 1993 part of Lake County was designated nonattainment for PM10 and is now a maintenance area as of 2006.

It should be noted that the area now has a PM Advance Plan submitted September 2014 that was generated when Lakeview violated the PM2.5 standard after the 2006 standard nonattainment area designations were published. We suggest you add the PM Advance Plan to the analysis. At the time, the area met the standard. The Table on page 30 is correct that the 3 year average for 2010-2012 was 33.7 µg/m3 for the 98%ile to compare against the 24-hr standard of 35 µg/m3 and the annual average was 8.4 µg/m3 to compare with the annual standard of 12.0 µg/m3.

However, we suggest you add both 2011-2013 and 2012-2014 to your analysis. If you include the next year 2013, the 2011-2013 98%ile is much higher for the 24-hr average at 57.7 µg/m3 for the 24-hr average (57.3 µg/m3 when wildfire data is removed) compared to the standard of 35 µg/m3. The higher 3 year average prompted the community to participate in a voluntary program called PM Advance sponsored by EPA. They prepared a robust plan to address the more recent 3 year average responding to the need to return the community back to meeting the standard. In addition, EPA recognized the participation. The Advance Program does not create nor avoid any regulatory requirements. It does provide a community an opportunity to take steps to

reduce particulate matter on its own. The Lakeview PM Advance Plan can be found at: http://www.deq.state.or.us/aq/LCLVadvisory/lclvAQ.htm

2) Lakeview and Lake County have also opted into an Oregon program called a sustainment area in April 2015. The urban growth boundary of Lakeview was designated a sustainment area by the Oregon Environmental Quality Commission while maintaining its status as an area in federal attainment. The sustainment status allows more flexibility for economic development while concurrently protecting air quality Before the sustainment area designation, Lakeview like other communities that exceeded or were close to the standard were limited by rules that made it extremely difficult for DEQ to permit new or expanding sources in these air quality challenged areas. With the sustainment rules, careful analysis to control emissions from existing sources could be weighed against proposed new or expanding industrial source emissions. The sustainment area rules provide a mechanism for creating a net air quality benefit by applying emission offsets to new industrial projects. For more information on Lakeview and its sustainment designation please see: http://www.deq.state.or.us/aq/permit/docs/LSAsupplnfo.pdf

3) Oregon has different green house gas (GHG) reporting requirements than EPA that should be acknowledged. At the top of page 36, it discusses the September 22, 2009 EPA Mandatory Reporting of GHG and explains that the threshold for reporting is 25,000 metric tons of GHG (as CO_2e). For Oregon, the GHG threshold is 2,500 metric tons of GHG (as CO_2e) as initially established in October 2008 and revised again December 2015. The rules associated with GHG reporting requirements are found in Oregon Administrative rules 340-215-0030 and 0040. See: http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_340/340_215.html

Again, thank you for the opportunity to comment on your Environmental Assessment. Should you have any questions on this part, please feel free to contact Larry Calkins at 541-278-4612 or Walt West at 541-633-2020.

Sincerely,

Mark W. Bailey
Eastern Region
Air Quality Manager

PLEASE USE THESE COMMENTS. REPLACING THOSE SUBMITTED LAST FRIDAY. THANK

WILDLANDS DEFENSE

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WLD
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February 4, 2016

James Neeley or Warren Assink
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WPAFB Ohio 45433

Dear DOD Air Force, BLM, US Forest Service, USFWS and Red Rock Project proponents,

Here are comments of WildLands Defense and Deep Green Resistance on the Red Rock Biofuels Project. The project documents are found at this site:

http://www.wpafb.af.mil/shared/media/document/AFD-151218-021.pdf

http://dpatitle3.com/dpa_db/Environmental_Assessment.html

Red Rock Biofuels Woody Biomass Refinery Project.

We are very concerned that there is no e-mail address for submitting public comments. This serves to limit public involvement in this highly controversial project. This project involves a complex and multi-faceted proposal inextricably connected to public lands. The comment period should be re-opened, and information posted on BLM and US Forest Service websites. The biomass material for this project will come from massive deforestation across public wild lands.

An EIS must be prepared to assess all direct, indirect and cumulative impacts of this extraordinarily subsidized deforestation campaign that will provide "feedstock" for the military and War Plane fuel. There is a very significant federal nexus – as the fuel sources (magnificent western juniper and other forests) are on public lands. Massive deforestation will take place across public lands, sensitive watersheds, wild lands, and sensitive and rare native terrestrial and aquatic species habitats.

This facility and the new gas pipeline are inextricably linked and connected to radical deforestation. The removal and destruction of forests, habitats for aquatic and terrestrial biota, and massive watershed impacts, here will be highly significant. This will also result in additional infrastructure footprint increases and/or upgrades involving roads and other intrusions in the public wild environment. There are serious air and water pollution concerns and human heath hazards. This project will have calamitous effects on wildlife, watersheds, and public use and enjoyment across a vast area of public lands.

There is significant public concern that it is a bait and switch – and the plant will burn natural gas and/or other or potentially toxic waste and gas - after massive federal

WildLands Defense is a 501(c)3 nonprofit corporation dedicated to protecting and improving the ecological and aesthetic qualities of wildlands and wildlife communities in the Western United

subsidies are exhausted, and the trees are destroyed in a grossly unsustainable manner. These are very slow growing arid forests. They are not resilient in the face of this extensive disturbance. They have a "natural" recovery rate of centuries. But recovery from this massive exploitation will be highly unlikely. Impacts will be irreversible, particularly in the face of climate change and alien weeds that thrive in zones of disturbance from deforestation and/or livestock grazing. Exotic weeds cheatgrass and medusahead caused by deforestation and continued livestock grazing will choke the ravaged lands. Entire watersheds and ranges are highly likely to become wastelands.

After this quickly takes place, the plant is likely to be switched to rely solely on natural gas. Many a plant claimed to be built for "Biomass" in the past – has, after the forests are quickly leveled, been converted to burn hazardous waste and/or toxic material in the place of wood.

Scorched Earth Proposal

Chris Zinda describes many serious impacts of this proposal in in *Scorched Earth* http://www.counterpunch.org/2016/01/12/scorched-earth-military-forest-to-fuels-in-oregon/ .

Please fully incorporate this article in the project record. It describes:

"The Warner Mountains form the east shore of Goose Lake, a narrow 70 mile long range in places over approaching 10,000'. Heavily forested, the range is the meeting place of three bioregions – the Great Basin, Sierran, and Cascadian – creating a unique mix of flora and fauna, many endemic. Its unique biology, geology and feel, an abundance of academics well know.

The archeological record indicates peoples have lived in the area for almost 15,000 years and the number of cultural sites and resources unparallelled in the United States – even compared to the southwest. Petroglyph panels 2 miles long and 40 feet high with figures taller than most men. Over the last few years, law enforcement has closed many of the large recently dry lake beds in the region because of looting.
Since contact, the area has been heavily logged and grazed – even irradiated from uranium production – but is recovering. With a population density averaging one person per mile, the potential for large scale wild lands protection for the many threatened and endangered species in this sea of blue sky, sage, antelope and juniper is among the best in the country".

Also: *"The Department of Defense is subsidizing Red Rock Biofuels, of Ft. Collins, Colorado $75 million to annually create 18 million gallons of highly volatile jet, naphtha (white gas), and diesel fuel from forest biomass in the town of Lakeview, Oregon ..."*

This raises the dangers of the derailment prone railway, and a highly significant environmental impact. The article also notes the area's great importance to the Pacific Flyway – and thus migratory birds. Pollution and damage to the environment from the plant emissions and potential pollution, and especially the massive deforestation that will take place, threatens this already highly damaged ecosystem even further.

"The project borders three states. Using a 75 mile radius, the Fremont-Winema in Oregon and Modoc National Forest in California are at risk. As are the Hart Mountain-Sheldon National Antelope Refuges in Oregon/Nevada and the Modoc National Wildlife Refuge in California. There are also three large BLM districts in three states".

Thus, the Red Rock Project will have a very significant pollution and resource damage and exploitation footprint across the region. There are different state laws and regulations that the air pollution, water pollution and other environmental impacts will be examined under and regulated by to various degrees. Nevada has minimal environmental standards, for example.

Scorched Earth references the need for Red Rock to release a private assessment document to address the sources of the biomass and the sustainability. Any assessment certainly must be revealed, and full public scrutiny and analysis must take place in an EIS process. There must be full analysis related to public lands, and from federal agencies, as well – prior to any plant being built. This process must be re-initiated, and must include a full public airing of assessment of biomass "sustainability" and the promises made by the developers in seeking the massive tax dollar subsidy.

Full and detailed risk assessments for all aspects of potential damage to the environment must also be provided.

Misleading DEA Information

The Draft document presents information in a misleading manner. It **falsely claims** "no federal lands are affected by the proposal".

"The purpose of the Advanced Drop-In Biofuel Production Project (ADBPP) Environmental Assessment (EA) is to assess the environmental impact of a proposed Federal action to support the design, construction and/or retrofit, validation, qualification and operation of a domestic commercial-scale Integrated Biofuel Production Enterprise (IBPE) capability. Specific to the project, no federally owned or federally designated tribal lands are affected by this effort".

This statement is false. A vast land area that will be deforested – with soils left to erode, disturbed soil and vegetation will become invaded by aggressive exotic weeds (with impacts amplified by livestock grazing disturbance), the watersheds will be ravaged and

streams choked with sediment. There will be loss of sustainable flows from destroying forested cover both at a micro-site level and across the region will have enormous adverse impacts to native animals already under great stress from desertification and over-use and loss of surface and ground water.

Cultural sites and artifacts will be exposed to erosion, crushed and damaged by heavy equipment engaged in massive deforestation and expanded roading/road footprints. Culturally significant areas will be destroyed. Pollution from the plant will poison wild lands, waters, habitats and very important cultural sites. As was shown in the cultural studies for the Ruby pipeline, the entire area surrounding Lakeview contains a wealth of cultural sites of great significance.

There will be tragic loss of wildlife habitat, including mature and ancient old growth western juniper and other forests. These arid forests are VERY slow growing –many trees are hundreds of years old – and western juniper can live to be greater than 1000 years.

Numerous raptors, migratory songbirds, small mammals and other wildlife rely on western juniper all or part of the year. So too do big game for cover and protection from human harassment and poaching. Sage-grouse will also be affected, as increased road use, and scorched earth deforestation will promote irreversible flammable weeds across the landscape. A good example of the near-total loss of sage-grouse WITHIN sagebrush habitats is the situation around Alturas and Clear Lake in the region, where understories are increasingly choked with invasive exotic grasses. These grasses will thrive in zones of biomass-linked deforestation. Fires will burn with increasing frequency, affecting the sagebrush habitat and sage-grouse populations.

Impacts of the Fuel Facility Swept Under the Rug in the Deficient DEA

There is only minimal and self-serving information provided to the public in the DEA. Language is often is very confusing and unclear. NEPA documents are supposed to be written so that the public can understand them. This one fails abysmally. Portions of the DEA are laden with confusing jargon, perhaps covering up the fact that the document is only revealing PART of the connected, linked and very foreseeable components of this grossly subsidized deforestation scheme. The facility may also be converted to burning hazardous or other waste incineration in the future – after the land is ravaged and laid bare.

There is no real range of reasonable alternatives. Such alternatives include protection of forest and wild land values through conservation initiatives, and enhancing the local economy based on tourism or restoration of sagebrush in burned or other depleted lands, not subsidized clearcutting of forests, and a polluting fuel plant harmful to human health. There is no consideration of alternative fuel project siting – much closer to sources where fuel would be used, thus greatly reducing risk of accidents in transport, and using fuel that is truly wood mill or other "waste" – rather than wasting arid forests in a completely

unsustainable manner. Those alternatives include the military putting any facility like this close to where there are forests that would not be so greatly damaged, where non-harmful "waste" would be used, and/or where much more infrastructure is in place. For example, when locating War Planes on military bases, a range of bases are considered in the military analyses we have reviewed in the past.

The DEA provides information on only a little of what will take place with this project. It ignores much of what is inextricably linked to and connected with it. The project will result in an altered and expanded infrastructure footprint beyond the pipeline and plant facility itself. This includes road upgrades or new roads/trails, for clearcutting and "harvest", and much more.
Roads and heavy equipment use in rugged, steep, rocky, mountainous wild land settings will result in soil erosion in wind and water, water pollution, loss of sustainable perennial flows and surface waters, loss of important and sensitive aquatic biota, loss and fragmentation of important and sensitive terrestrial biota, etc. The document states:

Description of the Proposed Action: Red Rock Biofuels LLC (Red Rock) proposes to construct a new biofuels facility and associated infrastructure to produce jet fuel, diesel fuel, and naphtha from a woody biomass feedstock consisting primarily of mill and forest residues. Annually, the plant would gasify approximately 32 170,000 bone dry tons per year of feedstock to produce approximately 7.2 MMgal jet fuel, 7.2 MMgal diesel fuel, and 3.6 MMgal naphtha. The facility footprint and associated components would be identical for two site options; however, the layout varies slightly on the alternative site parcels. The proposed facility would have an approximate 54-acre footprint. There is potential for adverse effects to historical and cultural resources, and mitigation is addressed in the project's National Historic Preservation Act.

No information is provided on where the "feedstock" will originate, and the impacts on the environment of such exploitation.

The mitigation is grossly inadequate, and the "mitigation" in many ways facilitates destruction of cultural sites. It might as well be called "salvage". In the Ruby pipeline scorched earth gas line development, the line blasted through cultural sites, while material was "salvaged". It is for only a fraction of the serious adverse environmental impacts caused by this project. There is no certain and effective mitigation for impacts to the air, water, watersheds, native vegetation, plant and animal communities, rare and sensitive and imperiled species, and human residents adversely impacted by the Red Rock scheme.

The highly significant density of cultural sites throughout the Lakeview area further demonstrates that alternative siting must be considered in a full range of alternatives to Lakeview.

Serious Adverse Impacts of Ruby Pipeline, Direct Indirect and Cumulative Adverse Impacts Must Be Assessed in an EIS

Direct, indirect and cumulative impacts related to this facility and the Ruby pipeline must be fully assessed, including the proliferation of development and adverse environmental damage in the pipeline's aftermath that is taking place across the Great Basin and other affected regions. So must the cumulative environmental impacts of the pipeline disturbance itself - as well as all the connected ensuing separate and piecemeal EAs, EISs and the development and disturbance associated with/and or facilitated by the gas line. How many ancillary/spur pipelines have now been built off Ruby? Where? What is the footprint? How many more are likely? The Ruby line spawned expanded new significant adverse environmental impacts and environmental degradation and fragmentation since the out-dated Ruby EIS analysis.

Further, it is also essential that a full analysis of the "mitigation" of the Ruby pipeline impacts be provided prior to any additional development being associated with it. The effectiveness (or lack thereof) of the mitigation, must be included in the Red Rock project analysis. There is a strong federal nexus here, too.

There is great concern that many areas of the pipeline have not been rehabbed as promised, have become weedlands, had much greater adverse environmental effects, etc. Funds that were supposed to result in mitigation for affected wildlife and wild lands have not been used in the area. They have often been used on projects that benefit livestock interests and not wildlife to any degree. Funds have been spent in grossly expensive projects with only a very small if any environmental benefit - like the horrific several hundred thousand dollar fencing projects in the Montana Mountains.

The Ruby pipeline is having a long-lasting serious adverse impacts on the sagebrush and western juniper wild lands, watersheds and wildlife habitats across the region. A whole series of spurs have torn up and fragmented habitats, and provide the fuel source for gold mines and other facilities with massive environmental footprints. OTHER gas plants must be assessed, too, as all of this combined with the biomass plant and gas line air pollution, and adverse connected land and habitat disturbance effects, must be considered.

Serious adverse impacts of all existing and foreseeable Ruby-associated developments must be considered by Red Rock. So must the impacts of fracking and environmental damage in Colorado, Wyoming and the sources of the gas for the pipeline and this spur. This must be evaluated under all Red Rock plant foreseeable scenarios. These scenarios include: biomass plus gas, biomass being prohibitively expensive and eating itself out of house and home quickly, potential conversion of biomass in whole or in part to toxic waste, or simply turning the facility into a gas plant.

We are very concerned that this biomass facility is really a subsidy to Colorado in particular (to keep gas production activity going there during a gas glut), as Colorado politicians were ardent supporters of the Ruby line.

We are very concerned that this is just a huge government subsidy to the gas industry at a time of low prices.

Please provide detailed and adequate economic analysis of all aspects of the costs and subsidies with this proposal, and the degree to which any and all aspects of it subsidized by taxpayers. This includes "harvest" of trees used in biomass in any form.

Climate Change Footprint and Effects

There are myriad adverse climate change and global warming effects of this proposal – both of the biomass plant and the inter-twined massive deforestation scheme.

This includes all aspects of tree killing/removal and all associated forest activity, road upgrades and use, hauling, skidding, machinery operation, or any other aspect of killing and amassing sufficient trees to use in a biomass plant over a prolonged period of time. And again, how long will it be until the supply of "feedstock" runs out? WHAT will it cost to transport materials to the plant, and what will the greenhouse gas and other emissions associated with that be? What is the greenhouse gas footprint of the plant? Of the War Planes burning the fuel?

This includes the massive deforestation loss of carbon sequestration and other climate amelioration benefits that would result from massive tree removal of forested vegetation required to feed the plant.

This includes the climate change effects of natural gas burning (and development activities), and the calamitous effects of its production and burning on the natural environment. EPA is requesting that FERC consider effects of natural gas: http://www.eenews.net/energywire/2016/02/04/stories/1060031773

This includes all aspects of the proposed biomass facility site development, materials use, processing, fuels production and hauling, transportation to a military site where it will be used, biomass use in fuel for War Planes, etc.

It also includes all impacts of any supposed "mitigation" for this massive inter-connected biomass-gas (potential future gas and/or gas and toxic waste) burning site.

There must be a full assessment of how livestock grazing and desertification affects all BLM, Forest service, state and private lands in the footprint of the 'feedstock" deforestation zone. Grazing amplifies the adverse effects of climate change on ecological processes. See Beschta et al. 2012, 2014. Providing a full and detailed environmental

baseline is essential to understand the irreversible and irreparable damage that the facility will cause to public lands and the natural world. This is crucial for understanding the lack of resiliency of forests and other vegetation types disturbed, altered, and/or destroyed by this massive deforestation scheme, and that will also suffer from the air and water pollution, and potential toxic or other chemicals released from the Red Rock facility under various foreseeable "feedstock" alternatives.

Deforestation will create hotter-drier more weed-prone sites. Recovery is likely to be very poor, and the ability of deforestation-disturbed systems to recover while suffering under climate stress will be significant. Aggressive flammable exotic invasive grasses will choke the landscape. See Jones et al. 2013 review of deforestation and other public lands "treatment" projects. This all combined will also advance desertification –resulting in loss of sustainable perennial water flows. It will result in extensive use of herbicides and other harmful chemicals as weeds proliferate in the wake of "treatments". ALL of these impacts must be assessed. Grazing amplifies all of these impacts.

These impacts, and air quality, are likely to worsen under climate change effects on Great Basin ecosystems. See Comer et al. 2012, Great Basin Rapid Ecological Assessment.

We are Attaching our recent comments on a BLM deforestation project in the Virginia Range. Please fully incorporate these comments, and concerns raised in the comments into these Red Rock comments. We request that all scientific information on forested vegetation (example, Lanner *The Pinyon Pine*), historical information and other records and concerns raised in these Virginia Range comments be fully addressed in this current Red Rock Lakeview process.

Air Quality Impacts Are A Serious Concern

There are very serious existing air quality concerns in Lakeview and the surrounding area. See https://law.lclark.edu/live/news/27853-nedc-files-petition-to-redesignate-lakeview-as . The following petition discusses air quality impacts.

"A coalition of regional and national conservation organizations and concerned citizens submitted a petition to the U.S. Environmental Protection Agency (EPA) on September 15, 2014, asking the agency to redesignate Lakeview, Oregon as nonattainment based on the area's repeated violations of the federal, health-based, standard for ambient air quality.
The 24-hour National Ambient Air Quality (NAAQS) for fine particulate matter ($PM_{2.5}$) is 35 micrograms per cubic meter ($\mu g/m^3$). From 2011-2013, ambient air in Lakeview averaged 56$\mu g/m3$ — the fifth worst in the nation. In 2013 alone, fine particulate in the ambient air in Lakeview was more than two times the federal standard at 94 $\mu g/m3$. $PM_{2.5}$ can accumulate deep in the respiratory system and is associated with numerous adverse health effects including premature death, increased hospital admissions and emergency room visits, and development of chronic respiratory diseases such as asthma.

$PM_{2.5}$ also causes visibility impairment, adverse effects on vegetation and ecosystems, and physical damage to property.
A nonattainment designation would impose stricter emissions controls in the area with a deadline to reduce $PM_{2.5}$ levels throughout the community.
In order to avoid a redesignation to nonattainment and skirt the strict controls associated with it, Lakeview and the Oregon Department of Environmental Quality (DEQ) have proposed various buffer programs that would allow continued development in the area. Yet these programs fail to require emissions reductions from existing industrial sources, leaving the area with ongoing $PM_{2.5}$ problems without adequate nonattainment controls.
"It is clear from EPA's data that Lakeview is not a borderline violator of the Clean Air Act," said Marla Nelson of the Northwest Environmental Defense Center. "Because Lakeview has consistently violated the federal standard, it should properly be redesignated to nonattainment."
Despite the fact that Lakeview is currently facing major air quality problems, two large-scale bio fuel energy facilities are being proposed:

- *DEQ has authorized construction of a 24-megawatt biomass electrical generation facility by Iberdrola Renewables*

Red Rock Biofuels has proposed a $70 million venture in Lakeview that will annually convert 140,000 tons of juniper trees into 14 million gallons of jet fuel ...

All of these impacts must be assessed under a full range of project and plant development and/or conversion scenarios. The complete environmental footprint of the deforestation and watershed impacts of this proposal must be fully assessed.

Human Health Concerns raised in the NA Petition include:

- *Increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing*
- *Decreased lung function*
- *Aggravation of heart and lung diseases*
- *Cardiovascular symptoms*
- *Cardiac arrhythmias*
- *Heart attacks*
- *Respiratory symptoms*
- *Asthma attacks*
- *Premature death*
- *Bronchitis*

A hard look must be taken at all of these serious health concerns in relation to this polluting Red Rock biomass to War Plane fuel plant

The Petition includes serious concerns about effects of particulate matter on vegetation:

1. *In addition, particulate matter contributes to adverse effects on vegetation, ecosystems, climate, and causes damage to and deterioration of property. Id. at 61,209. Specifically, excess levels of particulate nitrate and sulfate can lead to acidifying deposition to foliage, accelerated weathering of leaf and cuticular surfaces, increased permeability of leaf surfaces to toxic materials, water, and disease agents, increased leaching of nutrients and foliage, and altered reproductive processes. Id. at 61,209. Ultimately these impacts weaken trees and render them susceptible to other stresses. Id. PM deposited on terrestrial and aquatic ecosystems contributes to adverse impacts on species shifts, loss of diversity, and alteration of native fire cycles. Id. Ambient particles impact climate by scattering and absorbing radiation, changing the number and size distribution of cloud droplets, and altering the amount of ultraviolet solar radiation penetrating through the atmosphere to ground level. Id. Finally, PM nitrates and sulfates that deposit on materials may cause physical damage to and deterioration of property. Id.*

This demonstrates the proposal may have highly significant adverse impacts on sage-grouse, pygmy rabbit, antelope, and a broad array of native animals that consume the vegetation contaminated with biomass pollutants/residues. It is also is likely to harm Native American use of traditional food plants.

The Project is likely to increase forest health problems, increase tree mortality, and make the lands less likely to recover from disturbance- thus making the project even less sustainable.

Baseline Studies and Full Analysis of Ground and Surface Water Must Be Conducted - Assessment Must Include Strains on Aquifers and Sustainability, Pollutants and Surface and Ground Water Infiltration

An EIS must include a full assessment of the current baseline situation of ground and surface water, and aquifer levels. It must take a hard look at changes over time for all periods for which records have been kept. This must also include a full assessment of the strains and stresses on ground and surface waters from predicted climate change effects, as well as all deforestation, agency treatment, private land activity including ag. irrigation and diversion, ground water pumping, etc.

Goose Lake is already greatly depleted - and the native fauna that depend on the water in the area are under great stress and already on the verge of extirpation and/or extinction. The plant itself is located by Thomas Creek and in the 100 year floodplain. Pollutants may infiltrate ground and surface water and increase threats to aquatic species habitats. The DEA greatly fails to address the species that are at risk, and the seriousness of the existing threats to them.

Dangerous Co-location of Gas Line and Railroad, Proximity to Community, and Transport Accident/De-railment Risks

The DEA states:

A 0.36-mile-long rail spur would be constructed off of the Lake County Railroad to transport finished fuel products to market. Loading zones positioned for loading railcars would also be developed. In addition, a natural gas pipeline lateral would be extended from the Ruby Pipeline approximately 3 miles south of the Preferred Site and approximately 3.5 miles south of the Alternative site within the right-of-way for the railroad.

A risk analysis of what would take place must be assessed. This includes serious risks to workers and the community if there was an accident – with the mix of gas and highly volatile jet fuel, must be conducted.

There is also mention of uranium, and apparently past mining and/or processing. How much contamination it there? Disturbance and deforestation will increase potential soil erosion in wind tat could contain uranium. Also, are trees in the area contaminated with uranium, and if so, how does the Red Rock project increase the potential for human exposure to radioactive materials in air, water, etc.?

Ruby Pipeline - Massive Adverse Ecological Footprint Still Playing Out, And Must Be Addressed

Additional Concerns about Ruby Pipeline and disturbance footprint/cumulative effects on the region: WildLands Defense carries forward all of the comments submitted by environmental groups as part of the Ruby pipeline process. This includes the comments submitted by WLD's Fite when with Western Watersheds Project.

The gas line itself greatly fragmented sage-grouse and western juniper species habitats in remote wild land areas. Since the line was punched through the region, including along the highly controversial route from Wyoming through northern Utah, across north-central Nevada, and on south of Sheldon and then heading north towards Lakeview toward Malin, Oregon – several very harmful new gas pipeline spurs have been built to facilitate massive foreign gold mine exploitation of sage-grouse and other wildlife habitats, disrupt and deplete very scarce surface waters (being ever-more depleted across the region as result of environmental degradation, climate change, and irrigation, mining drawdown and other impacts). This mining pollutes the air including with mercury from processing that settles out far from the mine source, and generally eats the heart out of new areas of the Great Basin. Plus, despite El Paso (owner at the time) protestations that the Ruby gas line would not be used for export, these are now shone to be false as current proposals would do just that.

Highly Significant Cultural Sites in Local and Surrounding Larger Deforestation Zone

There are very significant cultural concerns here (please review Ruby pipeline materials, and highly sensitive areas and cultural resources). See also Zinda *Counterpunch* article claims. The minimal measures glanced over in the EA greatly fail to provide a proper baseline. Provide proper avoidance, and provide proper mitigation. The full range of cumulative adverse effects must be examined.

Highly significant archaeological sites and attributes (and culturally and/or historically important trees and sites that may still be used) are likely to be destroyed as the surrounding landscape ravaged to produce fuel for the military in this bizarre manner.

There will be immense adverse impacts to lands ravaged for "woody biomass" for this scheme. This natural gas and biomass plant will pollute airsheds and destroy scenic vistas, harm human health, contaminate ground and surface waters and vegetation through deposition of pollutants far from the source.

The gas pipeline and the plant poses a hazard and safety risk for the human residents and communities, as well as a risk to health by increasing the pollutant load in an area very close to non-attainment of air quality conditions. Under all proposed and foreseeable development scenarios, what will the pollutants released be? What will their effects to native biota, including aquatic species, and humans be? What will the risk of explosions and releases of toxic material, uncontrolled natural gas fires, uncontrolled gas or other fires breaking out and consuming the fuel – generating massive fireballs tat could kill people in the community and/or lead to uncontrolled wild lands fires? This includes in all phases of development, operation and radical deforestation of broad areas of the landscape.

Moreover, as Zinda describes in *Scorched Earth*, the fuel produced will be the equivalent of a "Bomb Train" traveling on rickety tracks through ag. lands, and wild lands highly prone to serious wildfires which greatly alter and destroy wildlife habitats, and through low income and Native American communities.

Project Is Grossly Unsustainable –An EIS Must Analyze Volume of "Cuttable/Usable" Biomass Wood, Location, Cost to Transport, Cost to Process, Etc.

This NEPA analysis and the necessary EIS must provide detailed data and analysis of acreages of cuttable trees, volume of wood, recovery rates for any "harvestable" material, all areas of mature trees, all areas of old growth trees, and the effects on habitat quality and quantity for wildlife impacted by proposals.

The analysis must clearly lay out how many mature and/or old growth trees will be required to produce one gallon of fuel, and the costs of this fuel production – per gallon.

Much of the Lakeview landscape consists of very rugged and/or rocky terrain. Removal of forested vegetation at a scale necessary for biomass production will result in major disturbance, major bulldozing, and destruction of cultural sites and materials as well as profound loss for sensitive and important wildlife species and watersheds – likely forever if weeds move in - of the habitat required by many species of native wildlife. This includes cavity nesting migratory birds, raptors, bats, and many other wildlife species. This includes rare endemic aquatic species already under great stress. See species information and accounts in the following:

http://www.dfw.state.or.us/conservationstrategy/docs/document_pdf/b-eco_nb.pdf

http://www.dfw.state.or.us/conservationstrategy/docs/document_pdf/b-eco_ec.pdf

https://www.jstor.org/stable/pdf/40983224.pdf?seq=1#page_scan_tab_contents

We describe the current distribution of native and non-native fishes in the Goose Lake basin, Oregon, with comparisons to prior unpublished surveys. We employed a generalized random tessellation stratified design to achieve a spatially-balanced sampling distribution across the drainage, including samples representative of both public and private lands. We collected all 9 native Goose Lake fishes, including 4 endemic fishes and the endangered Modoc Sucker. Two native fish species, the Modoc Sucker and the Pit Sculpin, were rarely encountered. The Modoc Sucker was limited to the upper Thomas Creek drainage; however, we documented a range expansion from that known at the time of listing in 1985. We collected the Pit Sculpin from only 2 sampling locations, indicating that the Oregon distribution of Pit Sculpins has contracted in the past 50 y. We also documented the apparent expansion of 2 non-native fishes, Fathead Minnow and Brown Bullhead, in the drainage. Within the Goose Lake fish assemblage, we describe 3 species groups that are correlated with land use and physical habitat parameters. The results of this study provide a baseline to assess trends in fish community structure over time and under different climatic conditions, measure the effects of restoration projects, and guide future restoration efforts.

http://www.pitriveralliance.net/resource/fishwild.html

This demonstrates that the last thing that is needed in this already seriously degraded environment is a polluting biomass plant based on deforestation:

Fish, Wildlife and Rare Plants

Several fish, wildlife, and rare plant species are endemic to the watershed, or a significant

portion of their population resides in the watershed. The highest profile species include the Modoc sucker, Goose Lake redband, willow flycatcher, greater sandhill crane, northern goshawk, sage grouse and spotted owl. However, several hundred more common species are dependent on the diversity of natural and cultivated habitats found in the watershed. Land managers face many challenges in providing species protection and preservation while allowing consumptive resource uses.

See also:

http://www.fs.fed.us/pnw/publications/pnw_gtr405/pnw_gtr405_63.pdf

Full updated analysis and consultation with all applicable state and federal agencies must take place.

There are very serious rare aquatic and terrestrial species concerns with all aspects of this project, and the damage that will be done to habitats by radical deforestation, pollution and other effects.

How many miles of roads will be built? How many miles upgraded? How will these activities impact water quality and quantity runoff into streams? How will they result in changed site micro-climate, changed site climate, etc.? What will the cumulative effects on watersheds and species be – given that there already has been a tremendous amount of logging, cutting and other human disturbances to these habitats including ubiquitous livestock grazing. See Fleischner 1994, describing some of the serious adverse effects of grazing. See WLD and DGR Virginia Mountains comments, describing serious adverse effects of deforestation in arid wild lands.

How difficult will it be, and what will the costs be, to "rehab" sites, and what will the scale of irreversible impacts be? How will the serious adverse effects of livestock grazing disturbance be dealt with as deforestation and heavy equipment disturbance tears apart the land? Please include required removal of livestock grazing from all lands deforested for "feedstock" for this project for several decades.

Witches' Brew of Potential Toxics

Biomass is alarming to many people, because it often is a subsidized smokescreen for future waste burning. The analysis must consider the pollution from the plant as proposed, and from any potential conversion.

Plants that have been built initially promising to burn wood have been turned into a toxic material burning/incineration/fuel site. For example, sites that burn tires, railroad ties, and hazardous substances.

Pollutants Will Worsen Early Snowmelt – and Feed into Climate Change Effects

Biomass pollutants will be deposited on snow. This represents dark material that will hasten snow melt, exacerbating the serious adverse effects of climate change on native ecosystems. This will be coupled with the hotter, drier more weed-prone sites created by the massive deforestation, increased roading/road footprint, and other effects of biomass exploitation of wild lands.

How Much Energy Is Required to Exploit and Produce Fuel, and for this Project?

Please provide detailed analysis of how much energy is required in all aspects of plant construction, operation and exploitation of forest products, gas and any other foreseeable substance that may be burned over the life of the facility. Please include any activities and other operations that may be harvesting wood for this plant.

How Much Loss of Forested Vegetation Has Already Taken Place in The Affected Landscape? How Depleted, Degraded and Fragmented Are the Forests?

BLM, Forest Service and private landowners have engaged in many logging projects, "treatments", livestock forage projects, and other deforestation projects over the years. There have also been significant wildfires in portions of this landscape that is within the massive environmental footprint of this project.

This has already resulted in a significant loss of native forested vegetation cover, and the many climate and ecological benefits this provides.

Please provide detailed mapping and analysis of the existing footprint of deforestation from all of these causes. Please do this over a proper cumulative effects area – in the minimal "cumulative effects analysis", the DEA looks at only a tiny area, in abject violation of NEPA. How have the projects, and the continued imposition of livestock grazing disturbance, affected micro-climate, weed expansion (including flammable invasive annual weeds like cheatgrass and medusahead that greatly alter fire cycles and doom native ecosystem?

What is the existing degree of habitat alteration, fragmentation and loss from these agency projects? From similar projects on state and/or private lands? How much more will this project make this?

Broad Range of Baseline Studies on Sensitive Species, Air Quality, Water, Wild Lands are Essential

The project is connected to radical deforestation and disturbance of public wild land ecosystems. Multiple year intensive studies for all species of native plants and animals impacted by, and within the footprint, of the massive deforestation must be conducted.

A detailed hard look must be taken at habitat quality and quantity, habitat fragmentation, status of local and regional populations, threats to local and regional populations.

This includes sage-grouse and sagebrush-dependent species, too. The linked and connected deforestation will disturb sage-grouse and threatens habitats and populations in many ways. This includes road disturbance, elevated wildfire risk, weed invasion of treated lands with weeds choking deforested areas and spreading (including due to livestock use) into sage habitats. See Belsky and Gelbard 2000, Chuong et al. 2015.

We are concerned that cattle or other livestock use may be increased in de-forested sites, in order to lessen impacts on sage-grouse habitats – in other words that one habitat is being destroyed in the name of "conserving" another.

The USFWS Not Warranted Finding for Greater Sage-grouse plan references the BLM GRSG RMP amendments embracing massive deforestation across 7 more million acres of public lands – primarily in the Great Basin, along with 10,000 linear miles of fuelbreaks. This will have massive detrimental cumulative impacts on migratory birds that rely upon juniper forests.

Serious Wetland and Pollution Deposition Concerns

The DEA admits the construction of the project impacts wetlands. It is within the 100 year floodplain of Goose Lake. Climate change is anticipated bring more extreme weather events. Though the lake is drying, extremes in weather could result in flooding of this toxic site and its rail spurs, pipeline, etc. This could also contaminate native American burial sites. Please review Ruby pipeline cultural materials – there are very high density sites in the Lakeview area.

Pollution of the Lake and wetlands will further harm the sensitive aquatic biota habitats and populations. This includes materials infiltrating ground water, or entering drainages during high water flows. It also includes pollutants deposited on surface waters, wetlands and the lake bed from the air pollution from this plant.

Underlying Claims and Basis for Lakeview Siting and Massive Subsidies Are False and/or Flawed

The DEA states: *ADDBPP contractors must develop a project site that meets the following Programmatic objectives:*

The IBPE will achieve economic viability, through stable and economic feedstock supplies, operational efficiencies, and viable product markets, by the end of the technical period of performance.

There is no data and analysis provided that shows the project is economically viable - in fact, it relies on massive federal subsidies.

The IBPE will be constructed within 3 years of the Phase I agreement award and demonstrate full-scale production capability within 4 years of the Phase 1 agreement.

We stress that an EIS MUST be prepared to assess the massive footprint of the facility, and of the horrific disturbance and loss of forested vegetation that will ensue.

Project Violates DEA Site Selection Criteria

The DEA states:

The following are site selection criteria related to these objectives:

Minimize natural and human environmental impacts;

The project does NOT minimize natural and human environmental impacts. It relies on massive deforestation, exacerbates climate change effects, relies on polluting fracked natural gas. Releases an unrevealed toxic soup of processing chemicals, is highly dangerous, destroys irreplaceable cultural sites, lays waste to wild lands and wildlife habitats, threatens ground and surface water with pollution and depletion, threatens native aquatic and terrestrial species, etc.

Compliant with "renewable biomass" as defined in Section 103 of the Federal Land Policy and Management Act of 1976 (43 USC §1702) that:

Renewable or recurring organic matter originating from non-Federal or Indian tribal lands held in a Federal trust or subject to restrictions against alienation imposed by the U.S. including:

There is no indication that deforesting mature and old growth western juniper and other very ancient and slow growing trees is in any way "renewable". There is a grave threat of highly flammable cheatgrass and medusahead infestation that will follow deforestation once sites are disturbed by heavy equipment; become hotter, drier and windier due to loss

of shade; are disturbed chronically by livestock grazing and trampling activity. All of these effects will be exacerbated by climate change. Complete EIS level analysis is necessary to understand whether or not ANY additional tree loss in this region is renewable. The area has already bee significantly impacted by past logging, fires, "treatments" for livestock forage, and various forms of human development.

Uses forest byproducts that are removed as a preventative treatment to: reduce forest fire fuel and risk, reduce or contain disease or insect infestation, or restore ecosystem health;□Otherwise used for higher-value products;

[There is no indication that this is the case. This alone shows there is need for complete and integrated analysis at the level of an EIS- as any operation here must rely to a very large extent on deforestation on BLM and Forest Service lands. There is no indication and analysis demonstrating that this will be the case. This shows a clear nexus with public land sand public lands management that must be assessed in an EIS prior to finalization of any analysis for the facility. There is no assessment of what a higher value product might be, and alternative uses for any trees killed on public lands].

Harvested in accordance with applicable law and land management plans and required for old growth maintenance, restoration and management in accordance with Section 102 sub-section (e) paragraphs 2 through 4 and the large tree retention sub-section (f) of the Health Forest Restoration Act (16 USC §6512).i) ii)

[There is no indication and analysis demonstrating that this will be the case. This shows a clear nexus with public land sand public lands management that must be assessed in an EIS prior to finalization of any analysis for the facility].

Renewable organic plant material to include trees, algae, or other microorganisms grown for the specific purpose of converting into energy; and□Waste materials including crop residues (including cobs, stover, bagasse and other residues); vegetative waste (including wood wastes and

Have appropriate zoning for the construction/operation of an IBPE and sufficient distance from non-compatible zoning: residential, commercial, public parks and non-industrial areas;

There is not sufficient distance due to the dangerous substances involved – natural gas, harmful biomass production gases and the final fuel product. If an accident happens, there could be a massive explosion, toxic material released near town, etc.

Be located in a commercially-viable location;□Have proximity to required resources and/or markets;□Have access to multi-modal transportation infrastructure ...

It is uncertain if this is commercially viable even with subsidies because there is no systematic and thorough analysis of the volume of biomass from public lands that would

be needed vs. what is sustainable. The massive subsidies for siting this plant in this distant location shows it is not economically/commercially viable.

Allow for development within the time frame necessary to meet the Program objectives.

THERE is no evidence provided that conditions for suitability for biomass in DEA section 2.3.1 are met. FULL review of the public lands element of this proposal must take place to understand the validity of these claims. There is very little forest on private lands.

We can readily foresee agencies being forced to write erroneous environmental documents based on false claims by the politicians who are behind the massive subsidies for this boondoggle project.

The biomass material will HAVE to come from federal land in order for there to be a sufficient volume:

Biofuel must come from an acceptable feedstock:

The following are site selection criteria related to these objectives:

Minimize natural and human environmental impacts;

Compliant with "renewable biomass" as defined in Section 103 of the Federal Land Policy and Management Act of 1976 (43 USC §1702) that:

Renewable or recurring organic matter originating from non-Federal or Indian tribal lands held in a Federal trust or subject to restrictions against alienation imposed by the U.S. including:

Uses forest byproducts that are removed as a preventative treatment to: reduce forest fire fuel and risk, reduce or contain disease or insect infestation, or restore ecosystem health;□Otherwise used for higher-value products; and

Harvested in accordance with applicable law and land management plans and required for old growth maintenance, restoration and management in accordance with Section 102 sub-section (e) paragraphs 2 through 4 and the large tree retention sub-section (f) of the Health Forest Restoration Act (16 USC §6512).

There is no certainty that ANY of these above are indeed is the case. In fact, clearcutting/removing trees for biomass is likely too INCREASE fire risk by result in hotter, direr, weedier windier sites with earlier and longer fire seasons. There is great and raging debate over "ecosystem health". "treatments" and deforestation often ahs serious adverse irreversible ecological outcomes. See Jones et al. 2013, See WLD and DGR comments on

NEPA requires that a hard look is taken at conflicting viewpoints, and rigorous review of science. This DEA is a self-serving near-zero analysis document. It greatly fails to consider a panoply of current scientific information- ranging from pollutant hazards to impacts on native vegetation communities. It is written as if the material will just magically appear out of thin air.

Biomass: Hazardous and Harmful Effects and Impact Concerns – Detailed EIS Level Analysis Necessary

The military simply cannot sign a FONSI for this massive project – whose impacts will be extraordinarily significant.

A recent article in Earth Island Journal illustrates the need for an EIS here, as many Americans do not understand the serious adverse effects of biomass.

http://www.earthisland.org/journal/index.php/elist/eListRead/media_bias_for_biomass_energy/

While only 19 of the 80 articles — 24 percent — mentioned the dark side of forest biomass energy, the negative health and environmental impacts of this alternative energy source are widely documented by recent science.

US Environmental Protection Agency emissions inventories and peer-reviewed scientific studies demonstrate that biomass energy facilities emit high levels of carbon dioxide and nearly all of the same air pollutants as a coal-fired plant, such as asthma-inducing particulate matter and carcinogenic Volatile Organic Compounds. Biomass energy also consumes a constant supply of trees, the logging of which can degrade and compact forest soils and also cause erosion, silting fisheries and drinking watersheds.

Note that these impacts occur from a plant that solely produces biomass. Now add into this mix natural gas, and potentially trash and toxic materials that are foreseeable pollutants in ground and surface water, in soils, on vegetation, and affecting local and regional residents as well as sensitive aquatic and terrestrial biota.

ALL of this in a near-non-attainment area where air quality is only likely to worsen as livestock grazing promotes cheat, medusahead and more frequent range fires; deforestation results in earlier and longer fire seasons and flammable exotic weed proliferation; public lands welfare ranching and other livestock grazing churns up dust that contributes to air pollution.

Myriad Watershed, Water Quality and Water Quantity Concerns

The plant will use water in development and operation. Deforestation will greatly exacerbate the continued loss of surface water and flows into Goose Lake and other areas. Water will be used for dust abatement at logging sites, and in many other ways. Watersheds are likely to unravel as denuded hillsides was away and as streams entrench and downcut – resulting in loss of water-holding ability. The Lake is dying. So are the biota with it. Grazing exacerbates erosion of watersheds and other adverse effects of this proposal. There is no information on the current health and impacts of grazing disturbance across the BLM, Forest, state and private lands where deforestation may take place.

The DEA admits numerous very important watersheds are present, but no information is provide on how this project and using biomass as "feedstock" from them, will actually impact them:

- Lake County contains all or parts of twelve different watersheds, including Little Deschutes,
- 19 Beaver-South Fork, Lower Crooked, Williamson, Sprague, Lost, Silver, Summer Lake, Lake
- 20 Abert, Warner Lakes, Guano, and Goose Lake (EPA, 2013). The Little Deschutes, Beaver-South
- 21 Fork, and Lower Crooked watersheds form part of the larger Deschutes Basin, a major tributary
- 22 to the Columbia River Basin to the north. The Williamson, Sprague, and Lost watersheds form
- 23 part of the Klamath River Basin, which drains southwest into northern California and to the
- 24 Pacific Ocean. The Silver, Summer Lake, Lake Abert, Warner Lakes, Guano and Goose Lake
- 25 watersheds are all endorheic, or closed, basins, and have no outflow under normal conditions.

If watersheds are "endorheic" pollutants will further accumulate in the local area, and add to the water and air quality problems further. What aquatic and terrestrial species inhabit these watersheds, and how will all activities linked to this proposal impact them? What species have been proposed for ESA listing? How will this project move species closer to ESA listing?

Pollutants will affect these, and Nevada and California watersheds (and airsheds).

Loss of surface water flows will be worsened. Many of these areas contain livestock-grazing degraded watersheds that have lost the capacity to retain and slowly release water and flows. There is also agricultural diversion and ground water pumping combined with climate change and other effects. The plant pollutants and other Red Rock-linked impacts will fall into and pollute ever-more diminished surface waters – resulting in potentially even more harmful concentrations.

Please fully assess all of the significant adverse environmental effects as described in the scientific studies and reports found at this link:

http://www.energyjustice.net/content/biomass-library-scientific-reports

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The High Costs and Low Benefits of Attempting to Increase Water Yield by Forest Removal in the Sierra Nevada, Rhodes and Frissell, Environment Now, December 2015

NUISANCE

No Proof of Harm: A Citizen Science Investigation, Breathe Clean Air Group, May 2015

GREC Biomass Plant: Report to the County Manager Regarding Noise, Wolf, September 2013

ASH

Cesium 137 in Wood Ash: Results of Nationwide Survey, Stewart Farber

We hope to submit additional comments. Please keep us fully informed of all aspects of this and any associated proposals.

We urge the DOD to abandon this project.

We are concerned that once the trees are ravaged, the plant will also become a toxic waste incinerator of one sort or another.

The full federal nexus of this scheme must be assessed in an EIS –which includes the monumental public lands and environmental pollution footprint.

Air, water pollution, loss of wildlands habitat, other resource pollution and depletion will affect multiple western states. Oregon, Nevada and eastern California, at a minimum. The existing very poor air quality from dust, mining pollutants, grazing and disturbance, etc. – in local and regional areas must be fully assessed.

There is greatly insufficient scientific information and analysis provided to support the information in the Table of Environmental Impacts, as well as the Table of Environmental Consequences in the DEA. This applies to air quality, water resources, biological resources, cultural resources and land use. There is no scientific and/or rational basis supporting the conclusions of minimal to near-non-existent impacts, short duration, etc. There is no adequate mitigation for the serious pollution concerns, and biological and cultural harms that will be caused.

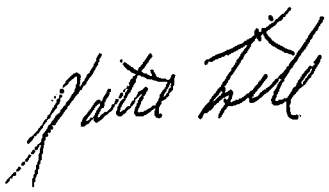
The discussion of "irreversible and irretrievable impacts" ignores the pollutant particles that will rain down on the land, or infiltrate the waters and water tables. It ignores potential human health and diseases that will not be curable from the pollutants. It ignores the devastating losses to forested vegetation and wild lands, irreversible exotic weed invasions in the wake of project disturbance, and the native biota that rely upon them.

There also appear to be numerous other developments and disturbances taking place in the Lakeview area their full disturbance footprint and impact on the environment and cumulative effects must be fully assessed.

http://www.andersonengineering.com/Lakeview%20Geothermal%20Project%20EA%20April%202012.pdf

Further, the potential loss of human life and damage done by use of this fuel. The use of fuel derived from the death of ancient forests in War Planes is not examined.

Sincerely,



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/mw
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